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TABLE OF CONTENTS

THE PHILIPPINE JOURNAL OF OTOLARYNGOLOGY
HEAD AND NECK SURGERY

THE EDITORIAL STAFF

BOARD OF EDITORS

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HEAD AND NECK SURGERY - TO ADD OR NOT TO ADD: A REBUTTAL OF THE PCS AND PMA COMMITTEE POSITIONS

Guest Editorial: ANGEL E. ENRIQUEZ, MD

A year ago (1989), the Philippine College of Surgeons caused to be sent, to all medical institutions and hospitals all over the archipelago a position paper on the proposal of some Departments of Otolaryngology to add "Head and Neck Surgery" to their present departmental name. Briefly, the College (Philippine College of Surgeons) thru the Board of Regents and in consultation with the Advisory Council of Past Presidents and after meeting with the Philippine Society of Otorhinolaryngology and the Philippine Society of Plastic and Reconstructive Surgery has resolved that ***"Head and Neck Surgery should not be added in (to) the present Department of Otorhinolaryngology"***. In August 16, 1990, perhaps to prove that there are aggrupation of General Surgeons other than those listed above who will always be the last to give up what is old and slow to accept the new, the Philippine Board of Surgery through the PMS's Committee on Affiliate Medical Societies, recommended that the ENT specialty board ***drop the caption Head and Neck Surgery.*** (Underlining ours)

These are extremely serious statements as it poorly disguised an unprofessional attempt to paint us otolaryngologists as not qualified to perform head and neck surgery.

How did it happen that departments of Otolaryngology are proposing a name change. Perhaps the best answer is to "represent an intent to accurately characterize the current scope of (the) specialty. The name is a clear reflection of current practice activities and should not be perceived as a descriptor (that is an attempt to expand the horizons of Otolaryngologic surgery at the expense of other surgical specialties"). It makes good sense in that the major part of what otolaryngology consists of is surgery of the head and neck areas and does not imply exclusiveness as there is no intent to exclude others from receiving training in or practicing head and neck surgery.

Old ways of thinking do die hard indeed. Worse, it is no longer relevant with the new wave of advances in medicine and surgery. And those who adamantly cling to obsolete ideas suffer obsolescence. Even their thoughts are affected by competition. Small wonder the Philippine College of Surgeons opted for a status quo, which, at best, is anathema to progress. Unimaginable still is the PMA's recommendation that the specialty drop the caption Head and Neck Surgery without giving the society or the specialty board "due process". When the Committee on affiliated Medical Societies of the PMA was reminded that this is being threshed out with the Phlipppine College of Surgeons, said committee immediately rescinded its letter addressed to the Chairman of the Philippine Board of Surgery thus rendering its ruling null and void. Ang nanghimasok sa pagkakabinyag ng dalawang pangalan sa sinuman ay hindi lamang nararapat kundi ay kabastusan.

While it is true that the term "head and neck surgery" evolved as operations of radical extent in the head and neck areas developed, the term is by no means vague as claimed by our well meaning colleagues in general surgery. It encompassess surgery of the cranial base, maxillo-facial, temporal bone, facial plastic and reconstructive surgery not only for malignant lesions but also for benign tumors, congenitallesions from the base of the skull down to the clavicle, etc.

The name change of the original Philippine Society of Otolaryngology & Bronchoesophagology to the Philippine Society of Otolaryngology - Head & Neck Surgery, Inc. and for the Philippine Board of Otolaryngology to include Head & Neck Surgery as well as the name of the society's journal (The Philippine Journal of Otolaryngology - Head & Neck Surgery) - all registered with the Securities and Exchange Commission represent an intent, as previously stated, to accurately characterize the current scope of the specialty. Bronchoesophagology was deleted from the original name of the society with the advent of new technology that allowed other specialties including general surgery to include this in their current practice activities. The concerns, therefore, about the scope of the specialty appear exaggerated and unjustified and to delete "head and neck surgery" now from

otolaryngology is to make an amputee of the specialty.

"The simple fact of the matter is that the science and practice of medicine and surgery are not static."

Loring Pratt, MD

The allegation of the Philippine College of Surgeons that "additional training is necessary whether they be graduates of residency programs in general surgery, plastic surgery or otorhinolaryngology is a redundancy as far as otolaryngology is concerned since the required training program for accreditation calls for proficiency to thyroid and parotid surgery, laryngectomies, etc. Enrollment in approved post graduate courses in head and neck oncology is mandatory.

These requirements are so stringent that, to this day, only six (6) institutions are accredited for residency training in otolaryngology. These are Depts. of Otolaryngology - Head & Neck Surgery of the following medical institutions:

1. U.P. College of Medicine - Philippine General Hospital
2. U.S.T. Faculty of Medicine and Surgery
3. P.L.M. College of Medicine - Ospital ng Maynila
4. Jose Reyes Memorial Medical Center
5. East Avenue Medical Center
6. M.C.U.-F.D.T. Medical Foundation

Of all the different surgical aggrupation with interest in the head and neck areas, it is inarguable that the otolaryngologists, by virtue of their training and orientation, are very familiar with the anatomy and instrumentation employed in these areas and, therefore, the best qualified to evaluate and manage pathological lesions in these regions. That significant number of neck masses are metastatic from primaries situated within the realm of otolaryngology places the otolaryngologist in the best position to diagnose and treat such cases. Although actual figures are not available, there is a growing suspicion that more head and neck surgical procedures being performed by otlaryngologist - head and neck surgery residents. This implies that there is greater operative experience in Otolaryngology considering the fact that is involved only some 6 institutions compared to more than 45 institutions accredited in general surgery.

"It is absurd to believe that it would be possible or practical for the general surgeon —to properly manage complicated patients in all fields."

Loring Pratt, MD

Being truly reflective of our activities in the specialty, the Philippine Board of Otolaryngology - Head and Neck Surgery, Inc. holds that the name change from Otolaryngology to Otolaryngology - Head & Neck Surgery is appropriate, upbeat and clearly reflects the regional scope of the specialty.

ANGEL E. ENRIQUEZ. MD

Editor's Note :

(Dr. Angel E. Enriquez is one of the elders of this specialty and and has seved as president of the PSO-HNS, editor-in-chief of the Philippine Journal of PSO-HNS and, presently, it the president of the Philippine Board of ORL—HNS.)

PRESIDENT'S PAGE

The years 1989-90 have proven to be very eventful, even tumultous years for our country. Each of us has a role and a story to tell concerning these events - devastating array of coups, destabilizing attempts, earthquake, floods, welga etc.

The PSO-HNS has been equally colorful during these years perhaps influenced by the fast phase of these happenings and the challenge to deliver or else be a laggard in an era of turbulent changes.

The first test of the Society's mettle was the disruptionof its Annual Convention in December 8-9, 1989 when the puschists choose the 1st week of December to launch its bloodiest coup. All of us, particularly in the organizing commitee had nothing but curse for these counter productive measures but the committee headed by its able chairman, Dr. Dominador Almeda, could not be cowed by these events. After all the ideas, efforts and time invested in preparation for these first big time Annual Convention, nothing could dampen the spirits of the organizers. It finally pushed through a month later on January 26-27, 1990, ushered in by the first ENT week and initiated by a festive one day sports fest at the Astra Sucat Compound.

After the initial debacle, the events took a rapid fire proportion:

The interhospital grand rounds, a simple but novel way of scientific exchange particulary beneficial to our residents, became an on going quarterly affair, Thanks to the organizers headed by Dr. Rene Tuazon and to the recent hosts - The ENT departments of UST and JRMMC.

These initial success fuelled the enthusiasm of the leadership of the society with the cooperation of members from Region I particularly Drs. Carlos Dumlao, Zen Wi, Leonardo Mangahas launched the first out of town mid-year convention at the Nevada Hotel , Baguio, last June. (This was the last medical convention that Hotel ever hosted before it was totally flattened by the destructive earthquake). As a consequence, the provincial members became enthusiastic in forming chapters. Whether decentralization will be productive or not, is now under study.

Earlier this year, a new organizing committee was formed, chaired by the energetic Dr. Cesar Villafuerte, Jr. to prepare for the forthcoming annual convention and the second ENT Week on December 2 to 8 this year. Prominent personalities from Europe, Japan, United States, and Hongkong will grace the occasion. This is probably the time to solicit Divine Providence to prevent any untoward event that will spoil the occasion together with the energies invested on it.

Occasions like these tend to project a glowing image for our society and like the provervial ripe mango fruit, with its striking yellow color and sweet fruity odor, critics try to pull it down and even casst doubts as to its technical ability in the field of head and neck surgery. The main contention is our title "Philippine Society of Otolaryngology-Head & Neck Surgery, Inc.". which according to to these same critics, is a claim to exclisivity to head and neck surgery in this country. The English in this title is very simple and elementary and therefore the charge is baseless.

Nevertheless, in the spirit of cooperation, our society has joined the "Council of Head & Neck Surgery", an Ad Hoc committee created by the Philippine College of Surgeons. This council is tasked to formulate guidelines in the practice of Head & Neck Surgery in the country particularly in the training of future head & neck surgeons and their eventual practice. Drs. Manuel Lim, Alfredo Pontejos and myself are our country's representatives to this body and have been attending monthly meetings.

Meanwhile, the routine scientific meetings on Interesting Cases, Clinical Research, Surgical and Instrument Innovations, are all on going projects.

Our ties with the ASEAN Otorhinolarygology Federation was renewed April last year when the sizeable delegation from our country went to Singapore and presented interesting scientific papers.

The 10th issue of Philippine Journalof Otolaryngology-Head and Neck Surgery just came out of the press and as usual is filled with scientific and literary gems, a product of the ability of its new editor, Dr. Alfie Pontejos.

All these milestones in the history of our society could not have been realized if not for the selfless cooperation of each individual members guided by the wisdom and experience of our elders. To cite other names will be tantamount to mentioning the rank and file of the organization.

It is therefore, my wish as your outgoing president, that the future leadership of our society will continue exploring the path in pursuit of a bigger tasks and greater accomplishments and for the past leadership, always to lend a guiding hand.

TEODORO P. LLAMANZARES, M.D.
President, PSO-HNS, Inc.

RIZAL MEDICAL CENTER
DEPARTMENT OF EENT

TITLE : Another Otolaryngologic Etiology of Diplopia
AUTHOR : Ma. Liza Villanueva-Sarenasm, MD

INTRODUCTION:

Diplopia secondary to ophthalmoplegia which is the limitation of movement of the extrocular muscle is a very prominent sign in two (2) otolaryngologic disease entities. We have diplopia secondary to direct involvement of the abducens nerve thereby resulting to lateral rectus paralysis as in Gradenigo syndrome and in nasopharyngeal carcinoma. This report will show that diplopia can result from another otolaryngologic pathology, which is very common in our daily ENT practice. The opthalmoplegia described here is transient but persistent infection may possibly cause otherwise.

Therefore this report is written so that another otolaryngologic etiology of diplopia may be reported and to make one aware of the possibility that this might happen to any patient.

CASE REPORT:

This is a case of twenty four (24) year old male, who presented with a chief complaint of double vision. History revealed that the condition started two (2) weeks prior to OPD consultation as nasal stuffiness, nasal discharge which is whitish to yellowish in appearance, low grade fever and a frontal headache. He was then diagnosed to have sinusitis and was prescribed antibiotics, decongestant and antipyretic. One week later, patient started to develop diplopia and thus he sought consultation at the Department of EENT. Past Medical history was unremarkable. Pertinent physical findings revealed limitation of the inferior, median lateral and superior gaze on the right eye, with diplopia on all directions of gaze. ENT findings on anterior rhinoscopy Showed congested and swollen turbinates on both sides, with whitish to yellowish discharge more on the right side. Posterior rhinoscopy revealed the presence of a postnasal drip which was mucopurulent in consistency. Other findings were the presence of maxillary tenderness on the right and dental caries on the first (1st), and second (2nd) upper molar, right. patient was diagnosed to have acute maxillary sinusitis, diplopia etiology (?).

An x-ray of the paranasal sinuses (Water's view) was requested which revealed haziness of the right maxillary sinus. Antral puncture and aspiration of the maxillary sinus was done and 1.5-2.0 cc of turbid aspirate was evacuated. Aspirate was then sent to the laboratory for no growth or isolate of any organism.

Patient was then advised to continue the presribed medications. Tooth extraction of the first (1st) and second (2nd) upper molars right was then scheduled, and an oral steroid was also prescribed.

One week after, the patient came back and improvement was noted. Diplopia or upward gaze was no longer median and lateral gazes. A repeat x-ray of the maxillary sinus was done and revealed decreased haziness of the right maxillary sinus. A combination of the previously prescribed medication was advised.

Two (2) weeks later, the patient came back and all the signs and symptoms were no longer present. A repeat x-ray showed resolution of the haziness of the maxillary sinus.

DISCUSSION:

Ophthalmoplegia which is the limitation of movement of the extrocular muscle can cause diplopia or double vision in layman's term. In our patient, there is limitation of the inferior, median and lateral gaze on the right eye resulting in diplopia.

Three (3) causes to be considered include mechanical, myogenic and neurogenic etiology. A

mechanical cause is considered, when some factors interfere with the free patient movement of muscle. A force duction test was done on this patient and the results was negative, hence this has been ruled out. A myogenic cause results when a disease entity directly affects gravis. Historical and clinical investigations done does not indicate the presence of this disease.

Neurogenic etiology is lastly considered. This could either be congenital or acquired. Congenital neurogenic cause is ruled out since the disease process started just two weeks prior to consultation. Under the acquired classification, there are four (4) possibilities (1) trauma, which the patient denies, (2) vascular and/or metabolic disorders. Laboratory work-ups for hypertension and diabetes were done and all results were negative, (3) aneurysm or space occupying lesions, in the presence of only an extraocular muscle paralysis and in the absence of other neurologic findings this cannot be considered as an etiologic factor. Hence, the first three (3) causes have been ruled out. The fourth (4th) cause is the one considered in our patient, inflammation. Any infection in the area which may spread can cause inflammation of the nerve itself.

Basing on the history of a two (2) week duration of nasal stufiness, whitish to yellowish nasal and postnasal discharge, headache and low grade fever; physical findings of discharge on anterior and posterior rhinoscopy, dental caries on the first (1st) and second (2nd) upper molars, right maxillary tenderness, the patient has been diagnosed to have Acute maxillary sinusitis, right. x-ray studies showed haziness of the maxillary sinus consistent with sinusitis.

Result of the culture and sensitivity study of the maxillary aspirate is negative. Pekka, Karma M.D. et al in an article entitled "Bacteria in maxillary sinusitis", noted that forty six (46) percent of sinus secretions didn't grow any bacteria. Similar/unpublished studies by one of the authors showed eighty (80) percent to grow no organisms.

Antibiotics taken prior to obtaining of the specimen and also the involvement of a festidious anaerobic organism could also play a role. In a study done by Frederick and Brandenique, it states that the mucosal culture described twenty-five (25) anaerobic bacterial strains in seventeen (17) sinuses (28%), but they never grew heavily. Possibility and/or probability of the involvement of a viral organism cannot also be ruled out. Nevertheless patient is still consistent with maxillary sinusitis.

Tooth extraction was done together with our medical management of the sinusitis consisting of antibiotics, mucolytics, decongestants, and steroids. The nasal discharge gradually disappered, haziness or x-ray resolved and diplopia improved. This would point to the maxillary sinusitis causing inflammation of the nerve supplying the extraocular muscle and resulting into ophthalmoplegia causing diplopia. According to W. Jarred Goodwin, Jr. in 1975, "orbital infections is a threat to both vision and life and is caused by paranasal infections in seventy five (75%) percent patients". This is commonly periorbital cellulitis resulting from ethmoidal sinusitis. In our patient the problem could have started from the dental caries affecting the maxillary sinus. On x-ray, no haziness was noted on the ethmoid sinus and clinical investigation was done and other possible cause of the inflammation into which ophthalmoplegia can be attributed were noted, hence everything points to a maxillary sinus problem.

Review of the different literatures revealed that there has been no known report of maxillary sinusitis causing ophthalmoplegia. This could may well be the first known report. Considering the comment of Goodwin, we began to think of the possible pathway for maxillary sinusitis to cause ophthalmoplegia Kelvin, et al in a related study of one hundred twenty (120) case of optic neuritis showed twenty six (26) cases to be secondary to sphenoethmoiditis and two (2) were associated with maxillary sinusitis.

In a textbook by Mackay and Bull, it was noted that the orbital floor, which is the roof of the maxillary sinus is incomplete at its central portion and is traversed by a grove known as the infraorbital fissure. This fissure does not only house the infraorbital nerve but also the inferior ophthalmic vein with the tributaries to the superior ophthalmic vein. These veins are included in the extensive system of valveless veins between the nose, paranasal sinuses, orbit and cavernous sinus which are considered as one of the preformed pathways for an infection to penetrate the adjacent orbit.

There is also a clear cut connection between the inferior orbital fissure and the superior orbital fissure which contains the nerve supply to the extraocular-

muscles. Again it is likely possible that the infection could have passed through the inferior orbital fissure affecting the superior orbital fissure resulting in the involvement of the nerve supply to the extraocular muscles.

Because of the high incidence of maxillary sinusitis, it is possible that this complication may actually happen again. This patient may land on the hands of the ophthalmologist who may be treating this problem. A previous case which unfortunately has been documented of, has prompted the authors to have a high index of suspicion regarding this unusual complication. A similar case may just be waiting at your consultation rooms or a referral from an ophthalmologist may be forthcoming. This can make us aware of such complication and not necessarily at a loss for its etiology.

This paper will show to you the diplopia secondary to ophthalmoplegia can develop in maxillary sinusitis patients.

CONCLUSIONS

Two other otolaryngologic causes of diplopia are common knowledge to most of us. Another cause, acute maxillary sinusitis is presented.

Maxillary sinusitis can cause spontaneous ophthalmoplegia by the spread of bacterial toxin through several probable preformed pathways.

a. orbital floor which is incomplete at its central portion and is traversed by a groove, the inferior orbital fissure.

b. clear cut connection between the inferior and superior orbital fissure which contains the nerve supply to the extraocular muscles.

c. through the inferior opthalmic vein which passes through the inferior orbital fissure.

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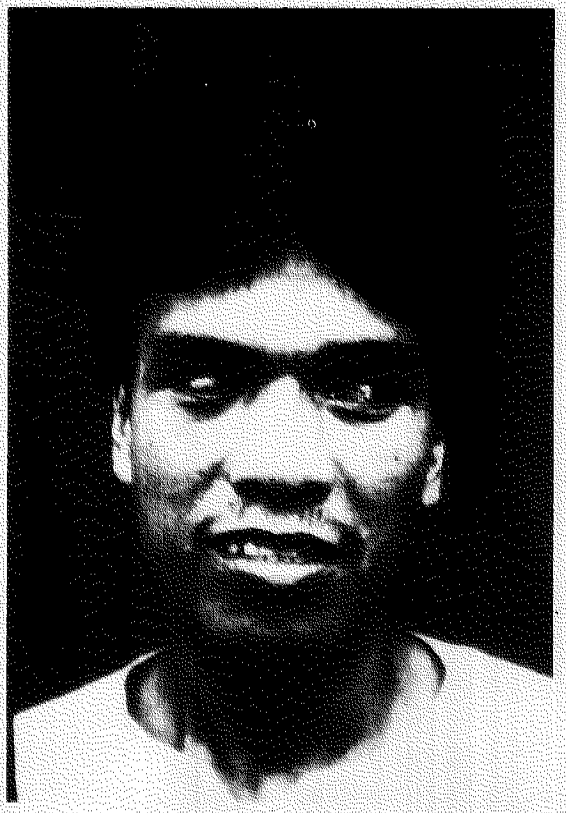
A

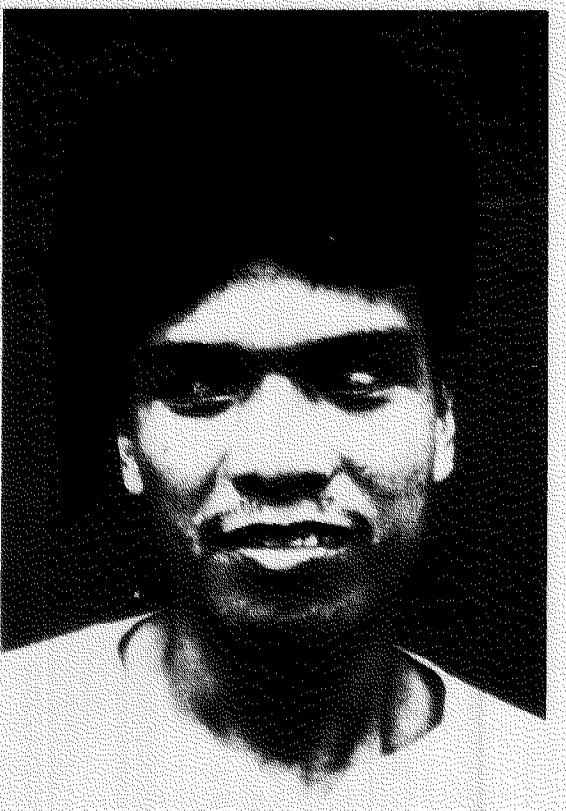
B

C

Figure 1 : Before treatment : Limitations on (a) Median (b) Lateral (c) Superior and Inferior Gaze



A



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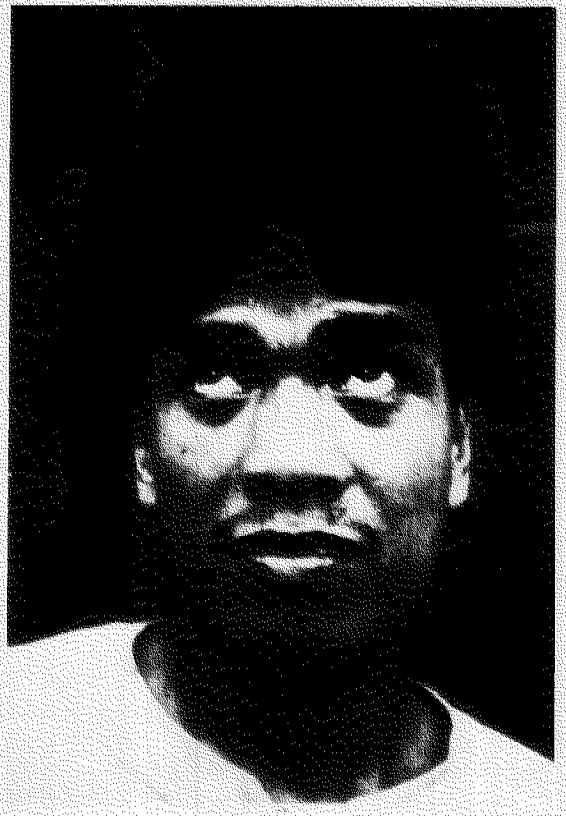

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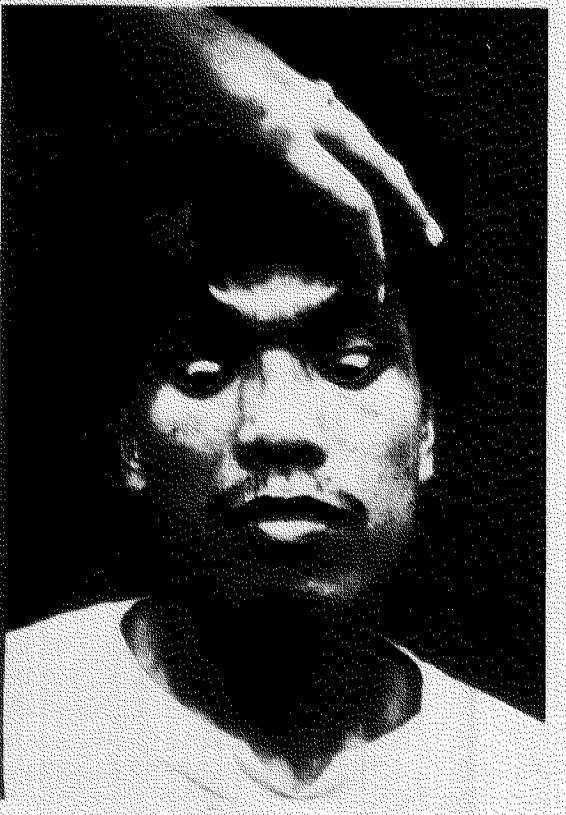

D

Figure 2 : After Treatment : Full (a) Median (b) Lateral (c) Superior and (d) Inferior Gaze

A

B

C

Figure 3 : Possible Pathway : (A) Started from a carious tooth then to the maxillary sinus and finally the orbit through (b) Inferior ophthalmic vein. A branch of the valveless veins of the face or (c) Inferior orbital fissure were the inferior ophthalmic vein and cn 3,4 and 6 nerve supply of extraocular muscle passes through.

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TITLE : Chondrosarcoma of the maxilla (A case report)

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Elmo R. Lago, Jr., MD; Alejandro P. Opulencia, MD; Teodoro P. Llamanzares, MD

INTRODUCTION:

Chondrosarcoma is a neoplasm known for the wide variability of its morphology and clinical course ranging from the locally aggressive type with no metastatic potential to the high grade malignancies with marked propensity to metastasize. Approximately, 10% of primary malignant tumors of bone are chondrosarcomas, comprising the second most common form of bone cancer. Major sites of lesion usually occur in long bones of the upper and lower extremities as well as the pelvis.

Primary maxillary chondrosarcoma has been reported in foreign literature. In 1950, Miles in a review of literature accepted only six cases of maxillary chondrosarcoma. Batsakis and Dito (1961), reported ten cases of head and neck chondrosarcoma at the Mayo Clinic from 1907 to March 1957, only two of these originated from the maxilla. Likewise, 1961 at the Walter Reed General Hospital three treated cases were seen, thus bringing a total of 15 cases as of 1961. Paddeson and Hanks (1971), after reviewing the English literature disclosed only 16 reported cases. In 1972, Alen et al. reported 18 cases of head and neck chondrosarcoma, 10 of which were located in the maxilla. Vener et al. (1984), had three documented cases of maxillary chondrosarcoma at the UCLA Health Services from 1960 to 1984. After reviewing some of the local journals, there has not been a single report of chondrosarcoma of the maxilla and probably this is the first reported case.

The objectives of the paper are :

1. to review some of the world literature on chondrosarcoma with regards to possible theories of its etiology, histopathologic grading, management and prognosis.

2. to present the first reported case of chondrosarcoma managed thru a midfacial degloving procedure at the UERMMMC.

CASE REPORT:

D.M., 26 years old, female, single from Daraga, Albay was admitted for the first time at the UERMMMC Department of Otolaryngology, Head and Neck Surgery because of a left maxillary mass of 2 1/2 years duration.

One year PTA, she consulted a dentist in Albay who did tooth extraction and a tissue biopsy of the left gingival area. Histopath showed chondrosarcoma of the maxilla. During this time she started complaining of left sided headaches and pricking sensation of the left side of the face for which she was referred to the UERMMMC Department of Otolaryngology, Head and Neck Surgery for further work-up and management.

Pertinent physical examination showed a firm, non-tender, non-movable left maxillary mass approximately 4x3.5 cm. On anterior rhinoscopy the lateral nasal wall was medially. A bulge at the left palatal area was noted. The rest of the ENT examination was unremarkable.

Radiologic examination of the paranasal sinuses showed a soft tissue mass density on the left maxillary sinus. Computerized tomography of the maxilla showed a large nonhomogenous mass with areas of relative hypodensity and calcification in the left maxillary

area measuring 4.8 x 3.7 cm extending to the left nasal cavity, maxilla and anterior medial wall of the maxillary antrum deviating the posterior aspect of the nasal septum to the right. Biopsy of the mass revealed chondrosarcoma.

After confirmation of diagnosis, patient underwent a left antero-medial maxillectomy utilizing the midfacial degloving procedure. The tumor consisted of encapsulated,lobulated, firm, grayish-white tissues, measuring 4 x 3 cm and 2 x 1 cm.

The post-operative course was unevenful. Final histopathology report shows a malignant tumor process composed of numerous cartilage cells supported by bluish myxoid stroma. The individual cells vary in sized and contained pleomorphic, large, occasionaly bilobed and bissare nuclei, mitotic figures and necrosis are infrequent. Section taken from tissue around the whole specimen revealed negative for tumor cell.

DISCUSSION

Chondrosarcoma has only been recognized as a distinct neoplasm since 1939 when Ewing separated the cartilaginous form the osteogenic group of bone neoplasm. To this day, the nomenclature of malignant neoplasm of osseous connective tissue is confused by difference in opinion concerning the proper basis for classification. Lichenstein and Jaffe (1943), justified this revised classification through ther anatomical and histological studies. They further pointed out the clinical and prognostic importance of chondrosarcomas as a distinct pathological and clinical group. it has been stated that maxillary chondrosarcomas are very rare entities and their etiology and pathogenesis are not fully understood although several theories have been proposed. Morous Jones (1972) gave several possible etiologies. (1) they may arise from tissue known to be formed of cartilage. (2) they may arise in bones which develops from a cartilaginous plate. (3) they mary arise in tissue not normally harboring cartilage. These tissues normally have their cell origin coming from primitive mesenchymal cells which are the forerunner of chondroblasts and osteoblasts. This multidirectional differentiation of mesenchymal cells is thought by some to give rise to these tumors. (4) Cartilagenous tumors can also arise from the cartilage cap of an exostosis or may arise as a manifestation of multiple endochondromatosis as in cases of Maffucci's syndrome. 23 to 50% of enchondromas may undergo malignant degeneration to chondrosarcomas. Likewise, Ollier's disease, a rare congenital disorder charaterized by enchondromatosis has a potential for malignant degeneration. (5) head trauma, ischemias, pressure and shearing forces also have been implicated as origins of chondrosarcomas but their exact mechanism to this date is unknown.

This tumor may be confused with some chondrosarcomatous and osseous tumors like chordomas, chordoid chordomas and even osteogenic sarcoma. Seidman (1989), provided a list of the histologic differentiation of benign and well-defferentiated malignant cartilaginous neoplasm (Table 1).

Chondrosarcomas show histologic changes of varying degrees and grades. Evans (1977), evaluated the following histologic features: character of intercellular background, nuclear size, cellularity, mitotic rate and frequency of lacunae containing multiple nuclei. Seidman (1989), devised a criteria patterned after Evans (1977) in the histological differentiation of the separate grades of chondrosarcomas (Table 11). Low grade tumors have well formed chondroid matrices and lacunar spaces. They may show subtle changes such as increased cellularity, nuclear enlargement, pleomorphism and hyperchromatism. Mitoses are rare or absent. There may be cell necrosis, calcification and metaplastic bone formation. Higher grades are easier to diagnose because of their loss of lacunar spaces, naked nuclei, mitoses and myxoid changes. The high grade undifferentiated tumors are identified as cartilaginous by the presence of chondroid matrices.

MANAGEMENT AND PROGNOSIS

Review of literature confirms the opinion of most authors that surgical resection is the treatment of choice for chondrosarcomas. Batsakis and Dito (1961), stated that the excision must be radical including a large margin of normal bone or tissue on each side of the tumor bed. Additionally surgery and radiation therapy were employed for recurrent tumors. Harwood et al. (1980), in their experience suggested the following indications for the use of radiotherapy in this disease: (1) As primary treatment when surgical resection is not possible or grossly mutilating. (2) Post-operatively in all cases in which gross residual tumor is left behind or in which there is doubt as to the adequacy

of surgical tumor is left behind or in which there in doubt as to the following local extension.

Arlen et al. (1970), suggested that radiotherapy at 4000 rads to 6000 rads must be given in 4 to 5 weeks interval or its equivalent. Althought the tumor have been considered to be radioresistant, recent studies tend to dispute this impression. Harwood et al. (1980), observed a 50% complete remission rate in Grade 1 tumors with a disease free status in 25% of these patients for 15 years or more with adjuvant radiotherapy.

Chemotherapy has also been used as part of the treatment for chondrosarcomas. Finn et al. (1984), observed good response of patients who received pre-operative treatment with agents like cis-platinum, cyclophosphamide, vincristinem, doxorubicin and decarbizine. Partial response meaning a decrease of 50% in tumor size were observe in these patients. He also recommended the use of chemotherapy for grades 11 and 111 mesenchymal and dedifferentiated chondrosarcomas.

Alen et al. (1970), also suggested that these tumors are stimulated by growth hormone and as such may benefit by suppression of the pituitary activity by hypophysectomy. There were also indications that progrestational agents were employed to suppress these tumors.

As stated by Vener et al. (1984), the prognosis of these tumors of the head and neck is related to the location of the primary lesion, presence nor absence of pain, adequacy of initial surgical excision and finally on the histologic grade of the neoplasm. Several authors give a five-year survival of chondrosarcoma of the face and jaw at 40 to 60%. However, these lesions

TABLE 1: Differentiation of Benign and Well-differentiated Cartilaginous Tumors (Sledman, 1989).

FEATURE	Chondrosarcoma	Chrodoma	Ost Sarc	Chondroid Chordoma
Cell of origin	Chondroblast	Notochord	Osteoblast	Possibly notochord and Chondroblast
Location in the head and neck	Facial bones and mandible	Midline (but may extend)	Possibly anywhere but primarily Mandible	temporal bone and midline
Age of patient	3rd-5th decade decade	3rd-4th	3rd decade	3rd-5th decade
Radiographic findings	Calcification bony destruction usually avascular, may enhance w/CT CT enhancement w/ CT	Calcification, bony destruction hyperostotic, avascular, may enhance w/ minimal	Depends on state of mineralization usually avascular;	Calcification; bony destruction
Generally accepted treatment	excision w/ or w/o radiation	excision + radiation	radical resection (+) or (-) radiation; possible chemo. Tx	excision and therapy
Primary site of recurrence	local	local	local with metastasis	local
Distant metastasis	rare	rare	usually w/ in 1st & 2nd yrs. (lung & brain)	rare

tend to recur locally, even after prolonged periods of time. Vener et al. (1984), put the recurrence rate at 85% for chondrosarcomas of the head and neck as oppossed to 15% elsewhere in the body. Metastasis occur in 18% of patients, mainly through the hematogenous route especially to the lungs and brain.

SUMMARY

This is the first locally documented case of chondrosarcoma of the maxilla, managed via a midfacial degloving procedure. Its possible etiology, histopathologic grading, treatment and prognosis are discussed. Presently, radical surgery appears to be the most widely accepted modality of treatment. Radiotherapy and chemotherapy have been accepted as forms of adjunctive treatment.

TABLE II: Criteria for the Differentiation of the Grades of Chondrosarcoma (Siedman, 1989).

GRADE	CRITERIA
1	Usually uniform and not densely celullar; chondroid or myxoid-chondroid matrix well developed; rare to absent mitosis; small, luniform nuclei; often two or more nuclei in a single lacuna
11	Less than two mitosis per 10 high power fields; dense clusters of clusters of nuclei, usually at the periphery; nuclei larger and less uniform than Grade 1; matrix less lchondroid than Grade 1.
111	Two or more mitoses per 10 high power fields; prominent, dense clusters of nuclei, usually at the periphery; nuclei largest of the grades; spindle cell forms and poorly developed matrix.

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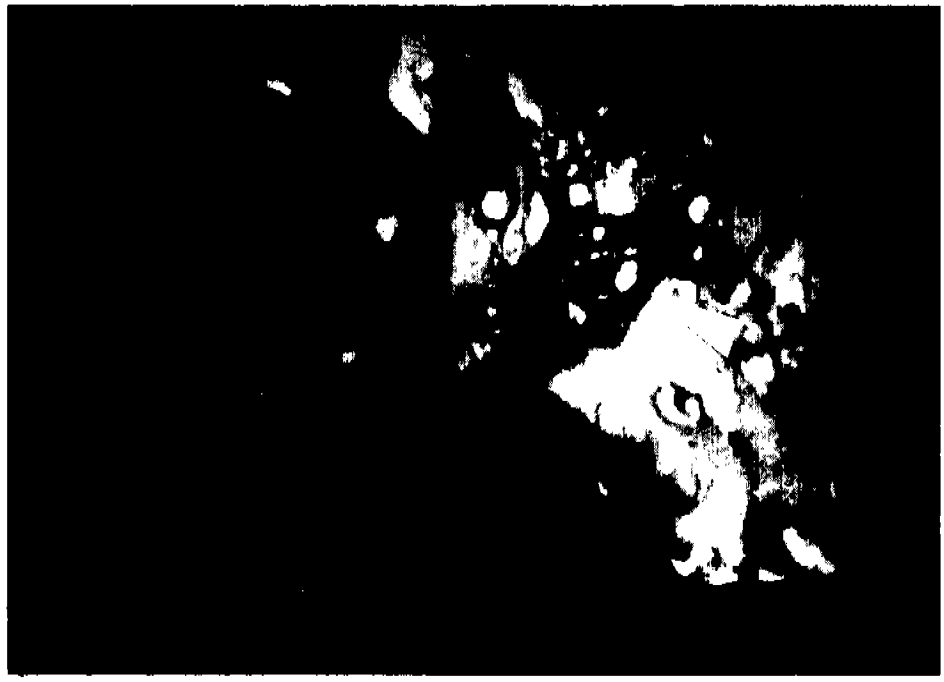

Figure 1

Slide shows numerous cartilage cells supported by bluish myxoid stroma, cell size vary containing pleomorphic, large bilobed & bizarre nuclei (arrow)

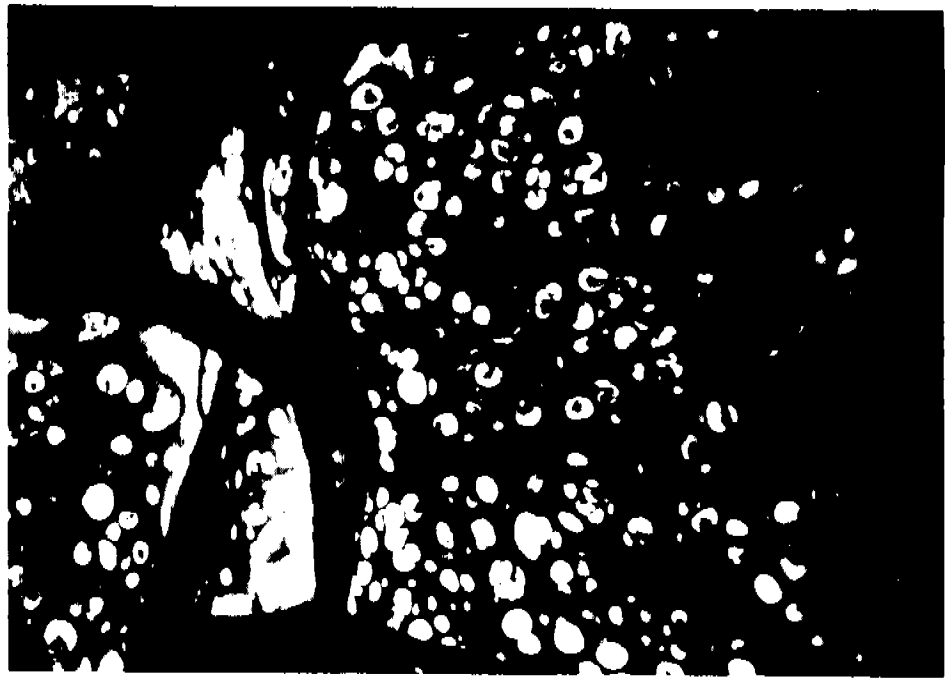

Figure 2

High power view

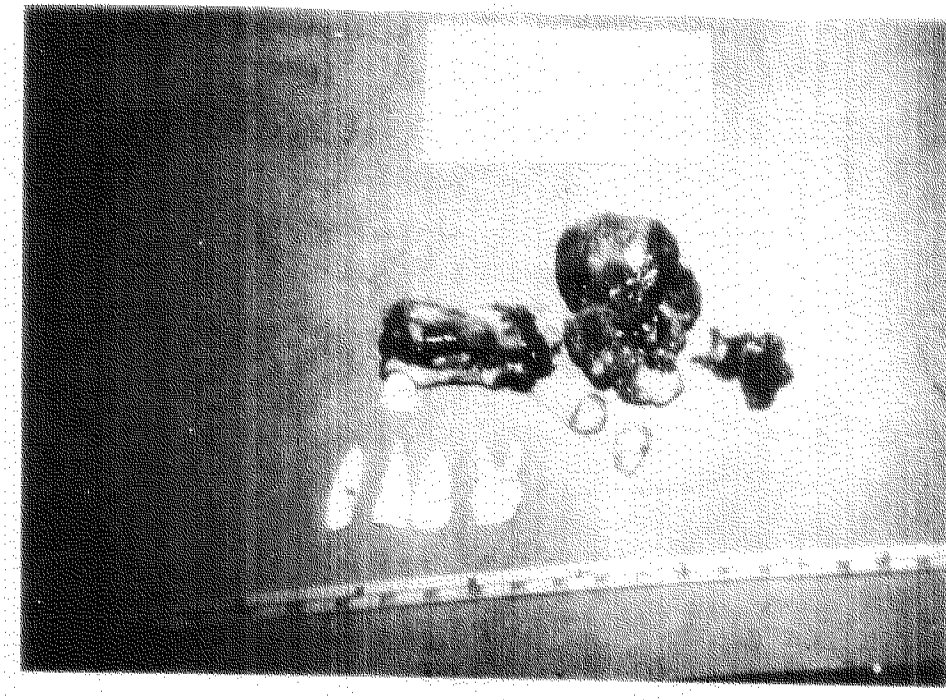

Figure 3

Tumor taken consisted of encapsulated, lobulated, firm, grayish white tissue measuring 4 x 3 cm and 2 x 1 cm

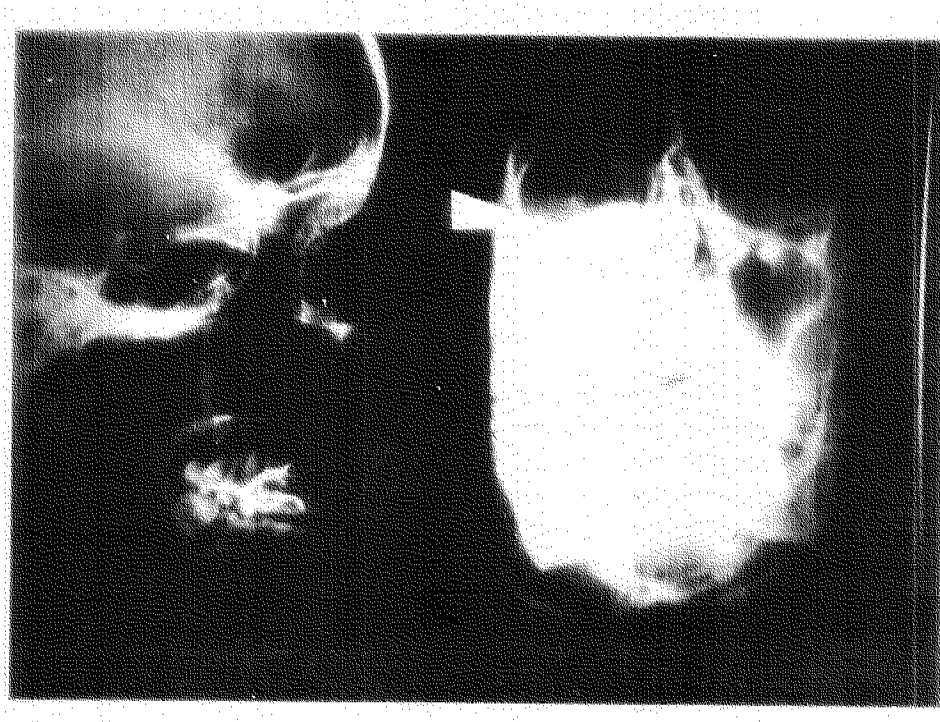

Figure 4

Paranasal sinus x-ray showed a soft tissue mass density (arrow) on the right maxillary sinus

UNIVERSITY OF THE PHILIPPINES
PHILIPPINE GENERAL HOSPITAL
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TITLE : Brown Tumor of the Maxilla in Primary Hyperparathyroidism: A Case Report

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ABSTRACT

Primary hyperparathyroidism presenting with advanced bone disease is an important differential diagnosis of tumors affecting the craniofacial skeleton. A case of primary hyperparathyroidism, initially presenting with a brown tumor of the maxilla is described. There was a delay in the diagnosis despite two operations primarily due to nonspecificity of clinical, radiologic, and histopathologic features. Differentiation from other giant cell lesions of maxilla is necessary. Diagnosis of brown tumor of primary hyperparathyrodism relies on plasma calcium estimation and is confirmed by serum parathyroid hormone assay.

INTRODUCTION

Tumors of the facial bones have always been a challenge to both the Otolaryngologist and the pathologist. They may present with the same clinical manifestations and almost similar radiologic and pathologic features, and yet the approach to management may differ considerably. Bone tumors may be primary or metastatic or even manifestations of a systemic illness.

As Mederjahn (1979) has aptly stated, "A lack of knowledge of etiology, extraordinary rarity, polymorphism in their nature and lack of agreement on a commonly accepted nomenclature and classification put nearly insurmountable difficulties in the way of every experiment to gather and analyze the clinical behavior of the different form of these tumors."

To put this condition in proper perspective, a case will be presented with the following objectives in mind.

1. to present a rare and interesting case of a maxillary mass which is the first reported case in our institution.

2. to discuss the clinical signs and symptoms and diagnostic modalities leading to the diagnosis

3. to discuss the differential diagnosis and the difficulties of initial assessment and management

4. to emphasize the importance of histopathology concomitant with the need for close communication between clinician and pathologist.

CASE REPORT

A.M., 41 year old, housewife from San Pedro, Laguna was admitted for the third time on April 25, 1989 for recurrent left maxillary mass.

History started 1 year prior to admission, when she noted a wound on her left gingiva attributed to wearing cracked dentures for two weeks. Although the wound healed spontaneously, she noted a progressive swelling over her left maxillary area, with no other associated symptoms. On consultation with an Otolaryngologist, a Waters view was requested which revealed an expansile soft tissue opacity on the left maxillary area. She was eventually advised excision biopsy.

On her 1st admission (July, 1989), findings showed 3 cm. fixed, hard and nontender mass on the left maxillary area. Excision biopsy via Caldwell-Luc approach was done and histopathologic diagnosis was Giant Cell Granuloma. She was discharged asymptomatic only to be readmitted 2 months later because of a recurrent progressive growth over the same site.

On her second admission (Sept., 1989), the patient presented a slightly firm, non tender 7 x 4 cm. left maxillary mass which was encroaching on the left orbit causing diplopia on downward gaze. The left gingivobuccal gutter was obliterated anteriorly. No paresthesia were noted. Routine laboratory examinations (urinalysis, CBC, BUN\Creatinine, serum Na, K, CI, Chest PA) for pre-operative clearance were unremarkable. Waters and Basal views revealed an expansile soft tissue opacity in the left maxillary area extending upward to the inferior aspect of the orbit laterally, mucoperiosteal thickening was noted in the right maxillary sinus, the inferior rim of the orbit and anterior aspect of the left zygomatic bone were not delineated. She underwent a second operation (Weber-Ferguson incision with lip splitting) with the following findings: the mass eroded the anterior and lateral maxillary walls, filled the maxillary antrum and partially eroded the orbital floor. Frozen section of the mass was read as Giant Cell Tumor. The bed was then extensively cleaned of tumor. The patients post-operative course was uneventful. She was discharged after 9 days. The final histopathologic report was Giant Cell Tumor.

Two months later, the patient again noted swelling of the left maxillary area lateral to the previous site. By this time, she was lost to follow-up only to come back with markedly enlarged maxillary mass. Differential diagnosis for Giant Cell Tumor were considered. Subsequent work- ups revealed serum calcium to be abnormally high at 3.27 mmol\l (normal value—=2.35-2.75 mmol\l). She was then referred to the Endocrine section for parathyroid hormone level which likewise turned out to be markedly elevated at 47.69 mg\ml (normal value=0.4-1.4 mg\ml). She was eventually admitted for the third time.

On her present admission (April, 1989), physical examination showed a 7 x 8 cm. firm, slightly tender, ill-defined mass extending from left molar to the left zygomatic area with persistence of diplopia on downward gaze. The rest of the examination was essentially normal. Diagnostic studies showed the following: (1) serial serum calcium determination was persistently elevated (3.27, 3.06, 3.12); (2) serum phosphate was low at 0.761 mmol\l (normal value=0.8-1.6 mmol\l); (3) skeletal survey revealed a generalized skeletal demineralization, granular localization (salt and pepper appearance) of the skull and nephroclacinosis with the renal calculus (see Figure 1); (4) ultrasonography of the neck revealed a 1.7 x 1.2 x 0.9 cm. hypoechoic mass in the inferior portion of the right thyroid probably an enlarged parathyroid, thyroid gland essentially normal. All the other laboratory examinations (FBS, BUN\Crea, Na, K, CI, urine calcium, creatine clearance) were normal.

The patient underwent neck exploration (low-collar incision) which revealed a 2 x 1.5 x 1 cm. firm solid mass under the right inferior thyroid vessels. The mass was removed and frozen section was read as Parathyroid Adenoma. The right superior parathyroid and the two left parathyroid glands were explored and identified and were found to be normal in size and appearance. The maxillary mass was left untouched.

The patient tolerated the procedure very well. The post operative serum calcium level was low at 1.97 mmol\l. She manifested symptoms of hypocalcemia which was readily controlled with calcium supplements. The final histopathology report was read as: Parathyroid tissue, in the absence of capsule in the section submitted, distinction between Parathyroid Adenoma and Hyperplasia must be clinically correlated. (See Figure 2). Review of slides of 2 previous operations was read as consistent with Brown Tumor of Hyperparathyroidism. (See Figure 3).

The patient was eventually discharged and subsequent follow-ups revealed a progressive decrease in the size of the maxillary mass with resolution of diplopia. (See Figure 4).

DISCUSSION

Hyperparathyroidism is a disorder of the paratyroid glands characterized by the abnormal secretion of parathyroid hormone leading to hypercalcema. The incidence of primary hyperparathyroidism has been reported between 25 and 50 per 100,000 population per year. The highest incidence occurs in women in the fourth to sixth decade of life approaching 200 cases per 100,000 population per year.

The majority of patients with hyperparathyroidism are asymptomatic and the disease is often detected incidentally during laboratory radiographic examination for unrelated conditions. Symptoms that prompt the patient to seek medical care reflect the hypercalcemia and hypophosphatemia caused by excess parathyroid hormone. Symptoms may be divided into the skeletal, urinary , and nonspecific symptoms like nausea, vomiting, hematemeses, etc. In the retrospective study by Breslau, et al; nonspecific symptoms account for 50% to 70% of cases, urologic symptoms for 20% to 30% and only 5% for skeletal symptoms. Likewise, Saaka et al; in their review of 316 patients with primary hyperparathyroidism, 52% manifested urologic symptoms, 13% for gastrointestinal, 14% to skeletal and 3% for pancreatitis.

As stated above, skeletal changes occur in 5% to 14% of the total reported cases. Of these skeletal changes seen in Primary Hyperparathyroidism, only 4.5% occurs on the facial bones mainly in the mandible and rarely in the maxilla. The skeletal changes vary from generalized demineralization of bone in early cases to resorption of bone marrow and replacement by fibrous tissue with cystic changes, the latter being termed osteitis fibrosa cystica. In rare instances, local accumulation of fibrous and giant cells appears as a single or multiple well defined lesion of bone as a result of hyperparathyroidism or the so called Brown Tumor. Brown Tumor very rarely presents in the maxilla as the initial symptom of hyperparathyroidism.

Brown Tumor is a focal bony lesion of hyperparathyroidism. It results from the direct effect of parathyroid hormone on bone, causing the conversion of potentially osteogenic cells from osteoblasts to osteoclasts. Dual process of osteoblastic and osteoclastic activity take place with the latter exceeding the formation of new osseous tissue. Osteoid is elaborated with a vascular, fibrosblastic tissue with abortive attempts at bony trabecular formation. Cyst may develop as a result of bleeding and tissue degeneration. Giant Cell masses or brown tumors maybe seen as focal bony lesions.

Brown tumor represents hyperplastic proliferations rather than true neoplasm. Extravasation of blood is a histologic feature that gives the mass the brown color observed surgically and histologically, hence the name "brown tumor". This term is unsatisfactory to many authorities because it is nonspecific and places more emphasis on the color imparted by the degeneration of extravasated blood.

Brown tumor is often missed on initial diagnosis of patient. It is imperative that physicians should be aware that such condition exists since such disease is difficult to diagnose without a high index of suspicion. Aside from its rarity, the histological and radiological features of Brown Tumor are somewhat similar to other diseases particulary with Giant Cell Tumor and reparative granuloma. To quote Batsakis, "the presence of multinucleated giant cells in fibroosseus lesion of the jaws has led to considerable nosological confusion, and in fact, too much emphasis has been placed on this histopathologic finding. The giant cell themselves are of little diagnostic importance,and they may be found in a variety of bone lesions affecting the jaws. Most often, they represent osteoclasts and are secondary to the basic underlying process affecting the jaws. Because there is considerable histological and radiological overlap in appearance of the fibroosseous lesions of the jaw, with or without giant cells, uncritical interpretation of such lesions must be avoided."

Misdiagnosis, both clinically and histopathologically was the usual cause of delay in the proper and early management. Therefore, this would entail a close communication between clinician and pathologist for the reason stated above.

In some instances, brown tumor may actually be the 9,10,11 earliest clinical manifestation of hyperparathyrodism. The importance of biochemical study (serum calcium and parathyroid hormone level) of the patient is underlined by the difficulty of differentiating between giant cell tumor and reparative granuloma and the brown tumor of hyperparathyroidism. The diagnosis of hyperparathyroidism should always be suspected or at least considered if patient belongs to older age bracket presenting with bone lesions. Giant cell tumor and reparative granuloma are usually seen in 1,5,6,7 a much younger age group.

Treatment of brown tumor is directed towards the management of hyperparathyroidism.

The first step in the diagnosis of hyperparathyroidism is a careful history of uncovering typical manifestation such as presence of band keratopathy, proximal muscle weakness in lower extremities, peculiar fine fascirculation of tongue and bone ten-

derness. The classical laboratory findings in hyperparathyroidism are hypercalcemia and hypophosphatemia.. An elevated serum calcium level in the absence of malignancy, sarcoidosis, hypervitaminosis D, hyperthyroidism, thiazides, milk-alkali syndrome or prolonged immobilization is still the best test for this disease. Owing to the phophaturic effect of parathyroid hormone, hypophosphatemia is commonly observed in primary hyperparathyroidism. In the absence of renal impairment, hypophosphatemia is demonstrable in approximately 70% of patients. The definitive diagnosis of primary hyperparathyroidism rests on the simultaneous demonstration of hypercalcemia together with an index of abnormal or inappropriate parathyroid function - an increase serum parathyroid hormone level.

The radiologic findings of primary hyperparathyroidism are as diverse as the symptoms. Subperioteal resorption is virtually pathognomic of the disease. Other radiologic findings are "salt and pepper" appearance of calvarium, bone 12.13 cyst, calcinosis, and "rugger jersey" sclerosis of spine.

The most common pathology in patient with primary hyperparathyroidism is a single parathyroid adenoma found in 80%, parathyroid hyperplasia (chief and clear cells) accounted for 9%and parathyroid carcinoma accounted for 3% of patients.

Preoperative localization is important in the surgical 14,15 management of primary hyperparathyroidism. Parathyroid glands abnormalities are rarely palpable. Many procedures have been devised in the quest for a sensitive means of localization. Davidson et al, in their review of parathyroid imaging, reveals that high frequency ultrasonography has a sensitivity of 69-88% for most parathyroid adenoma of greater than 5 mm. In the same study, thallium-pertechnetate radionuclide substraction scan has a diagnostic accuracy between 50-95%, digital stubstraction angiography has a sensitivity of 60-70% while computed tomography has 50 to 70% sensitivity. In this study, it was recommended that ultrasound be the first line of imaging modality because of relatively acceptable sensitivity index and more simplified and inexpensive method of imaging.

Surgery of the parathyroid is clearly indicated in patients with one or more of the metabolic complications of hyperparathyroidism such as bone disease, renal calculi, ulcers and pancreatitis. Patients who are asymptomatic and have no metabolic complication pose an entirely different poblem. No hard and fast rule exists concerning whether asymptomatic patients should undergo surgery, although current trend seems to favor early surgical intervention. In approximately 25% of asymptomatic patients, the disease will progress and they will develop some form of metabolic complications within 5 years. The extent of surgical management of hyperparathyroidism must be based on pathological entities of the disease. If the diagnosis of an adenoma is irreputable, excision of the diseased gland is all that is required. If primary hyperplasia is confirmed by the presence of more than 2 diseased glands, a resection of the three and part of the fourth gland is mandatory. The management of a parathyroid carcinoma requires en bloc resection including excision of a wide margin of normal tissue. Routine radical neck dissection is not recommended since spread is by local extension sparing the cervical lymph nodes until a later date.

As regards to Brown Tumor, many cases have been reported to undergo spantaneous regression following excision of the 3.7 disease parathyroid. In a review of literature by Parrish, 3 et al; many surgeons still opted an excision of brown tumor primarily for immediate debulking of the mass. Bohlman et al, have cited faster resolution of brown tumor with adjuvant 2 corticosteroid therapy.

The prognosis of primary hyperparathyroidism is generally very good. Formation of renal calculus and some of the late skeletal changes caused by hyperparathyroidism would require a surgical management. However, most of the skeletal changes and other nonspecific complications would revert back to normal once the diseased parathyroid is removed.

SUMMARY

This is the first reported case in our institution of primary hyperparathyroidism masquerading as maxillary mass-Brown Tumor. The diagnosis of brown tumor was delayed despite 2 operations primarily due to nonspecificity of clinical, radiologic and histopathologic manifestations and possibly due to unawareness on the part of the clinician and pathologist. Only detection and medical evaluation of hypercalcemia, demonstrating elevation of both serum calcium and parathyroid hormone prompted search for parathyroid

mass via ultrasonography. Neck exploration confirmed a solitary right inferior parathyroid adenoma. The maxillary mass or brown tumor spontaneously regressed despite the absence of any debulking procedure after the parathyroidectomy.

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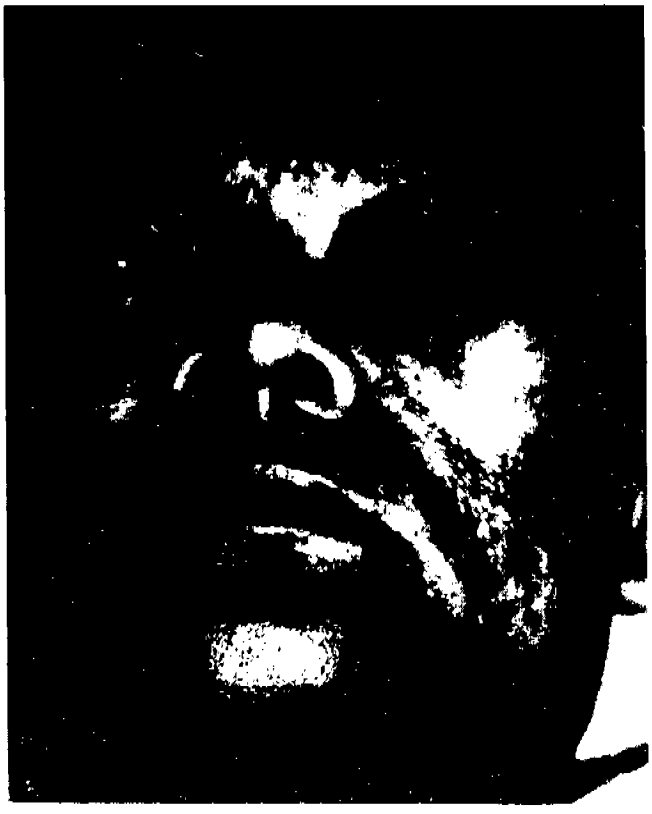
Figure 5 : Pre and Post-parathyroidectomy appearance of the patient



1 week prior to parathyroidectomy

1 month post-parathyroidectomy

1 year post-parathyroidectomy

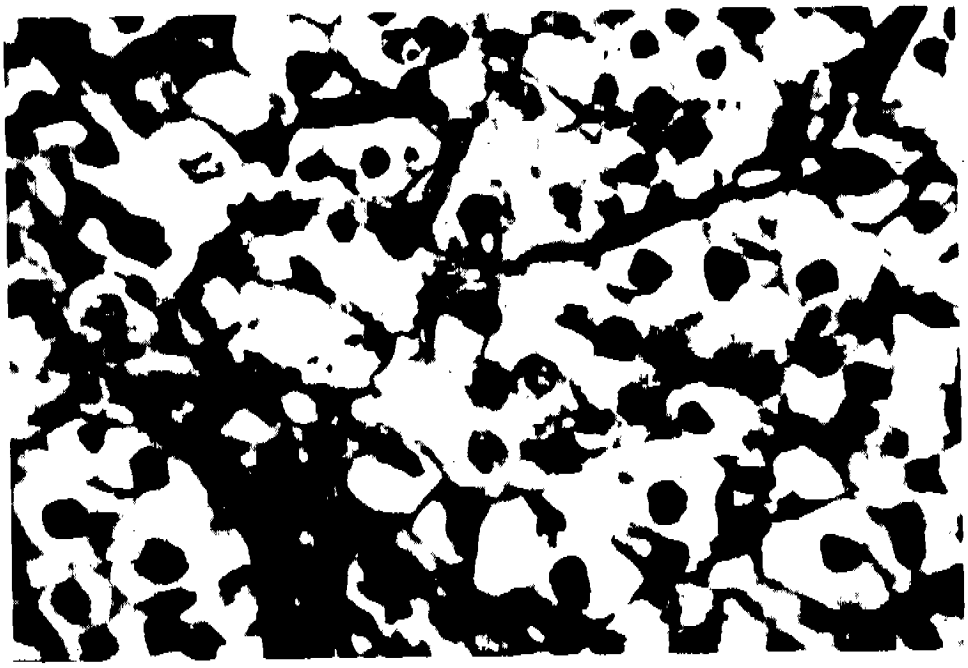
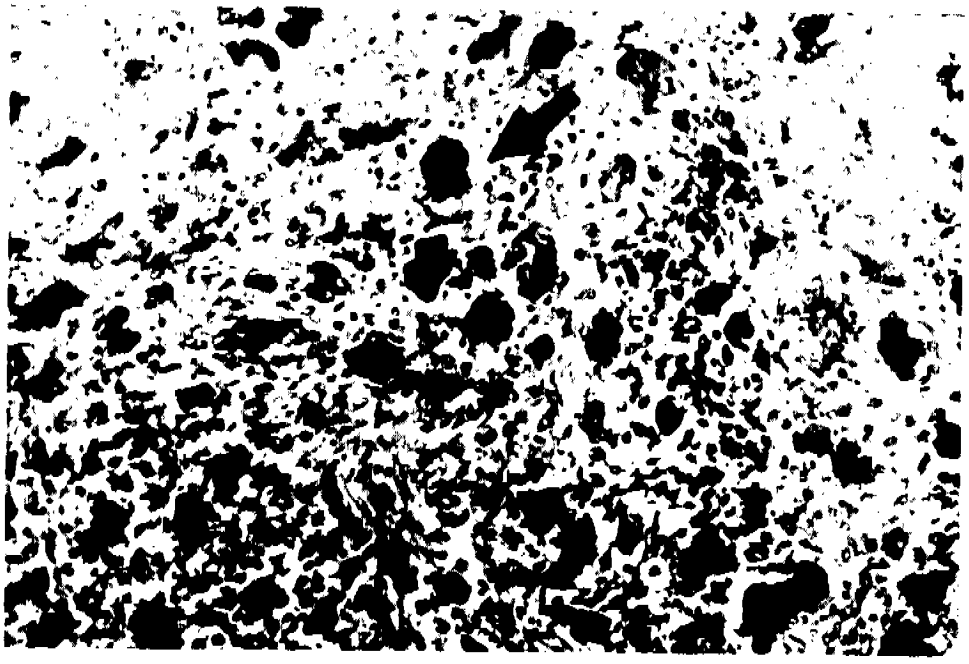
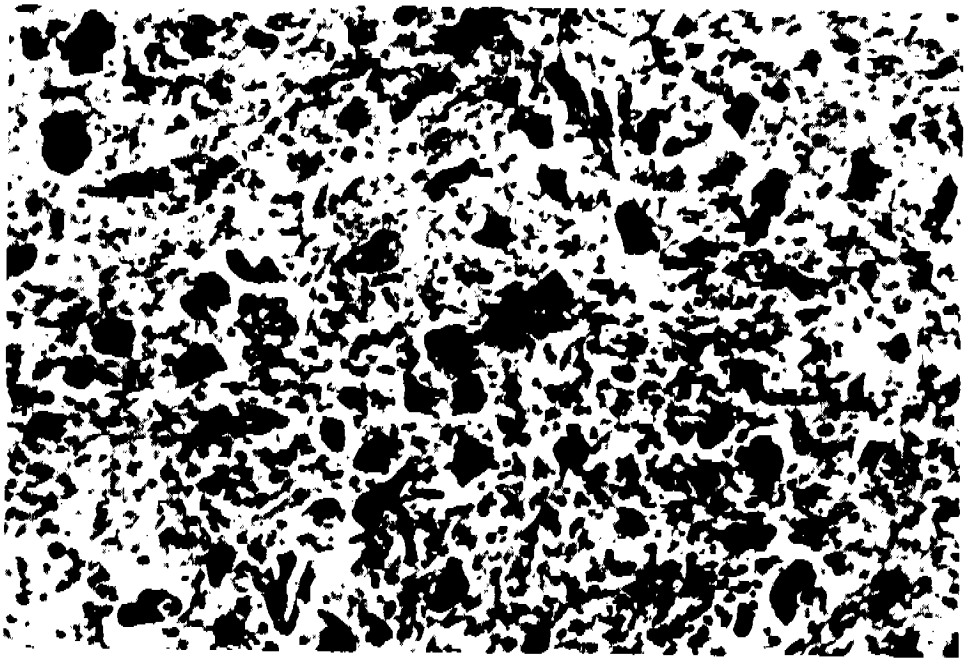


Figure 2 : Parathyroid Adenoma vs. Hyperplasia

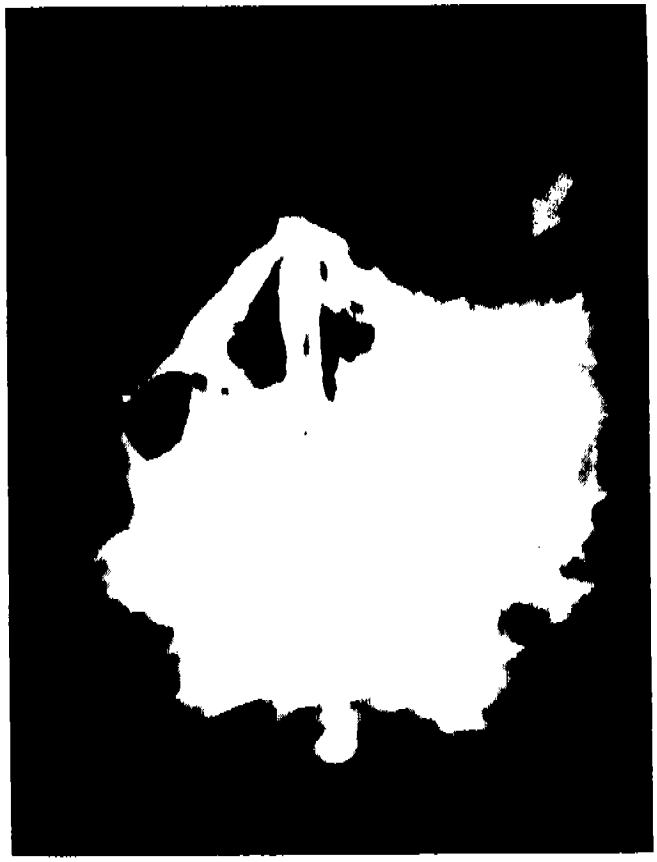


Histopath on the first operation



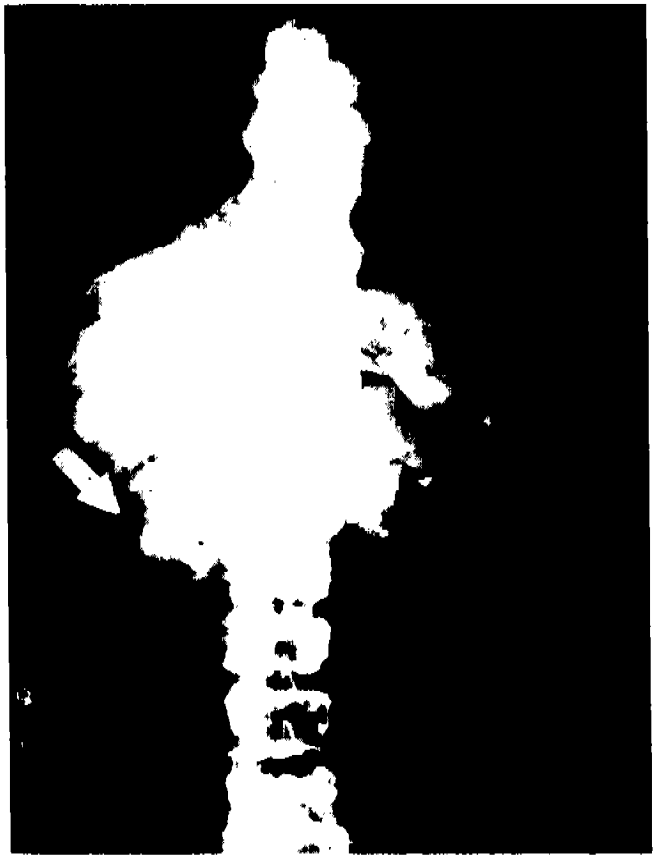
Histopath on the second operation

Figure 3 : Brown tumor as seen in the patient. Note of the giant cells predominantly occupying the stroma.



Expansile Mass on Left Maxilla

"salt & pepper" appearance of Calvarium



Nephrocalcinosis

Figure 1 : Radiographic Findings in Primary Hyperparathyrodism as seen in the patient

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TITLE : A Massive Pyogenic granuloma in the Gingiva*

AUTHORS : Armando M. Chiong, Jr., MD; Charlotte M. Chiong, MD;
Arthur Y. Dy MD; Pio R. Pajarillo, MD

ABSTRACT

A large exophytic mass was seen in the oral cavity of a 22 year old male. Repeated biopsies of the mass showed chronic inflammation with granulation tissue. An excisional biopsy confirmed the presence of pyogenic granuloma. This lesion is unusual as it attained a very large size causing considerable facial deformity. Intraoperatively, the lesion was noted to be highly vascular. this case may prove to be of great interest to otolaryngologists who often deal with oral lesions, as it demonstrates an extreme and unusual presentation of a definitely benign lesion.

INTRODUCTION

Pyogenic granulomas in the oral cavity are relatively common lesions encountered by otolaryngologists. They are well circumscribed, soft tissue tumors of inflammatory rather than neoplastic nature.[1] While such lesions usually do not pose diagnostic problems, this case report illustrates an extreme and unusual presentation of pyogenic granuloma where repeated biopsies had to be done in order to confirm the diagnosis.

REPORT OF A CASE

A 22 year old Filipino male consulted the outpatient clinic of the Philippine General Hospital on June 17, 1986 for a large progressively enlarging mass in the oral cavity of six years duration, described initially as 2 x 2 cm in size, firm, reddish and non-tender. Eventually, there was note of frequent bleeding on minimal trauma as well as progressive ulceration with non-foul mucopurulent discharge. On physical examination, there was a 10 x 5 x 4 cm. mass in the right upper gingiva protuding out of the oral cavity (Figure.1). There was displacement of the molars medially and the incisors anteriorly and outward. A bulge on the right nasal floor and the right cheek was noted although the overlying skin was normal. Submental and submandibular nodes measuring 0.5 x 0.5 cm. were movable and non-tender on palpation. There was no history of smoking, betel nut chewing, chronic beverage intake nor was there a history of trauma or toothache preceeding the appearance of the lesion.

A Water's x-ray revealed a soft tissue density over the right maxillary area with no distinct evidence of bone resorption. On suspicion of malignancy, biopsy was repeated three times but consistently showed chronic inflammation with granulation tissue. The patient was subsequently admitted. Clinical impression varied, ranging from benign lesions such as fibromas, fibrous dysplasia to malignant lesions like fibrosarcoma or squamous cell carcinoma. An excisional biopsy under general anesthesia was done (Fig. 2). Intraoperatively, a solid encapsulated tumor broadly pedicled on the right maxilla with bony spicules in its substance was noted (Fig. 3). The mass was highly vascular such that total blood loss amounted to 2 liters.

Histophatology revealed a highly vascular fibroma with large areas of ulceration and intense chronic inflammatory exudates composed of lymphocytes, plasma cells and polymorphonuclear neutrophils. There was no evidence of malignancy. On the basis

*Presented at the Philippine Society of Otolaryngology - Head and Neck Surgery Research Forum on Interesting Cases, September 9, 1988 at the Manila Garden Hotel.

of some clinical features as well as the histologic picture, the final diagnosis was pyogenic granuloma.

DISCUSSION

Pyogenic granuloma (PG) of the oral cavity, although a relatively common lesion, may sometimes present in an unusual manner. It is described to be a well cricumscribed, soft tissue tumor with a size varying from 0.5 cm to 2 cm or more. Trauma and microtrauma due to toothbrushing and gingival inflammation were cited as pathogenic elements.[8] Histologically, PG arises from the connective tissue of the skin and more commonly of the oral mucosa where it can be partly or completely covered by squamous epithelium. In 65% of cases, there is a varying degree of ulceration covered by a mucinous exudate. Usually, lobulated lesions are composed of solid ennthelial proliferation or proliferation of capillary sized blood vessels.[3] Clinically, it appears as an elevated, sessile or pedunculated soft tissue mass. It may have a smooth lobulated appearance sometimes with ulcerative surface which tends to bleed spontaneously.[5] Occasionally, white sloughy material resembling pus maybe observed, thus the term "pyogenic" granuloma given by earlier clinicians. In a review of 762 cases, PG involves in decreasing order of frequency the gingiva, lips, tongue, buccal mucosa, palate, mucobuccal fold and alveolar mucosa of edentulous areas. From further analysis of gingival involvement, the upper gingiva are more common site than the lower gingiva. Stablein and Silverglade in their comparative anlaysis of a total of 834 consecutive biopsy specimens from the gingiva and 448 from the alveolar mucosa reported an 85% incidence of inflammatory or reactive hyperplasia with PG being most common in the gingiva with 23.6% incidence. There was a 10:1 ratio of benign to malignant neoplasia in the gingiva which was greater than in the alveolar (almost 1;1). Moriconi and Popowich[6] reported a case of alveolar granuloma measuring 4 x 6 cm in size. Previous to this report, this case represents the largest PG to be reported in world literature. The lesion occurs in all ages with peak incidence in the third decade as in this patient. Radiographically, there maybe evidence of alveolar bone resorption in large and long-standing gingival masses. There is a reported female preponderance especially in pregnant women presumably due to hormonal factors. It is therefore known as a pregnancy or hormonal tumor. This is one instance when pyogenic granulomas need not be excised surgically since regression and resolution of the mass occurs as the local irritant are eliminated and the pregnancy terminated.[4] Otherwise, treatment of PG involves conservative surgical exicison.

Differential diagnosis in this case included benign lesions such a fibrous epulis, peripheral giant cell granuloma, calcigying fibrooblastic granuloma and ameloblastic fibroma. Anneroth and Sigurdson[2] provided an excellent review and classification of the above-mentioned hyperplastic lesions of the gingiva. In this case, a malignant process was also highly considered because of the unusually large size of the mass with its ulcerative surface and friability on tissue biopsy. Among the malignant lesions, a fibrosarcoma as well as a squamous cell carcinoma were considered. All these lesions will however, have distinct histologic features quite different from PG.

The case presented is very unusual in that lesion has attained a large size, unprecedented in world literature. Of particular interest is its highly vacular nature observed intraoperatively. Surprisingly, there was no radiographic evidence of bone resorption in this case despite its size and duration. The clinical appearance was however suggestive of a malignancy such that repeated biopsies were done.

SUMMARY

A case illustrating a huge mass in the oral cavity has been presented. A rather aggressive and malignant process was considered because of the unusually large size and the ulcerative surface of the lesion.

Histophatologic examination often does not conform with the clinical impression thus resulting in repeated biopsies to establish the definitive diagnosis.

Finally, management was simple and straightforward as conservative surgical excision need be done when histologic identification of a benign process is confirmed.

ACKNOWLEDGEMENT

The authors wish to tank Dr. Joselito Jamir and R. Armando T. Chiong of the Department of Otolaryngology, University of the Philippines for their invaluable advice.

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FIG. 1. Pre-operative picture of the patient showing a large mass protruding out of the oral cavity.

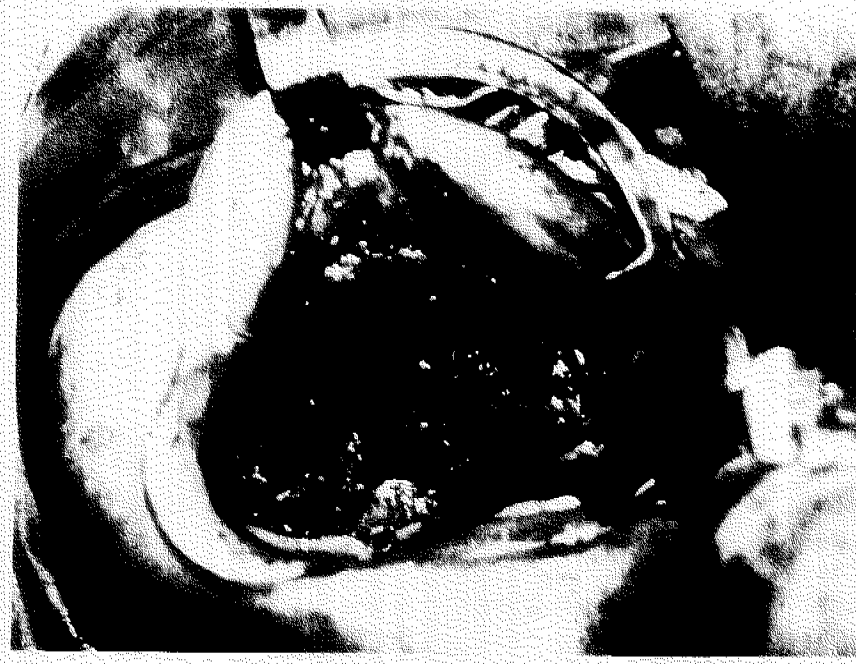

FIG. 2. Picture showing the defect after excision.

FIG. 3. Picture showing bony spicules in the substance of the mass.

MCU HOSPITAL
DEPARTMENT OF OTOLARYNGOLOGY

TITLE: Unusual Cause of Bronchopneumonia in an Infant

AUTHORS: Melchor Beltran, MD
Romeo Villarta, MD

INTRODUCTION:

Foreign bodies in the esophagus are frequently encountered in medical practice. A significant number of these cases are seen in children. Nandi and Ong (1978), in a series of 2394 cases, noted 14.35 of them were children. In Jackson and Jackson's (1950) series, about half the patients were children, while Bakara and Bikhazi (1975) reported 83% of their patients to be children. Among children, the most common symptoms are refusal to take food, increased salivation, dysphagia and vomitting.

However, occasionally we are confronted with an usual case whose clinical picture does not fit the typical natural history of patients with esophageal foreign body. The Department of Otolaryngology - Head and neck Surgery of the following is a case of a seven-month old infant with esophageal foreign body presenting clinically as bronchopneumonia.

CASE REPORT:

A seven-month old baby boy was admitted because of chronic cough of one month duration, productive, and intermittent fever. Despite these symptoms, the patient was noted to have no feeding problems and was, in fact gaining weight.

Several consultations with pediatricians were done but his symptoms were only partially relieved by medications which included antibiotics (amoxycillin), mucolytics (carbocisteine) and bronchodilators (terbulatine sulfate). Two day prior to admission, the child was brought to a hospital where a diagnosis of bronchopneumonia was given. Chest x-ray was done which showed pneumonitis of both lung bases and a foreign body (open safety pin) in the middle third of the esophagus. The patient was subsequently transferred to the Manila Central University Hospital.

Upon admission, physical examination revealed essentially normal findings except for mucuous rales in both lung fields heard during auscultation. A repeat chext x-ray showed same findings as the previous study.

Upon general anesthesia, rigid esophagoscopy was performed. The open safety pin foreign body was seen partially covered by granulation tissues. Using the technique described by Jackson and Jackson, the coiles spring was identified and seized by grasping forceps; the esophagoscope pushed down to effect closure; and the foreign body was extracted without difficulty. The postoperative course was uneventful and the patient was discharged after five days.

DISCUSSION:

This case report reveals several things to consider in cases of esophageal foreign bodies.

FIRST. Esophageal foreign bodies may be seen in infants, as young as seven month of age. Giordano, et al. (1981) have reported their youngest patient to be eight months of age, while Nandi and Ong (1978) reported a seven month old patient. Indeed, Jackson's (1950) warning 40 years ago still holds true today: "No small objects such as safety-pins, buttons, or coins should be left within a baby's reach".

SECOND. Not all cases of esophageal foreign bodies will develop the associated symptoms of excessive drooling, poor feeding or dysphagia. In this case report, the patient was noted to have no feeding problems and was, in fact, gaining weight.

Glass and Goodman (1974) have postulated that since the diet of these young patients consisted of liquid food, it can easily pass through the esophagus even with large foreign bodies.

THIRD. The only presenting symptom that the patient manifested was prolonged one-month duration of cough unrelieved by medications

It may be challenged that the bronchopneumonia of the patient was secondary to the foreign body. However, Newman (1978) has showed that this may be possible. He enumerated the possible pathogenesis of respiratory symptoms secondary to esophageal foreign bodies.

1. compression of the trachea by the posteriorly place esophagus
2. aspiration of pooled secretions in the pyriform sinus can occur from esophageal obstruction and lead to pneumonitis or tracheobronchitis;
3. long standing esophageal foreign bodies may produce respiratory symptoms from cricoid perichondritis or periesophagitis; and
4. very rarely, the esophageal foreign bodies may pass through the acquired tracheo-esophageal fistula and obstruct the airway.

FOURTH. Although uncommon, sharp and pointed foreing bodies can be difficult to manage. It is important to be careful not to make the situation worse or to cause a complication, such as a perforated esophagus. It is always well to remember Jackson's dictum: "Advancing points puncture, trailing points do not."

The open safety pin presents a special problem. Fortunately for us, Jackson and Jackson have discussed the various ways of removing an open safety pin. For the open safety pin with point down, they suggest: "the coiled spring is to be sought and, when found, seized with the rotation forceps and the esophagoscope pushed down over it to effect closure." For the open safety pin with point upward, they suggested sixteen methods of safe removal (Jackson, 1950).

FIFTH. The presence of granulation tissue surrounding the foreign body suggest that the open safety pin had been in the esophagus for a prolonged period of time. It is fortunate for the patient that this "prolonged sojourn of foreign body in the esophagus" as Jackson and Jackson succinctly puts it, has not given rise to possible complications like ulcerations, fistula and esophageal cicatrical stenosis (Jackson, 1950).

SIXTH. The diagnosis of esophageal foreign bodies is by radiographic studies, first without, then if necessary with a capsule filled with an opaque substance. If the opaque capsule seems to lodge, the patient should have a diagnostic esophagoscopy.

In conclusion, esophageal foreign bodies may be overlooked while treating a patient with respiratory symptoms. Some esophageal foreign bodies may present with stridor, wheezing, chronic pneumonia, or may simulate asthma, croup, bronchitis, and bronchopneumonia particularly in children under three years of age. (Newman, 1978). As Jackson has said, "failure to consider a foreign body as a diagnostic possibility is one of the commonest causes of its oversight." (Jackson, 1950).

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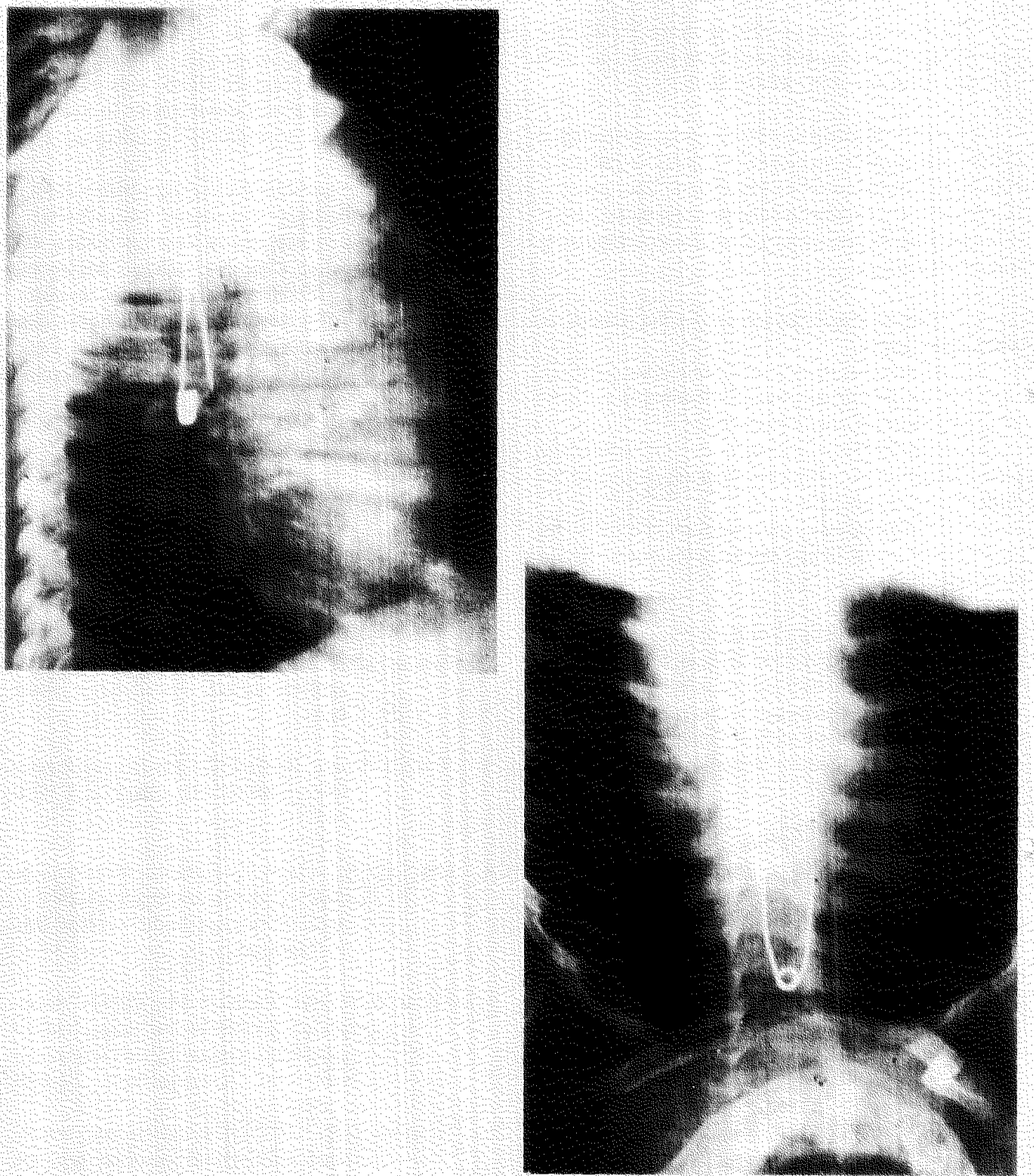
FIGURE : PA and lateral views of the chest x-ray of the patient showing the foreign body (open safety pin)



JOSE REYES MEMORIAL MEDICAL CENTER
DEPARTMENT OF OTOLARYNGOLOGY

TITLE : Cancer and Keloid or Kimura and Steroid

AUTHORS : Henry A. Rossi, MD
William B. Dy, MD

INTRODUCTION

There are times when an Otorhinolaryngologist-Head and Neck Surgeon is at a loss as to how to manage a lesion mimicking numerous disease entities. The more confused he becomes when, in spite of previous standard therapy, the lesion keeps on recurring. Soft tissue tumors, in some of its unusual forms, demand that this special group of lesions be investigated as exemplified by the following case.

CASE REPORT

Nine years ago, a 15 year old male consulted the JRRMC due to a corn size mass on his left earlobe. There were no other associated signs and symptoms except occasional pruritis. Excision biopsy was done but the result was not known. Little did the patient know that this would only be the first of a series of recurrences and surgical interventions.

Immediately after the first excision, the mass recurred. It gradually increased in size making him seek consultation at our institution five years later. Physical examination revealed a 2 x 2 cm. hard, non-tender smooth mass on the left lobule with a 1.5 x 1.5 cm mass of the same consistency on the infra-auricular region. A diagnosis of sebaceous cyst was made. Excision was done and histopath revealed chronic inflammation.

Three months later, the left earlobe mass again started to gradually increase in size. This time it extended to the pre-auricular region. The patient sought consultation at another government medical institution where it was thought to be a parotid tumor. Superficial parotidectomy was then done. Record showed a 6 x 6 x 2.5 cm. mass weighing 40 gm. was removed. Surprisingly, histopath showed no salivary tissue. The result was read as Angiolymphoid Hyperplasia with Eosinophilia. No intervention was made however on the earlobe mass.

This seemed to be a mere descriptive term of the entire microscopic picture. No further investigation was made and patient was advised to follow up regularly without any medication.

The earlobe mass continously increased in size. Patient sought consultation from a private physician where fine needle aspiration biopsy was done on the earlobe mass. Results revealed: benign lymphoid elements in the bloody background. No evidence of malignancy. No surgical intervention was done nor any meds given.

There was no apparent improvement in the patients condition. Although there was no pain and tenderness the patient was bothered by its gradually increasing size. He again sought consultation at our institution where PE revealed a hard, non-tender, keloid-like smooth mass on the left lobule, about 3.5 x 2.5 cms. in size. By this time there were also two palpable lymph nodes on the same side.

The case was presented at the grand rounds and the following differential diagnosis was made:

1. Keloid formation or
2. Malignancy of the ear with neck node metastasis

Analytic dissection shows equivocal outcome with no definite advantage of one.

	Appearance	Presence of Nature Lymph Nodes	Duration	Recurrent
Keloid	+	-	+	+
Malignancy	+	+	-	+

Besides, previous histopath does not favor keloid because there was no collagen formation and neither cancer because there were no malignant changes noted. Consensus then was to do an incisional biopsy of the earlobe mass. Biopsy was done and histopath result revealed stratified squamous epithelium with hyperkeratosis and acanthosis. The dermis contained lymphoid follicles with prominent germinal centers and sheets of proliferating capillary endothelium scattered within the loose connective tissue stroma with numerous eosinophils. There is no evidence of malignancy. The final report read-Angiolyphoid Hyperplasia with Eosinophilia, the same result in the previous excision.

What seemed to be a descriptive term and which was not given much attention is the past, now became a topic of curiosity.

Post biopsy, patient had a 2.5 x 2.0 cm. mass on his left earlobe with two palpable cervical lymph nodes. Management of this kind of disease can be surgical. But now we opted to be conservative. He was started on steroids at a dose of 30 mg bid and after one week, mass had regressed to about one cm. in size and consistency changed from hard to soft. Cervical lymph nodes were no longer palpable.

One year later, no mass was noted and the patient is now back to normal. After nine years of carrying the burden of having a mass in his earlobe, patient finally found relief not through surgical means but through systematic steroids.

DISCUSSION

The histopathologic diagnosis points to a rather uncommon, rarely heard of disease called Angiolymphoid Hyperplasia with Eosinophilia. It seems to be a mere description of the microscopic findings but it is actually a disease entity in itself. What then is Angiolymphoid Hyperplasia with Eosinophilia?

Angiolymphoid Hyperplasia with Eosinophilia or abbreviated (ALHE) is a clinically and histopathologically recognized entity that is characterized by cutaneous nodules, single or multiple, 1-10 cms in diameter often located in the cheek and auricular region. It is also characterized by cutaneous proliferating blood vessels with a typical histiocyte-like endothelial cells and numerous eosinophils. A peripheral eosinophilia may be present but there are no known systemic manifestations. 85% occur in males. Pain and tenderness are rare although pruritus may sometimes occur. It is rather rare disease with only about 250 cases reported in world literature.

Histologically the lesions are characterized by 3 striking features that are always present. The vascular element, which preponderates in early more active cases and the lymphoid or cellular element, which predominates in the later quiscent stages. Other important diagnostic features include diffuse mast cell and eosinophil infiltrations of the dermis and subcutaneous tissues as well as serum eosinophilia. Usually, copious numbers of eosinophils and lesser numbers of plasma cells, lymphocytes, and histiocytes are present in close association with capillary neogenesis. Sometimes lymphoid nodules may be present. (Thompson, 1981).

According to Goldman, the cause and phtogenesis of this process remian unknown. Recent studies have shown that the type of progenitor cell of the lesion is probably a transitional histiocytic-endothelial cell and that the proliferation of these elements may represent a response of this basic vascular cell to an inflammatory or injuries stimulus.

It was in 1948 when Kimura et al first described an unusual skin disease with "unusual granulation combined with hyperplastic changes of lymphatic tissue." Kawada in 1966 reported four cases. Well and Whimster in 1969 had nine cases. In 1971 Mehregan and Shapiro in a study of 14 patients stated that vascular proliferation associated with the formation of lymphoid follicles and tissue eosinophilia is also characteristic of a disease entity described in Japanese literature asKimura's Disease. It has since then been known under the title of Angiolymphoid Hyperplasia with Eosinophilia and later on Kimura's Disease. It has several other names such as angioblastic lymphoid hyperplasia with eosinophilia, eosinophilic lymph-folliculosis of skin, papular angioplasia, and inflammatory angiomatous nodules. But is ALHE really similar to Kimura's disease? Wells and Whimster in 1965

nonetheless stated: "We have the impression that there are more similarities than differences between ALHE and Kimura's Disease".

However in 1969, Jones and Bleecham justified the separation of Kimura's Disease from ALHE mainly because of their location. ALHE is found in the dermis while Kimura's Disease is found in the subcutaneous layer. Furthermore, in 1986, Batsakis and Manning came up with the histologic differences between Kimura's Disease and ALHE.

In Japan and China the disease occured preponderantly in young men (85%) and the patients had numerous subcutaneous nodules. These nodules were primarily in the cheeks but they also occured in the axilla, antecubital, and inguinal regions. Lymph node involvement was thought to be an important feature of the disease.

Kimura's Disease, is an unusual disease that has been recognized only recently in the English speaking world. The orginal pathologic description and case reports appeared in Japanese literature. In these case reports, the lesions were more generalized in their body distribution in contrast to the more clinical appearance in the head and neck area of the more recent cases in England and the United States. (Thompson 1981).

HISTOLOGIC FEATURE	ALHE	KIMURA'S DISEASE
location	superficial subcutis dermal involvement common	deep subcutis adjacent salivary tissue involvement common
lymphoid cell infiltrate	abundant to marked	little to marked
size	1cm (average)	3 cm. (average)
lymphoid follicles	occasionally	always
tissue eosinophilia	always	always
mast cells	common	unusual
vascular	angiomatous proliferation of masses without lumen	capillary & thick walled vessels swollen enothelium no uncanalized endothelial proliferation
fibrosis	often absent or only at borders	prominent

In our patient, the lesion was in the deep subcutis with apparent parotid tissue involvement and size with more than three cm. There were marked lymphoid follicles and tissue eosinophilia. Vascular component showed canalized endothelial proliferation. Fibrosis was only minimal. These features are more compatible with Kimura's Disease.

To ensure acurate diagnosis, it is essential that the otorhinolryngologist be aware of the histologic features of ALHE or Kimura's Disease as well as its clinical characteristics.

Batsakis and Manning in 1986 came up with racial differences in clinical presentation of Kimura's Disease.

CLINICAL FEATURES	ORIENTALS	NON-ORIENTALS
age at onset	1st decade peak at 2nd and 3rd decades	onset in 3rd to 4th decades
sex	85% males	rare in whites
pain and tenderness	rare	rare in whites
coexistent lymph-denopathy	40% incidence increased to 65% with tumors > 2 cm	unusual in whites
peripheral blood eosinophilia	60% incidence	17% of whites
predominant site	pre-auricular, neck scalp (rare)	pre-auricular, scalp neck (rare)

Our patient, a 24 year old male, first noticed the lesion when he was 15 years of age. Tumor mass was larger than 2 cm. with the presence of cervical lymphadenopathy. There was involvement of the preauricular and neck area. Pain and tenderness were not present. Except for the absence of peripheral blood eosinophilia, our patient definitely belongs to the Oriental type of Kimura's.

Batsakis said that the initial stimulus for the lesion is unknown and since host responses with the ethnic overlay may modify clinical expression, it is not impossible to regard the lesions as a fundamental biologic reaction with different clinical and pathologic expression in different races.

MANAGEMENT

Current available literature suggests different treatment modalities in the management of Kimura's Disease. It has been treated with steroids and by surgical excision, irradiation, cryotherapy, and electrodessication. According to Thompson, persistent residual disease and local recurrence are frequent. He suggested laser excisions as a successful alternate mode of therapy with definite benefits over those methods used commonly. Adequate surgical excision seems to be the often treatment of choice but the highly vascular nature of the lesion often makes margins difficult to identify.

Batsakis and Manning suggested radiotherapy as a consideration in recurrent lesions.

Kimura's is indolent and even self-limiting in some cases. However, there is a high incidence of local recurrence or persistence of Kimura's that occur after various forms of treatment. Steroids are given for systemic effect. The use of radiotherapy for indolent benign disease, particularly in younger patients is condemned. (Thompson et al)

Our patient underwent three unsuccessful surgical incisions. Radiotherapy as an alternate mode of management would be unthinkable due to our patient's young age. Because of these circumstances steroid was tried. Prednisone was started at a dose of 60 mg/day and it resulted in remarkable regression of the mass in just one week. One year after, he is still free of disease, does routine work as if nothing happened to him. The turn of events was indeed dramatic for our patient who for the last nine years has endured the course and consequences of the disease.

CONCLUSION

Soft tissue tumors of unusual forms in the head and neck comprises a challenging group of pathologic conditions that cause difficulty in classification and treatment. This poses a great herculean challenge

to the diagnostic know-how of the clinician. There are times that no matter how much intellectual effort the clinicians summons, the diagnosis of these unfamiliar cases would be very difficult without the help of an able pathologist. An example is the case being presented: Kimura's Disease. Clinically, it mimics a lot of tumors, particularly the more common ones, which led to misdiagnosis and therefore mismanagement which may prove to be costly on the part of the patients. In conclusion several points are hereby emphasized.

a) This unusual disease exists among Filipinos and that it should not be left out from our differential diagnosis

b) The difficulty in diagnosisng it clinically behooves us to consult a pathologist for its proper diagnosis and, consequently, for its management.

c) Getting a mere histopathologic description should not stop the clinician from further inquiry to determine the specific disease entity, no matter how rare it is.

Keen diagnostic acumen, knowledge of the existence of the disease, and expert pathologic interpretation are the basic requirements for the early diagnosis of Kimura's disease.

Finally, steroid have so far proven itselft to be the wonder drug, for a highly recurrent lesion such as Kimura's.

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JOSE R. REYES MEMORIAL MEDICAL CENTER
DEPARTMENT OF OTOLARYNGOLOGY

TITLE: NGT Induced Sinusitis: A Prospective Cohort Study

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ABSTRACT:

A cohort study of 51 in-patient with NGT (Group 1) at the Jose R. Reyes Memorial Medical Center was undertaken from October 1969 to August 1990 in order to determine the relationship of nasogastric tube to the development of sinusitis. 50 in-patients without NGT (Group 2) age and sex matched served as control. 39 patients (76.47%) in Group 1 while 10 patients (20%) in Group 2 developed sinusitis within the minimum observation period of 14 days. There is a statistically significant difference between these two groups ($p<0.01$. relative risk = 3.82).

Among patients with NGT, sinusitis is noted to occur between the 3rd to 11th day with a mean of 6.63 days. In this study, comparison of patients with deviated nasal septum and those with midline nasal septum as to the development of sinusitis was done. However, when we compare the site of NGT insertion in Group 1, among the 32 patients with deviated nasal septum, 20 had their NGT placed in the side of deviation and 12 developed sinusitis, while 2 out of the 12 (25%) patients with NGT placed in nondeviated side showed evidence of sinusitis. There is a significant statistical difference between these patients ($p<0.01$. Relative risks = 4.8).

Based on these findings, the authors recommend nasal examination prior to NGT insertion, change of NGT site every 7 days and avoidance of NGT insertion in the deviated side among patients with deviated nasal septum.

INTRODUCTION:

Nasogastric intubation is a seemingly simple and ordinary procedure. This is a task often delegated to the medical clerks and interns. However, this innocuous procedure might not be without complications since, with the introduction of a polyvinyl tube into the nasal cavity, the sanctity of this natural orifice may have been violated.

Linden et al in 1988 recognized sinusitis as a complication of nasotracheal intubation.[7] With tubes of larger diameter exactly filling up the nasal cavity, nasal obstruction causing inflammation of the ostiomeatal unit with subsequent poor 9,10,11 drainage of the paranasal sinuses may reult to sinusitis.

But can a tube with a smaller diameter like nasogastric tube produce similar complications?

It is common knowledge that nasogastric intubation causes nasal obstruction and hence rhinitis. But does it follow that NGT causes sinusitis?

A review of international and local literature showed no specific studies on sinusitis among patients with nasogastric tube were done. To better define the problem and to increase physicians' awareness of nasogastric intubation in relation to sinusitis, this prospective study was undertaken.

GENERAL OBJECTIVE:

To determine the relationship of nasogastric intubation to the development of sinusitis.

SPECIFIC OBJECTIVES:

1. To determine the prevalence of sinusitis among patients with nasogastric intubation.
2. To compare the prevalence of sinusitis between patients with nasogastric tube and those without it.
3. To determine additional predisposing factors in the development of sinusitis in patients with nasogastric tube.

PATIENTS & METHODS:

For a period of 11 months (October 1989 to August 1990), all in-patients at the Jose R. Reyes Memorial Medical Center in whom nasogastric intubation were indicated were examined and evaluated. Prior to nasogastric intubation, complete history and ENT physical examinations which included anterior and posterior rhinoscopy, otoscopy, oropharyngeal examination and indirect laryngoscopy were done. Initial x-ray of the paranasal sinuses (Waters, Cladwell & Lateral views) was performed. Patients were excluded according to the following criteria:

1. Those with prior history of acute or chronic sinusitis and allergic rhinitis.
2. Those patients whose initial sinus x-ray shows haziness of the paranasal sinuses.
3. Those with prior surgical treatment to the nose and paranasal sinuses.
4. Those with prior history of trauma to the nose and paranasal sinuses.
5. Those with tumors of the nose and paranasal sinuses.
6. Patients below 15 yrs. of age.
7. Pregnant patients.
8. Uncooperative patients.

Patients in whom nasogastric tube was indicated and who did not belong to the exclusion criteria were included in this study. This set of patients were labeled as Group 1.

A second set of patients admitted without NGT, age and sex matched with the first group was likewise examined and evaluated. This set of patients was labeled as Group 2. Exclusion criteria were also applied to this second set of patients. Patients who were included had initial sinus x-rays. Daily complete ENT examinations were also done.

In both groups, the occurence of following signs and symptoms were evaluated:

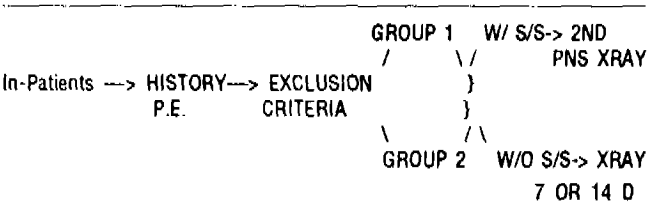
1. nasal obstruction or stuffiness
2. pathologic secretions (purulent, mucoid or serous discharge)
3. headache or tenderness localized to the area of sinuses.

These signs and symptoms are the typical triad of sinusitis as proposed by Stammberger & Wolf.[11] Patients underwent a second paranasal sinus x-ray soon as they manifest signs and symptoms of sinusitis. However, if no signs and symptoms were noted, repeat x-rays were done on the 7th and 15th day from the time of observation. A minimum period of 14 days observation was required. Comparison of the initial and the succeeding paranasal sinus x-rays of the two groups were performed. (Figure 1)

A diagnosis of sinusitis was made if patients showed:

(a) at least two of the signs and symptoms previously mentioned
(b) if the films showed haziness of the paranasal sinuses

FIGURE 1. METHODOLOGY



INITIAL PNS X-RAY

Statistical analysis using Chi-square test with Yates correction was used in the evaluation of the data with p values less than 0.05 considered as significant.

RESULTS:

Sixty eight patients with NGT were initially included in this study. There were 17 drop-outs due to early removal of the NGT and because of early discharge from the hospital. Finally, fifty-one patients who had NGT were included and labeled as Group 1 while another 50 patients without NGT were labeled as Group 2 (age and sex-matched) for a total of one hundred and one patients. Group 1 had 30 males and 21 females. While Group 2 had 30 males and 20 females. The age range of Group 1 patients was 15 through 89 years, with a mean age of 41 years. The age range of Group 2 patients was 17 to 84 years with a mean age of 39 years.

Group 1 had 32 (62.7%) patients with deviated nasal septum and 19 (373%) with midline nasal

septum and 26 (52%) patients with midline nasal septum (Table 1). Nasal septum is a structure that divides nasal cavity into the right and left. However, a nasal septum which is an anatomic midline structure can be deflected/deviated to either side with varying degrees of nasal obstruction.

The average length of hospital stay of both group was 25.5 day with a range of 14 to 35 days.

The signs and symptoms manifested by the patients with sinusitis are shown in Table 2.

TABLE 1. NASAL FINDINGS IN GROUP 1 & GROUP 2

	GROUP 1 (N=51)	GROUP 2 (N=50)
NASAL FINDINGS		
Deviated Nasal septum	32 (62.7%)	24 (48%)
Midline Nasal septum	19 (37.25%)	26 (52%)
Admission diagnoses of Group 1 patients were:		
Mandibular fracture		20 (39.2%)
Cerebral infarct		10 (19.6%)
Intestinal obstruction		8 (15.7%)
Carcinoma, larynx, S/P laryngectomy		4 (7.8%)
Esophageal stricture		3 (5.9%)
Supraglottic wed post excision		(3.9%)
Osteomyelitis, mandible		2 (3.9%)
Carcinoma, hypoharynx		1 (1.9%)
Carcinoma, floor of the month		1 (1.9%)
Admission diagnoses of Group 2 patients were:		
Lateral Neck Mass		3 (26%)
Esophageal Neoplasm		11 (22%)
Stab wound, Neck		10 (20%)
Mandibular fracture		10 (20%)
Laryngeal Ca S/P Tracheostomy		6 (12%)
T O T A L		**50**

TABLE 2. SIGNS AND SYMPTOMS MANIFESTED BY PATIENTS WITH SINUSITIS:

	GROUP 1 (N=39)	GROUP 2 (N=10)
Nasal Obstruction	39 (100%)	8 (80%)
Nasal Discharge	22 (84.6%)	4 (40%)
Purulent	27 (81.8%)	3 (75%)
Mucoid	4 (12.1%)	1 (25%)
Serous	2 (6.1%)	0 (0%)
Headache	5 (12.8%)	6 (60%)
Tenderness	5 (12.8%)	6 (60%)
Maxillary	2 (40%)	2 (33.3%)
Frontomaxillary	3 (60%)	4 (66.7%)
Otalgia	7 (17.9%)	0 (0%)

Most patients in group 1 complained of signs and symptoms referable to the triad of sinusitis.

In Table 3, we compared patients with NGT (Group 1) and those without NGT (Group 2) as to the development of sinusitis. 39 (76.47%) patients from Group 1 developed sinusitis while only 10 (20%) in Group 2 developed sinusitis. Comparing the two groups showed a statistically significant difference ($p<0.01$).

Therefore, these patients who had NGT had a greater probability of developing sinusitis than those without NGT.

Table 4 shows the number of patients with nasogastric tube who developed sinusitis and noted on what day this developed. We noted that sinusitis developed from the 3rd to the 11th day with a mean of 6.63 days. 24 patients out of 39 (61.5%) developed sinusitis on the first week. The rest developed sinusitis later within the second week.

TABLE 3. COMPARISON OF THE PREVALENCE OF SINUSITIS BETWEEN GROUP 1 AND GROUP 2

	PARANASAL SINUS X-RAY RESULT (+) SINUSITIS	(-) SINUSITIS)	
Group 1 (N=51)	39	12	
Group 2 (N=50)	10	40	
TOTAL	**40**	**52**	p<0.01*

*Yates corrected
*Relative risk: 3.82
95% Confidence interval = 4.61 - 37.64

TABLE 4. NUMBER OF PATIENTS WHO DEVELOPED SINUSITIS IN GROUP 1 IN EACH OF OBSERVATION

Day	Number of Patients	Cumulative Score
0	0	0
1	0	0
2	0	0
3	5	5
4	3	8
5	6	14
6	9	21
7	3	24
8	3	27
9	4	31
10	3	36
11	3	39
12	0	39
13	0	39
14	0	39
TOTAL	**39**	

In Table 5, we compared the patients with deviated septum and those with midline nasal septum as to the development of sinusitis. Group 1 had 32 patients with deviated nasal septum. Out of these patients, 22 developed sinusitis. Nineteen patients from Group 1 had midline nasal septum. Out of these patients, 17 developed sinusitis.

Comparing the patients with deviated nasal septum and those with midline nasal septum as to the development of sinusitis showed no statistical significant difference ($p<0.05$) (TABLE 5). Therefore, we can say that in the development of sinusitis, we did not show a difference whether patient had deviated nasal septum or not.

However, when we compare the site of NGT insertion in the development of sinusitis, we got one interesting statistics. Among the 32 patients with deviated nasal septum in Group 1, 20 (62.5%) had their NGT place in the side of deviation and 12 (37.5%) had them placed in the nondeviated side. 19 out of 20 patients (95%) showed evidence of sinusitis, while 3 of the 12 patients (25%) with NGT placed in the nondeviated side had evidence of sinusitis. Comparing the two results showed a significant statistical difference ($p<0.01$) TABLE 6.

Therefore, we can say that if the NGT is placed in the deviated side, sinusitis is more likely to occur.

TABLE 5. COMPARISON OF THE PREVALENCE OF SINUSITIS IN GROUP 1 PATIENTS AS TO THE NASAL FINDINGS

	PARANASAL SINUS X-RAY RESULT	
	(+) SINUSITIS	(-) SINUSITIS
NASAL FINDINGS (N=32)	22	10
MIDLINE SEPTUM (N=19)	17	2
TOTAL	39	12
		$p>0.05$*

*Fishers exact 2 tailed p value

TABLE 6. COMPARISON OF PREVALENCE OF SINUSITIS AMONG GROUP 1 PATIENTS WITH DEVIATED NASAL SEPTUM IN RELATION TO SITE OF NGT INSERTION.

	PARANASAL SINUS X-RAY RESULT	
	(+) SINUSITIS	(-) SINUSITIS
SITE OF NGT		
NGT IN THE DEVIATED SIDE (N=20)	19	1
NGT IN THE NONDEVIATED SIDE (N=12)	3	9
TOTAL	**22**	**10**
		$p<0.01$*

*Yates corrected
*Relative risk: 4.80
95% Confidence interval = 2.46 - 228.71

DISCUSSION:

Sinusitis is defined as an inflammation involving the lining membrane of any paranasal sinus. While the most common etiology of paranasal sinusitis is the respiratory viruses, a variety of other agents such as nasal tumors, foreign bodies, and any 2.8.9 devices placed inside the nasal cavity may play a major role. Various authors recognized predisposing factors in the development of hopsital acquired sinusitis among which are nasotracheal tubes, facial or cranial fractures, nasal packing 2.6.7 and nasogastric tubes. The critical importance of obstruction of the ostiomeatal unit secondary to nasal intubation should be emphasized.[3,11] The sinuses drain through the ostiomeatal unit into the nasal cavity. Drainage of the sinuses is also dependent upon 1.10 the size and location as well as the patency of the ostia. Therefore, nasogastric tube as it impinge against the nasal mucosa can cause rhinitis and if the nasogastric tube is placed in such a way that it interferes with the patency of sinus ostium, this then causes sinusitis. In our study, sinusitis among patients with nasogastric tube occurred in 39 out of 51 patients (76.5%) in Group 1 while only 10 patients had sinusitis in Group 2 (without NGT). Comparing the results of the groups, a statistically significant difference was noted ($p<0.01$). Patients with NGT has a higher risk of developing sinusitis than those patients without NGT (Relative Risk of 3.82) as shown in Table 3.

It is a common knowledge that nasogastric tube with its foreign causes inflammation/congestion of the nasal mucosa resulting to rhinitis. Later on, mechnical obstruction of the 12 ostiomeatal unit in the lateral nasal wall may occur. Impairment of sinus drainage enhances bacterial growth thus causing sinusitis.[3]

12 patients (23.5%) with NGT did not develop sinusitis. it was noted that in this subgroup of patients, the nasal examination showed the nasogastric tube was inserted in the nondeviated side of ten patients. It is also possible that the NGT was placed in such a way that it hugs the floor of the nasal cavity away from the middle meatal area hence may not affect the ostiomeatal unit.

Among the group 2 patients, 10 (20%) developed sinusitis in their stay in the ward. All of these patients had deviated nasal septum. These patients were exposed to nasocomial infections while in the ward and septal deviation might be an additional predisposing factor to the development of sinusitis.

Between 1 to 7 days, 24 patients (61.5%) in Group 1 developed sinusitis. On the second week of observation period, 15 more patients from Group 1 showed evidence of sinusitis. In this study, sinusitis was noted to occur between 3 to 11 days with a mean of 6.63 days. Right on the first day of NGT insertion, inflammation takes place. With further inflammation of the mucosa, the sinus becomes blocked. This inflammation of the sinus mucosa is seen as haziness on x-rays. Manifestations of sinusitis begin to develop on the 3rd day onwards and by the 7th day, many have developed sinusitis.

It has been shown that there is no statistically significant difference between the prevalence of sinusitis in patients with deviated nasal septum and those with midline nasal septum. But if the NGT is placed in the side of deviation, there is a greater risk of developing sinusitis as shown in Table 6. Septal deviation per se is a potential cause of sinusitis.[4,8,11] If the NGT is placed in the deviated side, there will be more pressure contact on the nasal mucosa. Nasal obstruction will be more evident in an already constricted nasal cavity. The potential factor should therefore be taken into consideration during NGT insertion.

The limitations of this study are:

1. In the evaluation of sinusitis, direct aspiration of the sinuses or antral lavage with culture of the aspirate[2,7,9] should have been done. But because of poor patient cooperation, the technical difficulties of this invasive procedure and that other sinuses are not directly accessible, this was not done in this study

2. Reversibility of sinusitis should be nasogastric tube be removed[2,5,7] was not ascertained due to poor patient follow-up.

3. Owing to the unavailability and prohibitive cost of the sinuscopes[1] in our local set-up, the ostiomeatal complex cannot be assessed. Such assessment would have improved evaluation of the effect of nasogastric tube in the area of the ostiomeatal unit.

CONCLUSION & RECOMMENDATIONS:

The important findings in this study are summarized as follows:

1. There is a higher prevalence of sinusitis among patients with nasogastric tube than those patients without it. Sinusitis was noted to occur in 76.47% of patients with NGT in this study. The risk of developing sinusitis secondary to NGT is 4 times greater than those patients without NGT.

2. Sinusitis in patients with NGT developed between 3 to 11 days with a mean of 6.63 days. As the duration of nasogastric tube is prolonged more patients develop sinusitis.

3. the risk of developing sinusitis is greater if the NGT is placed on the deviated portion of a deviated nasal cavity.

In light of the results of this study, the following points are recommended:

1. Nasal examination should be done prior to nasogastric intubation to determine side of septal deviation, if present, and to take note of other obstructive tissue such as enlarged turbinates. The medical clerks, interns. and residents should know this basic step.
2. Since sinusitis among patients with NGT is noted to occur on the average on the 6th day, physicians are cautioned not to prolong the stay of the NGT in one nasal cavity. If this is not possible, a change of NGT site to the other nasal cavity on the 6th or 7th day is recommended.
3. If nasal examination showed deviated nasal septum, putting the NGT in the deviated side is not recommended. If NGT is indicated, put the NGT in the nondeviated side.
4. The attending physicians (especially the neurologist) who deals with a comatose patient are advised to be more aware with the problem. For any unexplained signs and symptoms of infection such as fever and leucocytosis,[5] the NGT causing sinusitis could be the culprit.

Nasogastric intubation should not therefore be discarded as a routine procedure requiring no preliminary knowledge of the area of insertion. For the medical clerks, interns, resident physicians and even the specialists aspiring for quality medical care, may this simple advise on nasogastric intubation be a symptom-free experience for the patients and a trouble-free procedure for the physicians.

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OSPITAL NG MAYNILA
DEPARTMENT OF OTOLARYNGOLOGY

TITLE: Hereditary Hemorrhagic Telagiectasia

AUTHOR: Nixon S. See, MD

This is the case of Rosa Param a 31 y/o female from Manila admitted for the first time on August 10, 1989.

CHIEF COMPLAINT : nose bleeding

HISTORY OF THE PRESENT ILLNESS:

One year prior to admission patient started to experience several episodes of epistaxis which stopped spontaneously on local pressure.

Three days prior to admission patient had profuse nose bleeding and was brought to the PLM-OM where anterior nasal packing was done which controlled her epistaxis. However patient removed the packing and epistaxis recurred thus requiring subsequent admission.

PAST MEDICAL HISTORY:

1987 DX: PTB with intake of unrecalled medications

OBSTETRICAL HISTORY: Menarche at 18 y/o, regular, 30 days cycle.
3 days duration, moderate in amount

FAMILY HISTORY: (+) bleeding tendency - paternal grandmother and father

(+) PTB - grandmother

(+) Cancer - paternal and maternal side

PHYSICAL EXAMINATION:

General Survey: conscious, coherent, pale, ambulatory, not in distress

V.S.: PB: 90/60 PR: 100/min RR: 20/min T: 36.7 C

Head: normocephalic

Eyes: pale palpebral conjunctiva, anicteric sclera

Ears: intact tympanic membrane, no discharge

Nose:

Anterior rhinoscopy: with active bleeding noted in left nasal cavity

Posterior rhinoscopy: (+) active bleeding

Oral cavity: (-) tonsillo-pharyngeal congestion
(-) mucosal lesions

Neck: (-) mass, no cervical lymphadenopathy

Chest: symmetrical thoracic expansion
(-) retraction

Lungs: clear breath sounds,
(-) rales/wheezes, with systolic blowing murmur heard in the right interscapular area accentuated on deep inspiration

Heart:: adynamic precordium, normal rate , regular rhythm, no murmur

Abdomen: flat, soft, non tender, no organomegaly

Extremities: (=) clubbing, cyanotic nailbeds

Neurological examination: essential normal

COURSE IN THE WARD:

On admission posterior nasal packing was done to control the bleeding. Several laboratory examination were done CBC and peripheral smear revealed hypochromic normocytic anemia. Platelet count, clotting time, and prothrombin time were normal. Chest

x-ray revealed a dense tortuous cylindrical nodule at the posterior RUL and a pleurodiaphragmatic adhesion on the left. Possibility of an A-V malformation and TB granuloma was entertained. Pulmonary and carotid arteriography were contemplated but was not done due to financial constraint. ECG was normal. ABG showed hypoxemic hypocardia. Two units of FWB were tranfused. Post BT Hgb and Hct were low, patient continued to have on and off epistaxis necessitating transfusion of 4 units of FWB in a week time.

On the 10th hospital day bone marrow aspiration biopsy was done to rule out blood dyscrasia, result revealed normal bone marrow findings.

On the 13th hospital day the patient bled profusely, she underwent emergency bilateral external carotid artery ligation in an attempt to control epistaxis. Post operative Hgb and Hct were still below normal value prompting another series of blood transfusion. Patient continued to have episodes of epistaxis which spontaneously stopped. Rigid nasopharyngoscopy was done revealing an erythematous maculopapular lesion on the left side of the nasal septum located posteriorly.

Upon discharge patient continued to experience epistaxis relieved by local pressure. Two months later profuse nose bleeding recurred and she lost consciousness for which she was rushed to Ospital ng Maynila and was re-admitted. Contrast C.T. scan was done which revealed normal findings.

In summmary, we are presented with a 31 y.o female patient with the following salient features; recurrent epistaxis, erythematous maculo-papular lesion on the nasal septum clubbing and cyanosis of nail beds, a blowing murmur at the right interscapular area which appear to be extracardiac in origin, normal hematologic studies except for anemia, possibility of an A-V formation on chest radiography and a family history which revealed that her grandmother had similar experience. Withthese, the possible underlying cause of recurrent epistaxis should be explored.

Infection would not produce such prolonged and massive epistaxis. There was no history nor evidence of recent nasal truma. Patient was not hypertensive. Hematologic dysfunctions such as acute leukemia, aplastic anemia, and Heriditary Hemorrhagic Telangiectasia should be considered. However, acute leukemia and aplastic anemia were ruled out because of a normal blood morphology and bone marrow findings.

Hereditary Hemorrhagic Telangiectasia is the more probable consideration for this case. It is autosomal dominant disease characterized as a sytemic fibrovascular dysplasia in which telangiectasia, A-V malformation and aneurysm maybe widely distributed through out the body vasculature. This is recognized as a classic triad of telangiectasia, recurrent bleeding and family history. The lesions maybe pinpoint in size or larger and form nodular vascular tumor, sometimes it appear as a spider-like lession. Significant symptomatology include recurrent bleeding from mucosal telangiectasia, hypoxemia, cerebral embolism and brain abscess due to pulmonary A-V malformation.

Epistaxis is the most common form of bleeding and it is the first hemorrhagic event in Hereditary Hemmorhagic Telangiectasia. In our patient several attempts have been done to control epistaxis i.e., local pressure, anterior and posterior nasalpacking, ligation of the blood supply of nasal cavity . Yet inspite of these interventions, there were still episodes of bleeding. Bilateral external carotid artery ligation completely failed to control the hemorrhagic event in this patient because of the rich vascular channels supplying the nasal cavity.

Hereditary Hemorrhagic Telangiectasia is the most common disease associated wth pulmonary A-V fistula. Pulmonary fistula maybe solitary of multiple, majority of which receive blood supply from the pulmonary artery and are right to left shunts. Right to left shunts allows desaturated blood to enter the systematic circulation to cause cyanosis by hypoxemia, polycythemia and clubbing.

On chest x-ray the typical pulmonary A-V malformation is peripheral, circumscribed, non calcific nodule connected to the hilus by vascular strands.

Management of this case is variable depending on the severity of the disease. Oral iron and folic acid supplements maybe necessary to avoid iron deficiency. Transfusion requirements were variable.

Treatment modalities to control bleeding such as local pressure, topical vasoconstrictors, chemical or electrical cautery and arterial ligaton offer only

temporary relief. According to Harrison "once significant bleeding has started, local non specific theraphy is not only ineffective but frequently enhance bleeding and, by destroying the septal mucosa or producing scar tissue, may reduce possibility of future control.

Two other modes of therapy were found to achieve prolonged remission of epistaxis. These are the use of estrogen and septal dermoplasty.

Several studies have reported that estrogen may decrease epistaxis in Hereditary Hemorrhagic Telangiectasia by endothelium or by undergoing squamous metaplasia of the nasal mucosa overlying the lesion.

At present our patients have been receiving estrogen. Results have been favorable.

There were reports that surgical management should be contemplated for the case of Hereditary Hemorrhagic Telangiectasia that bleed profusely. Since other forms of management have proved unsatisfactorily, several authors have advocated the use of dermoplastly.

However,septal dermoplastly can only be used for disabling epistaxis that is located anteriorly. Success rate n relieving epistaxis by doing this procedure has reached 75%. Failure is attributed to inadequate graft coverage and graft shrinkage and re-expose of the abnormal vessels.

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STO TOMAS UNIVERSITY HOSPITAL
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TITLE: The Neck Mass, A diagnostic Challenge
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The differential diagnosis of a neck mass covers a broad spectrum of disease and carries implications for treatment as varied as any area of medicine.

Cysticercosis is an uncommon disease that is rarely seen by an otolaryngologist. In fact, it is not likely to be the first diagnosis the otolaryngologist has in mind in regarding tumors of the head and neck.

The case of a 28 year-old Ilocano male referred for an enlarging neck masss is presented . The patient underwent excisional biopsy and hisphatologic findings obtained were consistent with Cysticercosis.

The presentation is supported by clinical color photography and histologic slides. Cysticercosis will be discussed; its head and neck manifestations will be emphasized.

INTRODUCTION

The practice of Otolaryngology has always been dynamic and interesting brought about by the variety of cases involving the ear, nose and throat. It has become more enticing with the more active involvement in the study of the head and neck, thus posing a wider challenge to the practicing otolaryngologist. The complexity of the neck with particular attention to neck mass presents this greater challenge.

The diagnosis of neck masses cover a broad spectrum of diseases and carries implications for treatment as varied as any area of medicine.

All possible diagnosis and means of differentiating them are too numerous to mention.

The common neck masses are presented

Category	Neoplastic	Congenital/Devt'l	Inflammatory
Metastatic	Unknown Primary Epidermoid CA	Sebaceous Cyst Branchial Cleft Cysts, fist and second	Lymphadenopathy Bacterial Viral Granulomatous
	Primary H & N Epidermoid CA or Melanoma	Thyroglossal Duct Cysts	
	Adenocarcinoma	Lymphangioma, Hemangiona	Tuberculosis
Primary	Thyroid tumor Lymphoma Salivary tumor Lipoma Angioma Carotid Body Tumor Rhabdomyosarcoma	Deroid Cysts Ectopic Thyroid Laryngocoele Thymic Cysts	Cat-scratch Sarcoidal Fungal Sialadenitis Parotid Submaxillary Congen. Cysts

CASE REPORT

A 28 year old healthy man from La Union suddenly noticed a slowly growing nodule over the neck for the past five years. On consultation in February 1990, the local finding was a firm, non-tender tumor, approximately 1.0 x 1.0 cm in size, along the right antero-lateral aspect of the neck, at the level of the cricoid cartilage, free from skin, however, apparently attached to the underlying muscle. There were no other accompanying signs and symptoms. Complete blood count (CBC) and chest x-ray were both normal. Routine stool tests for parasites were likewise negative. The tentative diagnosis was a nonspecific swelling of the lymph node. The small nodular mass along the sternocleidomastoid muscle was removed. The hispathological examination showed Cysticercosis cellulosae. Repeated stool tests gave negative findings for Taenia. No medications were prescribed, however, patient was informed of hygienic and prophylactic measures. Pertinent personal history revealed that the patient is a heavy smoker and drinker. With a craving for "Kilawin" or raw spiced meat or fish on every drinking spree.

DISCUSSION

Very few reports exists concerning manifestation of cysticercosis in the otolaryngological field, and this disease is not mentioned in standard textbooks of otolaryngology.

In the life cycle of Taenia solium, man is primary host. As the tape worm growns in the human intestinal tract, proglottids (segments filled with eggs) detach from the adults and are passed with the feces into the environment. The domestic pig is the only significant intermediate host; it becomes infected when it eats the food contaminated by proglottid-containing feces. Ingested eggs hatch in the pig's stomach and duodenum, where they penetrate the intestinal epithelium.

Vascular and lymphatic invasion allows a wide distribution of the larvae to various tissues. The larvae may localize in any site in the body such as skin, subcutaneous tissue, skeletal muscle, heart, brain, liver, lungs and the eyes. The larvae develop within the tissues into small, thin, translucent cysts. The cyst evokes an inflammamtory reaction which is characterized by large numbers of eosinophils and polymorphonuclear cells. The reaction is attributed to a hypersensitivity reaction to leaked cystic fluid. Rupture of the cyst exites a more pronounced inflammatory reaction, characterized by fibroblastic proliferation and giant cell and granuloma formation, eventuating in focal granulomas followed by calcification.

By eating infected pig meat ("measly pork") man completes the life cycle and the cysticerci can develop into adult intestinal tapeworms.

Man may replace the pig as the intermediate host by two means: (1) by oral consumption of fecally contaminated food that contains proglottids or eggs or (2) by intestinal auto-infection from reverse peristalsis, with the introduction of proglottids into the stomach where hatching commences.

Human cysticercosis can involve multiple organ systems. The clinical features are extremely variable and depend on the location and number of cysticerci into the host. Light humaninfestations, the result of swallowing a few eggs, may escape unnoticed unless a cyst is so located as to cause physical signs. Heavy infestations with hundreds of cysticerci cause very grave manifestations chiefy due to the presence of cysterci in the central nervous system. When alive, these parasites rarely cause trouble, but they begin to die and degenerate within three to five years.

The larvae at first may cause a local, surrounding, inflammatory reaction with infiltration by neutrophils and lymphocytes, and a stimulation to fibroblast production.

Subsequently, the larvae become enclosed within a fibrous capsule, or necrosis may occur, followed by caseation or calcification which often times can be seen on roentogenologic study. Sections may show the hooks and suckers in the scoltex or the intestinal structures in the body of the parasite.

The rarity of this parasitic infection, along with the constitutional symptoms it presents, has beeen the reason for its poor documentation. There have been very few reports regarding Cysticercosis worldwide, more so, its head and neck manifestations.

In a limited study done from 1970-1980 in Latin America, a predominance of brain and ocular involvement is presented. It is further emphasized that muscular involvement ranks second to last and the neck taken as a single entity may even be a more minute fraction.

A report on 2188 cases:

Encephalon	1719	(78.6%)
Spinal Cord	72	(3.3%)
Eye & Adnexa	368	(16.8%)
Subcutaneous Tis	159	(7.3%)
Muscle	79	(3.6%)
Heart	31	(1.4%)
Others	124	(5.7%)
Generalized	23	(1.1%)

100%

A diagnosis of cysticercosis is made by palpation of cysticerci, by biopsy of the cyst, and by identification of the hooked head of the future worm in each of these cysts.

Eradication of the adult worms from the intestine should not be delayed when infestation of Taenia solium is detected. Early precautions must be taken to ensure that dissemination of the eggs cannot occur. It is important that the head of the worm is released from its hold on the intestine. If it remains, even though all the existing segments of the worm are removed, formation of new segments will restore the worm to its full size within a few months. The drug traditionally used is quinacrine hydrocloride.

Preventions primarily by personal hygiene. This is followed by general sanitary measures such as cooking at 65.5 C or freezing at 20 C for not less than 12 hours. These are effective ways of destroying the larvae.

Mild infestations can cause little trouble, but in cases of cerebral cysticercosis, the prognosis is very poor.

CONCLUSION

The multitude of diagnostic possibilities presented as a neck mass definitely arouses the curiosity and scrutiny of every practicing physician. The possibility of a parasitic infection in the form of Cysticercosis has been presented. Although the possibility is rarely encountered, knowledge of its occurence should make each clinician aware of the fact that behind every neck mass, "worm maybe hiding".

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TITLE: Cleft Lip Surgery for Rural Filipinos

AUTHOR: Edwin M. Cosalan, MD, FPSO-HNS

To "travel the last Travelled road " is how the keynote speaker for our first annual ENT Convention, the honorable undersecretary of Health, Dr. Antonio Periquet puts it as he challenged the Society to reach out to the rural population.

Our paper, "Cleft lip Surgery for Rural Filipinos" will show that road is already being travelled, and that challenge is being partly answered.

INTRODUCTION:

In 1986, an ENT surgeon, an opthalmologist, a pastor, with some friends what was soon to be known as PROJECT LUKE. It was a Christian organization and derived its name from St. Luke who was himself a physician.

Born out of a perceived need to bring specialty health care to rural areas where 60% of the Philippine population reside, and to provide these services to indigents—the very people who cannot afford them, it developed 2 separate programs: a prevention of blindness program under the ophthalmologist, and a RURAL ENT PROGRAM under the ENT surgeon.

Since then, over 82,000 people have been beneficiaries of the Project Luke program. Over its 3 1/2 years of experience, 41 surgical outreach missions have been conducted, and over 1,500 surgeries for both programs have already been performed. Travelling by land, by sea, and sometimes by plane, we have reached places as far as Basilan and Zamboanga in the South, Samar and Cebu in the Visayas, the Cordilleras, the Cagayan Valley, the Ilocos provinces, even as far as Aparri in the North.

Under the rural ENT program alone, over 440 surgeries have been performed to date. Of these, about half of the surgeries were for cleft lip and palate deformities (although palate surgeries are generally not done in outreach areas).

This paper reviews the data and experience on cleft lip surgery accumulated in my work as the lone ENT surgeon in all of the 41 surgical missions. We have been doing 50 to 60 cleiloplasties a year under the program. Of the estimated 240 lip and palate surgeries done, about 200 were cheiloplasties.

REACHING THE TARGET POPULATION:

Orientals have the highest incidence of cleft deformitites per thousand live births in the world. In our country, this is compounded by the lack of available expertise and the unaffordability of these services, if present, in the rural areas. It stands to reason, therefore, that many cases await the willing ENT surgeon who travels outside the comfortable enclaves of his urban, practice to the relative discomfort of the rural area.

How do we reach our beneficiaries ?

Organizing surgical outreach missions, much less 41 missions, has its difficulties, but it lies at the very core of our success in reaching the target population.

Through the years, we have been establishing contacts with non-governmental organizations (NGOs) all over the country. We have been in touch with government entities as well. This networking has now been formalized or institutionalized even as we continue seeking and forging partnerships with other groups for future missions. It is through these local groups that all arrangements for the missions in their locality are made, including the recruitment and screening of patients.

Screening is done at the two levels: a) screening for the indigency status of the patients where the local DSWD sometimes help b) medical screeening of the patients by local doctors or personnel of participating hospitals. This includes cardiopulmonary and pediatric clearances after screening for patients needing surgery.

Contacts with these participating organizations are made months before the actual mission to give ample time for preparations to be made. At present, for example, we already have monthly schedules for surgical missions up to October this year.

OPERATING ROOM PROCEDURES:

Our procedures at the OR remain standard except for some modifications adapted for other particular situation. An example of this is the two bed set up in the OR for faster transit and turnover of patients. This is particularly helpful if the procedures are successively done under local anesthesia. Another example is the OR information sheet. This paper is placed on the OR wall providing quick reference on needed patient information for the anesthesiologist as well as the surgeon.

The information sheet provides the patient's name, age, sex,hemoglabin, blood type, diagnosis, surgery to be done, weight in kg. allowable blood loss, and remarks for any patient idiosyncracy. The weight in kg. is particularly helpful beacauseit is used for computing local and general anaesthetic dosages as well as allowable blood loss (14 cc/kg). Patients are listed in sequence by which they are to be operated.

CHEILOPLASTY TECHNIQUES USED:

Our cheiloplasty techniques have varied from case to case. Definitely, we have come along way since the "hare lip pins" of old. Among the numerous techniques described for cleft lip repair since Mirault introduced cross flap techniques in 1844, we have been using the following:

A. For Unilateral Cleft lips:

1. Milard I and II

   This has been used in about 80% of the cases. Being a "sight method " or "cut as you go technique", the need for exact measurements with a caliper is not necessary making this a convenient method when calipers are unavailable or when doing several cases in a short period of time.

2. Tennison or Triangular flap method. Although more exact measurements have to be done, this method has given us consistently good results. This is especially true in case where the superior rotation from the horizontal plane of the cupids bow is severe. It can be rightly argued that the low triangular flap used in this method makes for an obvious lip scar. However, we feel that in young children below the age of one, the very favorable scar maturation makes the scar almost unnoticeable.

3. Rose-Thomson closure.

   This method used with a Z-plasty modification at the mucosal side have been used with satisfactorily results in small incomplete clefts.

B. For Bilateral Cleft lips:

1. Veau III tecnique

   The need for single stage procedure become more compelling in outreach work. This method, which we have used in most of our cases, has the advantage of being a one stage prcedure giving results that are cosmetically acceptable.

2. Two stage procedures.

   In rare instances, we have had to resort to 2 stage procedures when the protuding prexamilla prevents a reasonably tension free closure, especially when complicated by malnutrition in the child. We have used 2 successive Millard I techniques to close a bilateral cleft lip with good cosmetic results.

SEQUENCE OF SURGERY:

The sequence of doing the surgery has become routine. It takes about 30 to 45 minutes when done under local anaesthesia (in adults and older children) at about an hour if done under general anesthesia (from intubation to extubation of patient).

After intubation and the endoctracheal tube placed in the midline to avoid lip distortion, the surgeon stays at the head of the OR table for a more symmetrical view of the patient lips.

1

Incision lines are marked with methylene blue or gentian violet

2

Injection of incision site with Xylo caine 1% with adrenaline 1:200,000 dilution. Done even under G.A. our experience has shown that we have been using as much as 2/3 less maintenance dose of G.A.drugs (Ethrane). This redounds to a cheaper, safer surgery and a patient who wakes up faster from general anesthesia.

3

Incisions are done first with a blade 15 for the skin then with a blade 11 for the through and through incision keeping in mind PROPER ANOTOMICAL SPATIAL RELATIONSHIPS

4

After meticulous hemostasis, suturing in 3 layers is done (mucosa, muscle, skin) using chromic 3-0 and silk 5- or 6-0.

5

The wound is cleaned and an antiseptic :solution (betadine) is applied

6

Band aid is then apllied which we feel release some of the skin tension and has some pressure dressing effect. This is retained for 24 hours.

7

The wound is cleaned of dried blood the next day and an antibiotic ointment applied. The ointment helps prevent crust formation. An open dressing is preferred.

8

Antibiotics are given routinely for 3-5 days in areas where sterile conditions are in doubt. This means in most areas.

9

Sutures are removed in 5-7 days by local medical personnel.

PROFILE OF THE FILIPINO CHILD WITH A CLEFT

Having gone over the country, what is the profile ofthe Filipino child with a cleft ?

Although there are some numbers of epidemiological studies on cleft lip and palate in Western literature, no local studies on the Filipino patient seems to be available.

From our available records and survey conducted on our patients in the past 2 years, we have come up with the following. This data tallies with epidemiological studies done abroad such as the Fogh-Anderson series.

Perhaps because it is such an obvious deformity, most cases are first seen in the below 5 age group as shown in figure one.

The youngest patient operated on was a 3 mos. old infant while the oldest was a 73 year old female from Candon, Ilocos Sur who requested for a lip repair after seeing repairs done on the younger patients. In the series, more males are seen than females at a ratio of 1:5.

As in studies done abroad, Cleft lips with palate are more often seen than either cleft lip alone or cleft palate alone. Figure 2 also shows that cleft lip alone are more frequently seen than cleft palate alone. There are more males than females are seen than males with cleft palate alone.

Of the UNILATERAL CLEFT LIPS (N=71) seen, they are more often found on the left than on right at a ratio of 2.3:1.

A search for possible precipitating factors in cleft lip and palate genesis may show that family history may be more revealing than the maternal history during the trimester as shown in figure 3. Family or maternal histories was not significant in 18.9% of respondents. Maternal history revealed 6.3% had taken medications during the first trimester of pregnancy. These medications however are not known teratogens (acetaminophen, aspirin, vitamins) unlike Valium and Dilantin which are implicated in the genesis of these deformities. It is the FAMILY HISTORY however that is a revelation.

Significantly, 57% of the respondents have a family history of clefts occuring in relatives, parents, or siblings. These shows a strong generic trend in the pathogenesis of these cleft.

Parental concepts of cause also gauged in our survey because they play a role in the management of cases. They were asked the question: "What do you think caused your baby to develop such a deformity ?" The 97 who responded had the folllowing answers-

1. Inherited - 35%
2. Slipped and fell while pregnant - 25.7%
3. Does not know - 15.4%
4. "napaglihian" - 6.1%
5. Intake of medicine during pregnancy - 4.1%
6. Traveling during pregnancy - 2%
7. "Menopause baby" - 2%
8. "gulat" - 1%

CONCLUSION:

In summary we have a) described how we have reached our target population, b) described our standard procedures and techniques, and c) described a profile of the Filipino child with a cleft lip and/or palate based on our own survey and available data.

Admittedly, there are disadvantages to aour working set up. Foremost among theeme are a) impracticality of long term follow-up and treatment of cases so important in plastic repair , and b) working under SUBOPTIMAL conditions of sterelity and competence of assisting personnel.

But then again we live in the third world where conditions are NORMALLY suboptimal. Any facial deformities, which are not only physical but psychological disabilities as well, are an added weight to the already heavy burden of poverty.

On the bright side of it, such a set up has its advantages: a) many cases, otherwise hidden for various reasons, are brought out for treatment, b) it is always a learning opportunity for both the community and the visiting surgeon, c) it is a good opportunity to introduce our specialty to the people, and d) perhaps above all, it is an opportunity to specialists like us, to be of service to the people.

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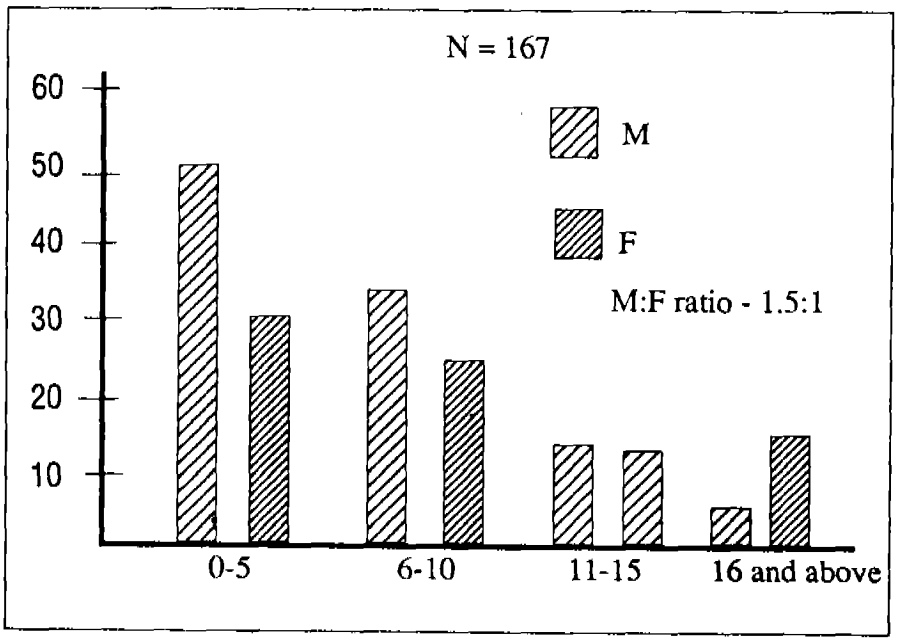

Fig. 1

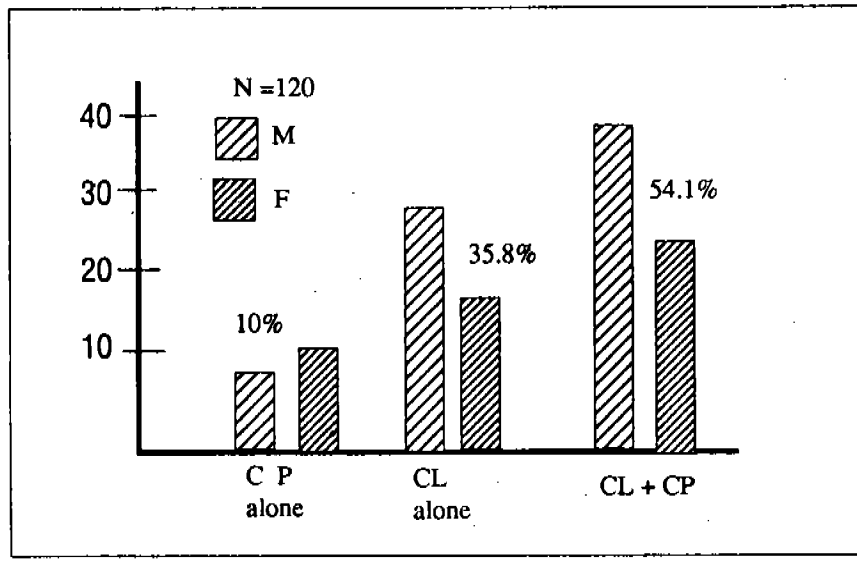
N =120
M
F
40
30
20
10
10%
35.8%
54.1%
C P
alone
CL
alone
CL + CP

Fig. 2

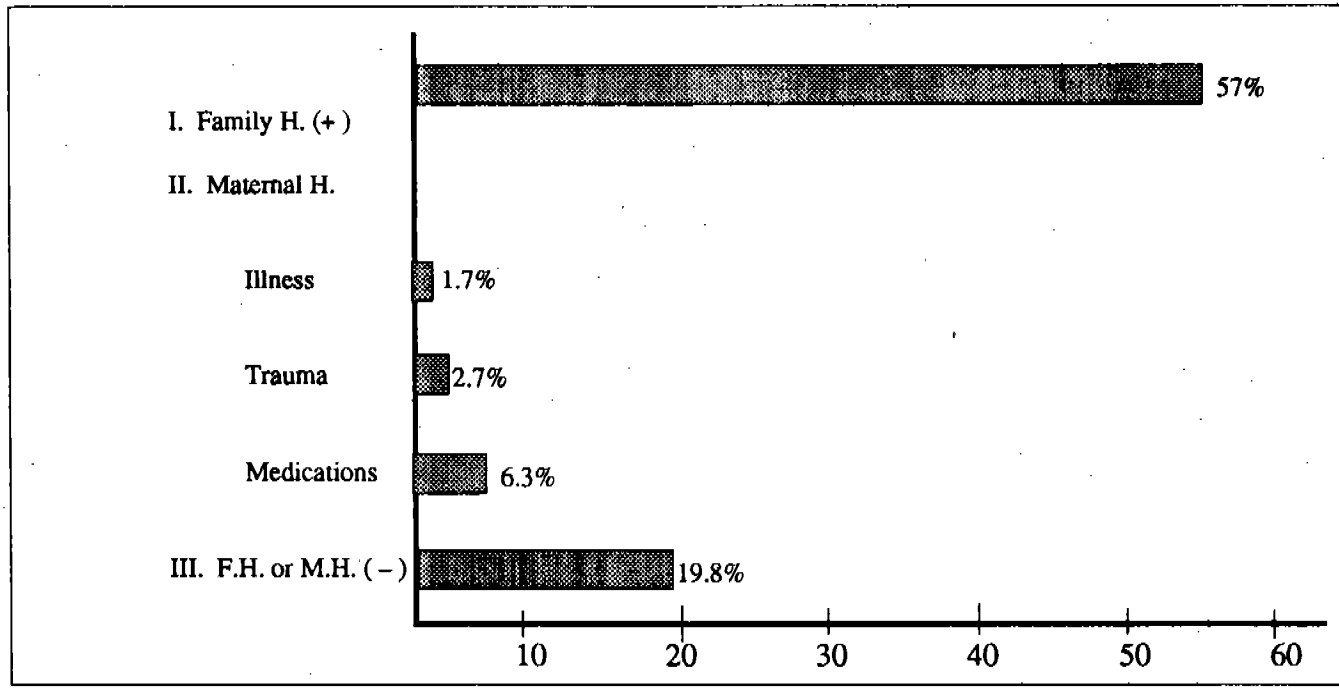
I. Family H. (+)
II. Maternal H.
Illness
Trauma
Medications
III. F.H. or M.H. (–)
57%
1.7%
2.7%
6.3%
19.8%
10
20
30
40
50
60

Fig. 3

UNIVERSITY OF THE PHILIPPINES
PHILIPPINE GENERAL HOSPITAL
DEPARTMENT OF OTOLARYNGOLOGY

TITLE: MICROBIAL FLORA IN CHRONIC OTITIS MEDIA: VALUE OF EAR ASPIRATE CULTURE STUDIES

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ABSTRACT

Culture and sensitivity studies on ear aspirate, cholesteatoma, bone and granulation tissue were done on 30 patients with chronic otitis media who underwent radical mastoidectomy. The most common organisms isolated were Proteus mirabilis,Proteus vulgaris and Pseudomonas aeruginosa. All three showed a 100% sensitivity to ampicillin, trimethoprim, chloramphenicol and cephalexin, Bacteroides, an anaerobic organisms, was grown in only 4/100 isolates. Cultures from the transcanal aspirates were compared to those obtained directly from the middle ear. Computation of the positive predictive value showed that the transcanal aspirate showed a good excellent correlation for the three most common organisms cultured.

INTRODUCTION

Chronic otitis media (COM) is a common problem encountered in the ENT clinic. It is an insidious and potentially destructive disease characterized by the presence of intractable mucosal, submucosal and/ or bone pathology of the middle cleft. In this institution, 60% of 269 ears operated on during the year 1989 were for chronically discharging ears. Inspite of the prevalence of the disease, antibiotic treatment is still largely empirical as a culture and sensitivity studies are not routinely done. One method of obtaining specimen for culture in the clinic is by transcanal aspiration of ear discharge. However, it is yet to be determined whether this method would be truly reflective of the microbial population of the middle ear.

A comparative study was done to compare the microbiology of the ear aspirate to the contents in the middle ear cleft namely, cholesteatoma, bone and granulation tissue. The organisms were likewise identified and the sensitivity pattern of the commonly isolated organisms were determined.

MATERIALS AND METHODS

Thirty patients with chronic otitis media, 20 males and ten females with age range 6-45 years (Table 1) seen at the ENT Dept. who underwent radical mastoidectomy were included in the study. Culture and sensitivity studies were done on ear aspirate, cholesteatoma, bone and granulation tissue specimens. Ear discharge was aspirated aseptically after the ear canal was swabbed with alcohol soaked cotton. The other specimens were collected intraoperatively. All were immediately placed in thioglycolate media. These were then inoculated in blood agar plate (BAP), and Mac Conkey agar plate. Incubation at 37 C for 24 hours was done after which the plates were read. Colonies were identified by their morphologic and biochemical characteristics. Antibiotic susceptability of the aerobic isolates to various drugs were tested using standard Kirby-Bauer method. For the anaerobic culture, the specimen from the thioglycote medium were inoculated in a fresh blood agar plate under gas Pak method. If the isolates were the same as those found in the aerobic culture, no further susceptibility studies were done. However if the colonies identified were the same as those found in aerobic culture, no further susceptibility studies were done. However if the colonies identified were

anaerobic they were reinoculated in thioglycolate media, restreaked in BAP and placed in an anaerobic jar for susceptibility studies.

TABLE 1. Age and Sex Distribution of COM Patients

AGE	MALE	FEMALE	TOTAL
0-5	0	0	0
6-10	8	1	9
11-15	1	5	6
16-20	3	2	5
21-25	1	1	2
26-30	1	0	1
31-35	5	0	5
36-40	0	0	0
41-45	1	1	2

RESULTS

The distribution of isolates obtained from the ear aspirate, cholesteatoma, bone and granulation tissue is shown in Figure 1. Single isolates were obtained in the majority of the specimens (67.5%). Mixed cultures were grown in 7.5% (9\120), while there was no growth in 5.0% (6\120).

Gram negative organisms were more commonly isolated compared to the Gram positive organisms (Figure 2). The microbiologic profile is shown in Table 2. Proteus mirabilis was the most commonly isolated organism in pure and mixed cultures regardless of whether the specimen was obtained from the ear aspirate, cholesteatoma, bone or granulation tissue (Table 3). This is followed by Proteus vulgaris and Pseudomonas aeruginosa. Staphylococcus aureus was the only gram positive organism cultures and was found in 7 isolates. There were only 4 anaerobic isolates and they belong to the Bacteriodes genus. The rest are distributed among Enterobacteriaciae.

The sensitivity pattern of the 3 most common organisms isolated namely Proteus mirabilis, Proteus vulgaris and Pseudomonas aeruginosa was determined. All three organisms showed a 100 % sensitivity to the quinolones (ciprofloxacin, ofloxacin, and norfloxacin). Among the aminoglycosides (netilmicin and gentamicin), there was likewise a 100% sensitivity except for a 6.3% resistance of Proteus mirabilis to Gentamicin. For the commonly used antibiotic in COM (ampicillin, trimethoprim, chloramphenicol, and cephalexin), there is a note of <80% sensitivity pattern, the ,lowest being for ampicillin at 59.5% for Proteus mirabilis and 13.3 % for Proteus vulgaris.

(Figures 3, 4 and 5).

Table 2. Microbiologic Profile of Specimens obtained from Patients with COM

ORGANISMS	PURE CULTURE	MIXED CULTURE	TOTAL
Proteus mirabilis	42	6	48
Proteus vulgaris	15	0	15
Pseudomonas aeruginosa	11	2	13
Staphylococcus aureus	5	2	7
Escherichia coli	3	0	3
Klebsiella sp.	3	0	3
Enterobacter agglomerans	0	3	3
Providencia sp.	1	1	2
Bacteroides sp	2	0	2
Bacteroides melaninogenicus	0	2	2
Klebsiella ozanae	1	0	1
Acinetobacter anitratum	0	1	1
Acinetobacter wolffi	1	0	1
Enterococcus	0	1	1

Table 3. Distribution of Organism by Specimen

ORGANISM	Ear aspirate	Granul'n tissue	Bone	Choles-teatoma	TOTAL
Proteus mirabilis	13	13	9	10	45
Proteus vulgaris	5	1	4	5	15
Pseudomonas aeruginosa	5	13	1	4	13
Staphylococcus aureus	2	2	2	1	7
Escherichia coli	1	0	1	1	3
Klebsiella sp.	1	0	0	2	3
Enterobacter agglomerans	1	0	1	1	3
Providencia	1	1	0	0	2
Bacteroides melaninogenicus	1	0	0	1	2
Bacteroides sp.	1	1	0	0	2
Klebsiella ozanae	0	1	0	0	1
Acinetobacter anitratum	0	0	1	0	1
Acinetobacter wolfii	0	0	0	1	1
Enterococcus sp.	0	0	0	1	1
No growth	**2**	**0**	**3**	**1**	**6**
No specimen	**1**	**7**	**10**	**6**	**24**

DISCUSSION

In any infectious disease, a clear understanding of the microbial population is necessary in order to choose the proper antibiotic. The microbial flora in chronically draining ears is constantly evolving such that regular surveilance cannot be overemphasized.

This study was conducted among COM patients who underwent radical mastoidectomy at the ENT Department. These patients had discharging ears for several years with an average of 5 years. Most of these patients however received penicillin and chloramphenicol (IV) prior to surgery. This was unavoidable as these patients had unsafe ears with potentials for intracranial complications.

The most common organisms grown in this study were Proteus mirabilis (45/100), Proteus vulgaris (15/100), Pseudomonas aeruginosa (13/100) and Staphylococcus aureus (7/100). These results were comparable to that found by other investigators (Table 4). However, it was noted that although the microbial flora has remained unchanged in the last two decades, the Proteus species has become more prevalent with Pseudomonas becoming less frequent.

TABLE 4. Types of Aerobic Microorganisms Isolated in COM.

AUTHOR	No. of Ears	Pseudomonas aeuruginosa	Proteus sp.	Staphylococcus aureus
Vizon, Torres (1969)	55	25.4%	18.2%	12.7%
Jokipii, et al (1977)	70	4.0%	8.0%	19.0%
Abes, Jamir (1978)	30	48.8%	16.3%	11.6%
Ojala et al (1981)	806	19.0%	12.9%	22.0%
Sugita et al (1981)	62	7.8%	21.1%	6.3%
Chiong et al (1989)	120	3.8%	35.8%	*****
Present study	**30**	**13.0%**	**63.0%**	**7.0%**

An antibiogram was constructed (Figures 3, 4 and 5) and it showed that for the three most common organisms, the quinolones are the most effective antibiotics. This may be due to the fact that this is a new drug and resistant strains have not yet developed. The use of ciprofloxacin has recently been underscored in a study by Picirillo (1989), considering that the drug is effective in a wide range of both gram positive and gram negative organisms. However, the use of this ciprofloxacin is not recommended for chidren nor as a first line drug in the management of COM. Gentamicin, which is commonly used otic solution, still has a good sensitivity (93.7%) for the organisms. The commonly prescribed oral antibiotics—ampicillin, trimethoprim, chloramphenicol and cephalexin showed a < 80% sensitivity pattern. This could probably be attributed to the administration of antibiotics intravenously or previous oral intake prior to the collection of specimens.

The role of anaerobic organisms in COM has been the subject of intensive investigation and speculation. The metabolism of facultative species in mixed infections, by lowering the local concentration of oxygen and reduction in oxidation-reduction potential, provides a suitable environment for the anaerobic pathogens. Sugita (1981) elaborates that because of the obstruction of air around the cholesteatoma there is a reduction of the partial pressure of oxygen with an inverse increase in carbon dioxide thus favoring anaerobic growth. Synergy between the negative bacilli particularly coliforms and Proteus and Bacteroides species have been reported (Ingham, 1977). In this study, there were four isolates of Bacteroides sp and in these two B. melaninogenicus was isolated together with Proteus mirabilis. Previous studies have cited the importance of anaerobic organisms in COM. The apparent low incidence of anaerobic infection in this study maybe due to several factors, most important of which is the inherent difficulty in isolating the organism.

It is a common practice to treat COM empirically. However when confronted with patients refractory to the usual medical management, as well as the significant potential for developing complications in such cases, culture and sensitivity studies maybe necessary in the proper management of COM. The question arises whether cultured specimens obtained from the external auditory canal would be reflective of those taken directly from the middle ear. Mackowiak (1978) cultured sinus tract drainage in patients with chronic osteomyelitis and found that if the culture was positive for Staphylococcus aureus, there was good correlation with culture reports of the operative specimens. However, if the culture of the sinus drainage was another organism,there was a poor correlation. Assuming that the same pattern exists in the middle ear cleft since there is a similarity in the organisms implicated, this might suggest that the specimen obtained from the external auditory canal may not be the same as those from the middle ear discharge with those taken intraoperatively eg. bone, cholesteatoma and granulation tissue. Computation of the predictive value of transcanal aspirates showed that there is good to excellent correlation for these organisms using the rating of agreement by Kappa statistics. This study specifically shows that when anyone of the three organisms is cultured, there is a positive correlation in 90% of cases. This finding may be very imporant in the clinical setting as the antimicrobial treatment of COM can be fairly accurately guided by doing transcanal aspiration of ear discharge alone.

TABLE 5. Correlation of Ear Aspirate with Operative Specimen Culture.

Ear aspirate	No. of Patients	Positive correlation	Negative correlation	Predictive value
P.mirabilis	29	29	0	100.0%
P.vulgaris	13	11	2	84.6%
P.aeuroginosa	10	7	3	70.0%

*Predictive value equals number of positive correlations times 100 divided by total number of patients.

SUMMARY

A study of 30 patients with COM who underwent radical mastoidectomy showed that the three most common organisms were Proteus mirabilis, Proteus vulgaris and Pseudomonas aeruginosa. The isolates obtained from the transcanal ear aspirate showed good excellent correlation with the operative specimens from the middle ear (bone, granulation tissue, cholesteatoma). The transcanal ear aspirate culture maybe valuable as a guide in the medical management of COM.

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Figure 2.

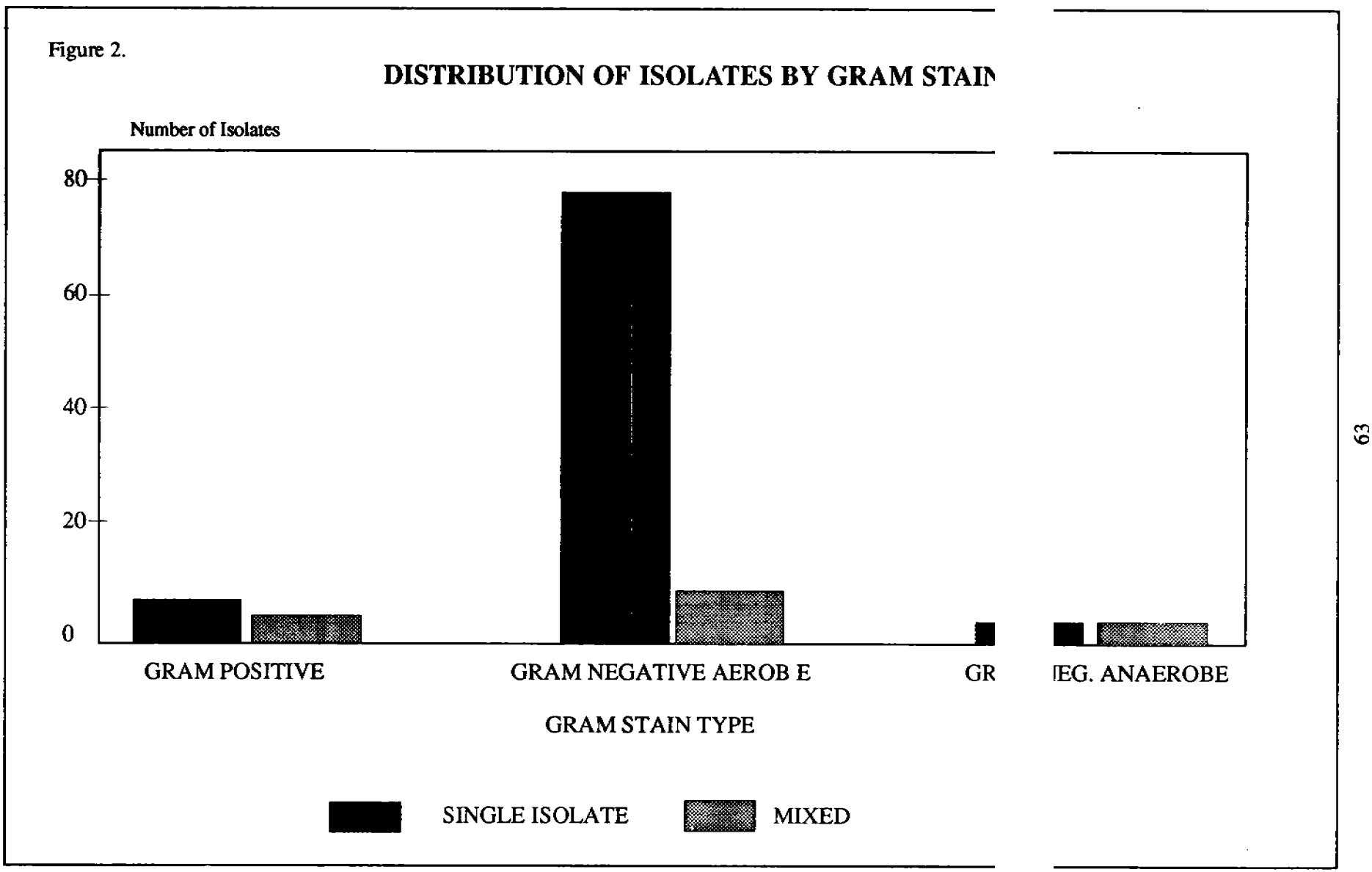
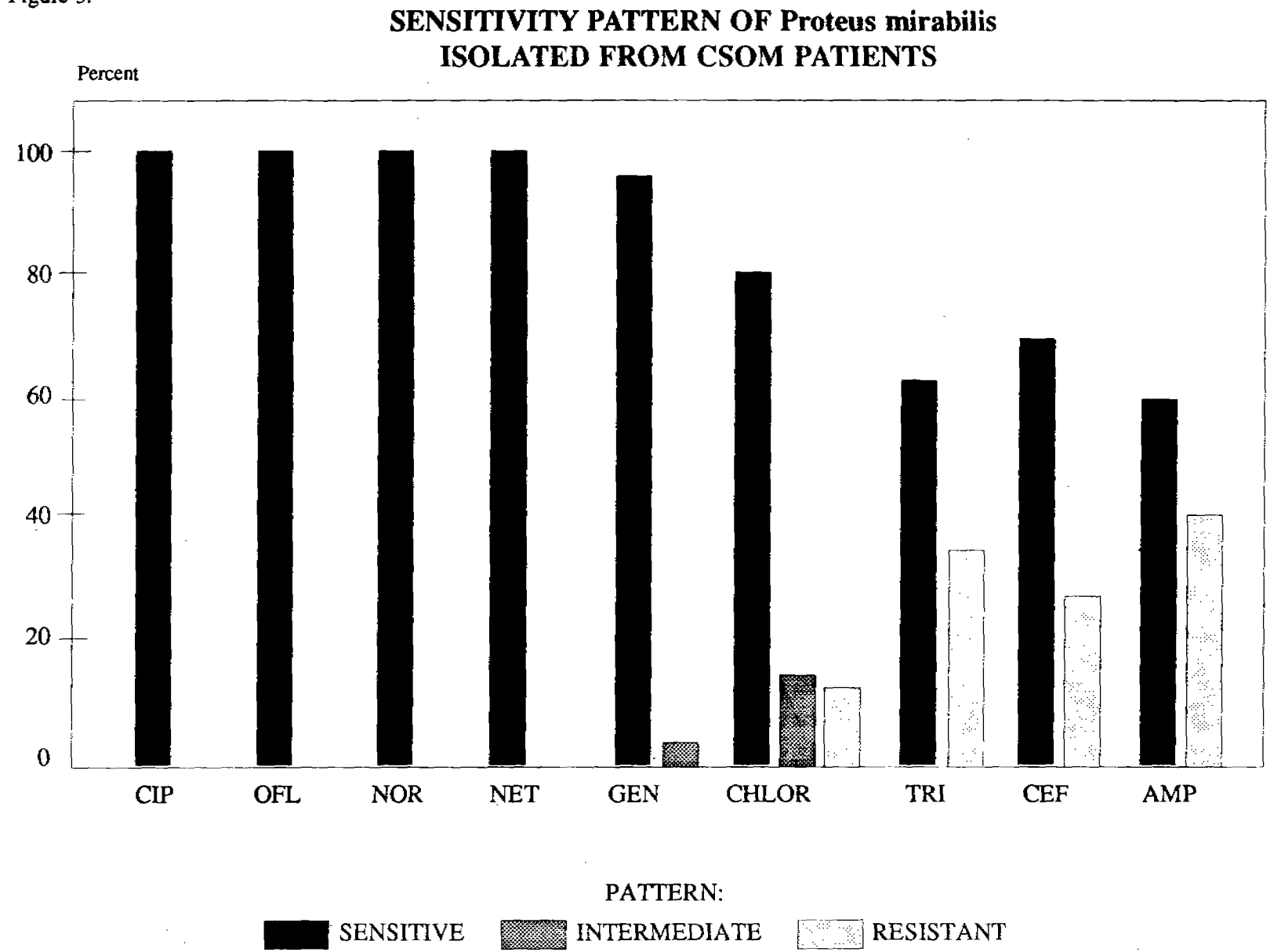

DISTRIBUTION OF ISOLATES BY GRAM STAIN
Number of Isolates
80
60
40
20
0
GRAM POSITIVE
GRAM NEGATIVE AEROB E
GR
EG. ANAEROBE
GRAM STAIN TYPE
SINGLE ISOLATE
MIXED

Figure 3.


SENSITIVITY PATTERN OF Proteus mirabilis
ISOLATED FROM CSOM PATIENTS
Percent
100
80
60
40
20
0
CIP
OFL
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TRI
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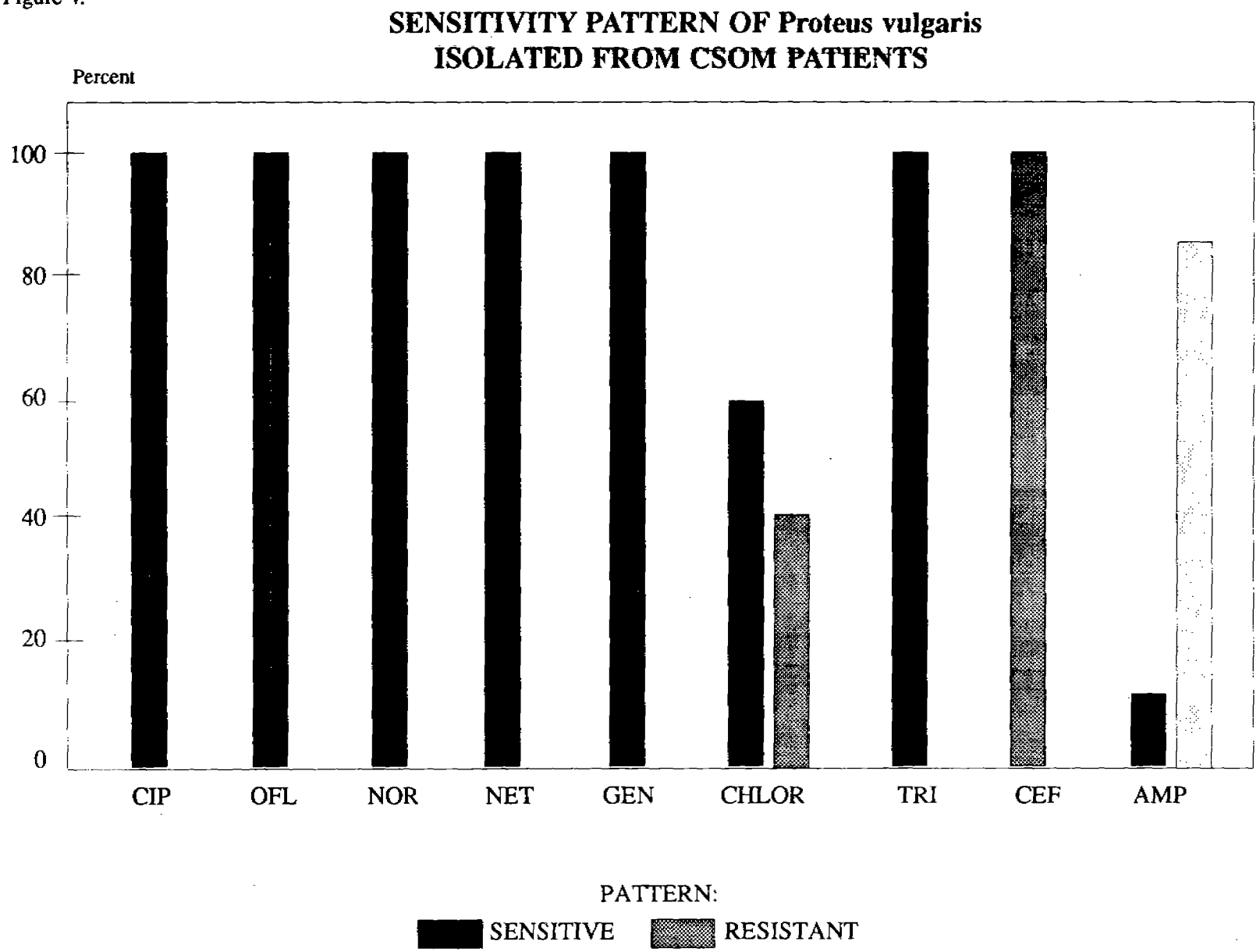
PATTERN:
SENSITIVE
INTERMEDIATE
RESISTANT

Figure 4.


SENSITIVITY PATTERN OF Proteus vulgaris
ISOLATED FROM CSOM PATIENTS
Percent
100
80
60
40
20
0
CIP
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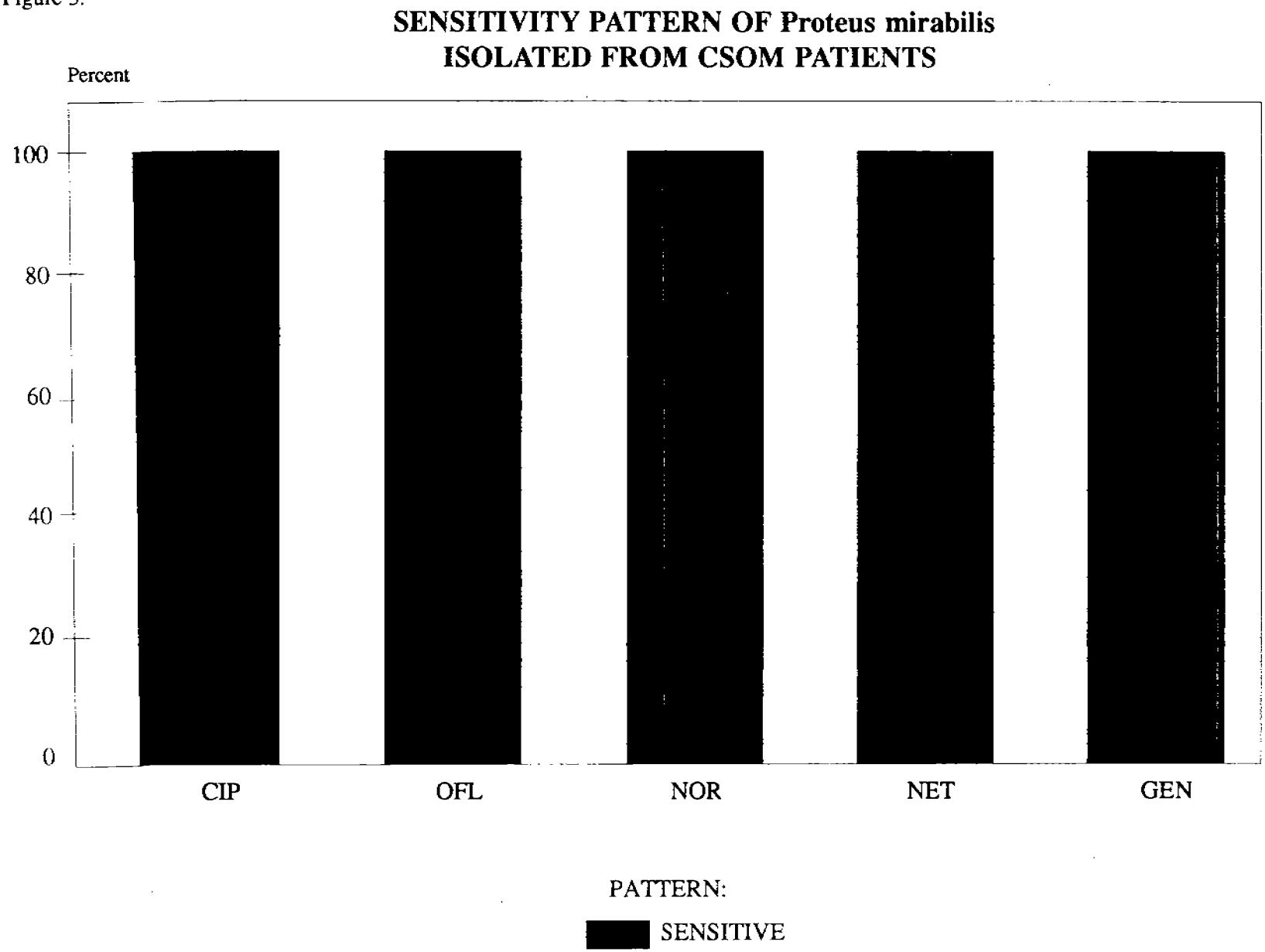
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UNIVERSITY OF THE PHILIPPINES
PHILIPPINE GENERAL HOSPITAL
DEPARTMENT OF OTOLARYNGOLOGY

TITLE : Randomized Clinical Trial on the Efficacy and Safety of Loratadine Versus Astemizole in Allergic Rhinitis

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INTRODUCTION

The management of allergic rhinitis involves environmental control, pharmacologic interventions, and allergen immunotherapy (1). In the Philippines, environmental control and allergen immunotherapy have yet to be proven effective and feasible. On the other hand, pharmacologic interventions, which entail the use of decongestants, antihistamines, corticosteroids, and cromolyn sodium, have helped patients, in coping with acute attacks.

Through the years, drowsiness or sedation was the most common complaint against antihistamines therapy. Since 1941, many H1 antihistamines have been introduced to provide antiallergic effect with minimal anticholinergic and sedative actions. One of these is astemizole, an orally potent highly selective antihistamine administered once a day. Various clinical studies have confirmed its efficacy and safety (2,3,4).

Loratadine is a newer long-acting, tricyclic antihistamine with selective peripheral H1-receptor antagonist activity. Like astemizole, it is also administered once daily. It has an added advantage of more rapid response and various clinical trials have confirmed its efficacy and safety (5,6,7).

This double-blind randomized clinical trial was conducted to compare the efficacy and safety of a 14-day course of loratadine with those of astemizole given to Filipino patients with allergic rhinitis.

MATERIALS AND METHODS

Study Design and Study Site

This double-blind randomized clinical trial was conducted at the Outpatient Section of the Department of Otorhinolaryngology, Head and Neck Surgery of the UP-PGH Medical Center from February to June, 1988.

Patient Section

Seventy patients with unequivocal history of allergen-induced rhinitis were recruited provided that they were more than 12 years of age and presenting with at least two of the following nasal symptoms: itchiness, stuffiness, discharge and sneezing affecting to a moderate degree (1.e., bothersome but not disabling or intolerable).

Excluded were pregnant or lactating patients, those with asthmas, those on allergen immunotherapy, or those receiving other anti-allergic drugs within the last six months. Patients with other significant current diseases or abnormal baseline laboratory tests results, those who have a known idiosyncratic reaction to antihistamines, and those who have taken any investigational drugs within one month prior to the start of this study were also excluded.

Interventions

After informed consent has been secured, the patients were randomly allocated to receive either

loradatine 10 mg/tablet given once a day for 14 days or astemizole 10 mg/tablet also given once daily for 14 days.

Evaluation Criteria

Patients daily filled out symptom diary cards to note the severity of symptoms according to the following scoring system:

O -	None:	No symptom evident
1 -	Mild:	Trivial; definitely present, but not bothersome
2 -	Moderate:	Bothersome, but not disabling or intolerable
3 -	Severe:	Disabling and/or intolerable

On the 3rd, 7th and 14th days of treatment, overall condition of rhinitis was evaluated by both the physician and patient using the following scheme:

O -	None:	Virtually no symptoms are evident
1 -	Mild:	Symptoms do not interfere with daily activities and/or sleep
2 -	Moderate:	Some interference with daily activities and/or sleep
3 -	Severe:	Significant/major interference with daily activities and/or sleep

Therapeutic response was also assessed by both the physician and subject according to the following evaluation scale:

1 -	Excellent:	Virtually all symptoms have been eliminated
2 -	Good:	Most symptoms are improved, but some symptoms are still listed as mild
3 -	Fair:	Some response, but most symptoms are still present
4 -	Failure:	Worse than pre-treatment baseline Failure:

To estalish the safety of either regimen, CBC, blood sugar, BUN, creatinine, total protein, alkaline phosphatase, SGCOT, SGPT, total bilirubin, and urinalysis were done prior to and on the last day of treatment. Side effects were noted on the symptom diary card and classified accordingly:

Mild:	Experience was considered trivial and did not cause the patient any real problem.
Moderate:	Experience was a problem to the patient, but did not interfere significantly with daily activities or the clinical status of the patient.
Severe:	Experience caused significant interference with normal daily activities or the clinical status of the patient.

The patient was deemed discharged from the study upon completion of the 14-day drug treatment, with the development of adverse reactions that prompted discontinuation of the assigned regimen, or with persistence of symptoms on the 4th day of treatment (failure of treatment).

Data Analysis

Baseline characteristics and outcome measures of those who received loratadine and those who received astemizole were compared using Mann-Whitney U test or t-test for quantitative variables and chi-square or Fisher's exact tests for qualitative variables. Differences in responses between groups and through time were evaluated using Friedman's 2-way ANOVA or McEmnar's test.

RESULTS

Seventy allergic rhinitis patients participated in this study. Patient #32, allocated to receive loratadine, was excluded because of abnormally high baseline level of serum alkaline phosphatase. Another 10 were excluded because of failure to comply with the assigned regimen.

PRE-INTERVENTION GROUP COMPARISON

Baseline analysis showed that the two groups were comparable in the absence of exposure to immunotherapy, in demographic characteristics, in physical examination and rhinoscopic findings. Except for a significantly longer duration of seasonal allergic rhinitis among those on loratadine, reveiw of medical hsitory showed no other clinically important differences (Table I).

INTERVENTION COMPLIANCE

All 59 ptients took their medications daily for 14 days.

OUTCOME GROUP COMPARISONS

I. Efficacy

A. The physicians' evaluation of signs and symptoms during the course of treatment was compared between the two groups.

TABLE 1: BASELINE GROUP COMPARISONS

	LORATADINE	ASTEMIZOLE	p VALUE
Demographic			
1. mean age (yrs)	26.7 +-1	25.7+-1	0.13
2. weight (lbs)	124.9+-1	21.9+4	0.64
3. height (cm)	160.4+-11	60.0+-1	0.81
4. male:female	16:13	17:13	0.79
Medical History			
1. mean duration of seasonal allergic rhinitis (yrs)	9.3+-1	5.2+-0	0.01
2. mean number of episodes of seasonal allergic rhinitis	7.2+-2	8.0+-2	0.74
3. mean duration of current episode (days)	7.4+-2	7.5+-1	0.93
4. perennial allergic rhinitis	20 (69%)	21 (70%)	0.95
Screening rhinoscopy findings:			
1. NASAL MEMBRANE			
pale & boggy	25 (86%)	25 (83%)	0.97
erythematous	4 (14%)	5 (17%)	
2. NASAL PATENCY			
partially occluded	27 (94%)	29 (97%)	0.49
totally occluded	1 (3%)	1 (3%)	
normal	1 (3%)	0	
3. NASAL SECRETIONS			
thin watery	18 (62%)	19 (63%)	0.55
mucoid	11 (38%)	10 (34%)	
4. QUANTITY OF NASAL SECRETIONS			
slight to moderate	17 (59%)	20 (67%)	0.54
minimal	9 (31%)	7 (23%)	
copious	3 (10%)	2 (7%)	
none	0	1 (3%)	

1. Severity of Symptoms

a. Among those on loratadine, there was significant resolution of the severity of nasal discharge, nasal stuffiness, nasal itchiness, and sneezing. Improvements in all of these started to occur after visit 1 ($p<0.001$ on Friedman 2-way ANOVA) and all patients improved with each visit until the last. No significant improvement was observed with itching eyes (Friedman statistic $p=0.29$), tearing (Friedman statistic $p=0.39$), and itchiness of the ears or palate (Friedman statistic $p=0.30$).

b. Among those on astemizole, significant (Friedman statistic $p<0.001$) resolution of the severity of nasal discharge, nasal stuffiness, nasal itching, and sneezing were likewise observed starting day 3 of treatment. Significant improvements were also noted with relief of itchy/burning eyes (Friedman statistic $p=0.04$), teary eyes (Friedman statistic $p=0.002$), and itchy ears or palate (Friedman statistic $p=0.04$).

2. McNemar's test showed significant improvement in the rhinoscopic examination findings at the end of the treatment of patients on loratadine (Table II). Except for nasal patency, there were no similarity significant improvements in the rhinoscopic findings among those on astemizole.

3. Comparison of the physicians' assessment of the overall condition of rhinitis showed significant (Friedman statistic $p<0.001$) improvement among those on loratadine and those on astemizole (Figure I).

4. The physicians' assessment of overall response to the assigned regimen were rated fair to excellent (Figure II). Friedman 2-way ANOVA showed that a significant improvement ($p=0.02$) was obtained among those on loratadine. No such improvement (Friedman statistic $p=0,14$) was noted among those on astemizole.

B. The patients' evaluation of signs and symptoms during his course of treatment were also compared.

1. Review of diary entries showed significantly earlier improvement (Friedman statistic $p=0.001$) in the nasal symptoms of those on loratadine compared to those on astemizole. Resolution of nasal discharge and nasal therapy and on the 7th day of astemizole treatment. Nasal itchiness was relieved on the 2nd day of loratadine and on the 5th day of astemizole therapy. Similarly, sneezing was absent in 50% of those on their 3rd day of loratadine and in a similar proportion of those on their 6th day of astemizole.

TABLE II. RHINOSCOPIC FINDINGS AT END OF TREATMENT and MCNEMAR'S p VALUE FOR PATIENTS ON LORATADINE AND ASTEMIZOLE

	LORATADINE	P value	ASTEMIZOLE	P value:
NASAL MEMBRANE				
normal	11 (38%)	<0.001	10 (33%)	0.48
pale & boggy	15 (50%)		13 (43%)	
erythematous	1 (3%)		1 (3%)	
pale	2 (7%)		4 (14%)	
NASAL PATENCY				
normal	21 (72%)	<0.001	20 (66%)	<0.01
partially occluded	8 (24%)		8 (27%)	
totally occluded	1 (3%)		2 (7%)	
NASAL SECRETIONS				
not present	21 (72%)	0.034	22 (73%)	
thin watery	8 (28%)		3 (10%)	
mucoid	3 (10%)		3 (10%)	
QUANTITY of NASAL SECRETIONS				
none	19 (65%)	0.025	20 (67%)	
slight to moderate	7 (24%)		7 (23%)	
minimal	3 (10%)		1 (3%)	
none	0		1 (3%)	

2. Both groups showed significant (Friedman statistic p=0.001) improvement in the overall condition of rhinitis with the most marked change noted on day 3 of treatment (Figure III).

3. According to the patients' evaluation of overall response to treatment, those on loratadine as well as those on astemizole reported significant (Friedman statistic p=0.05) improvement in response rated as fair to excellent starting on Day 3 (Figure IV).

II. Safety

A. Routine Physical Examination and Laboratory Studies

There were no significant changes between Day 0 and Day 14 with regards to body temperature, pulse rate, respiratory rate, systolic and diastolic blood pressure, weight, urinalysis, glucose, BUN, serum creatinine, total protein, alkaline phosphatase, SGOT, SGPT, total bilirubin, hemoglobin, hematocrit, RBC count, WBC differential counts and counts.

B. Adverse Effects

The few adverse effects were reported in equal frequencies among those on loratadine and on astemizole (Table III). Thse complaints were all of the mild to moderated severity with majority of the incidences possibly or probably related to the treatment regimen

DISCUSSION

Like the previous studies done abroad (2-5, 9-10), this randomized clinical trial conducted locally has demonstrated the effectiveness of both loratadine and astemizole in the treatment of allergic rhinitis. Both drugs were proven to be as efficacious as the non-sedating antihistamines like mequitazine and terfenadine (6,7,15) and both have been recommended because of their once a day dosage which ensures better patient compliance.

As in other comparative studies between loratadine and astemizole, loratadine-treated Filipino ptients had significantly earlier relief of symptoms than those treated with astemizole. More significant improvement by the third day of therapy was observed among those on loratadine than among those on astemizole. This concurs with previous studies, wherein partial relief of symptoms was observed as early as within 4 hours of first treatment with loratadine (10,11).

The relief of ocular symptoms (itching and tearing) has been reported to be better with astemizole over terfenadine and clemastine (12,13). Our study shows the same advantage of astemizole over loratadine.

The unpleasant and undesirable effects of antihistamines have been somnolence, sedation, insomia and anticholinergic action. In an earlier long-term safety study among normal male volunteers

TABLE III: ADVERSE EFFECTS REPORTED

	Day 3		Day 7		Day 14	
Symptoms	**Lor**	**Ast**	**Lor**	**Ast**	**Lor**	**Ast**
Dizziness	3	1	2	1	5	0
Chest pain/body weakness	1	1	0	1	0	1
Light Headedness	0	1	0	1	1	1
Sedated	2	1	1	1	0	1
Nape pain	1	0	2	0	0	1
Difficulty of Swallowing	0	2	0	0	0	0

Lor=Loratadine; Ast=Astemizole

receiving 40 mg of loratadine daily for 13 weeks, tolerance was good and there were no unusual clinical changes in laboratory test values, electrocardiograms, and physical examinations (14). The only drug-related side effect reported were hiccup and headaches. The side effects of fatigue, sedation headache, and dry mouth were noted in previous clinical studies using loratadine at a dose 10 mg OD. These, however, occurred in the placebo and comparative groups at approximately the same frequencies (5,6,7,11). Such was true also for the Filipino patients included in this trial.

In clinical studies with astemizole, sedation of varying degrees has been reported (13,15,16). Sooknundun, et al (3) reported drowsiness in three of his patients persisting one week after the six-week trial period while another patient, a neurologist, has persistent drowsinees up to 3 days after discontinuation of astemizole. These observations point to adverse cumulative effect of a long half-life (10 hours) for astemizole. After Richards et al observed a half-life of twelve days or longer for astemizole (17), Simons et al endorsed that, in general, antihistamines should be given only once during its half life (18). If given more often, significant accumulation of the drug may occur.

Loratadine is expected to cause less sedation since it has been shown to have a greater affinity for the peripheral H1 receptors than for central H1 receptors (8). This dimished penetration into brain tissue accounted for the absence of daytime sedation among those on loratadine compared to those on diphenhydramine (19).

CONCLUSION

This locally conducted double-blind randomized clinical trial has shown that loratadine 10 mg per orem per day is as effective as astemizole given 10 mg per orem per day for the treatment of allergic rhinitis. However, loratadine showed a faster onset of relief in contrast to astemizole. There were no significant differences in the side effects noted among the patients on loratadine and on astemizole.

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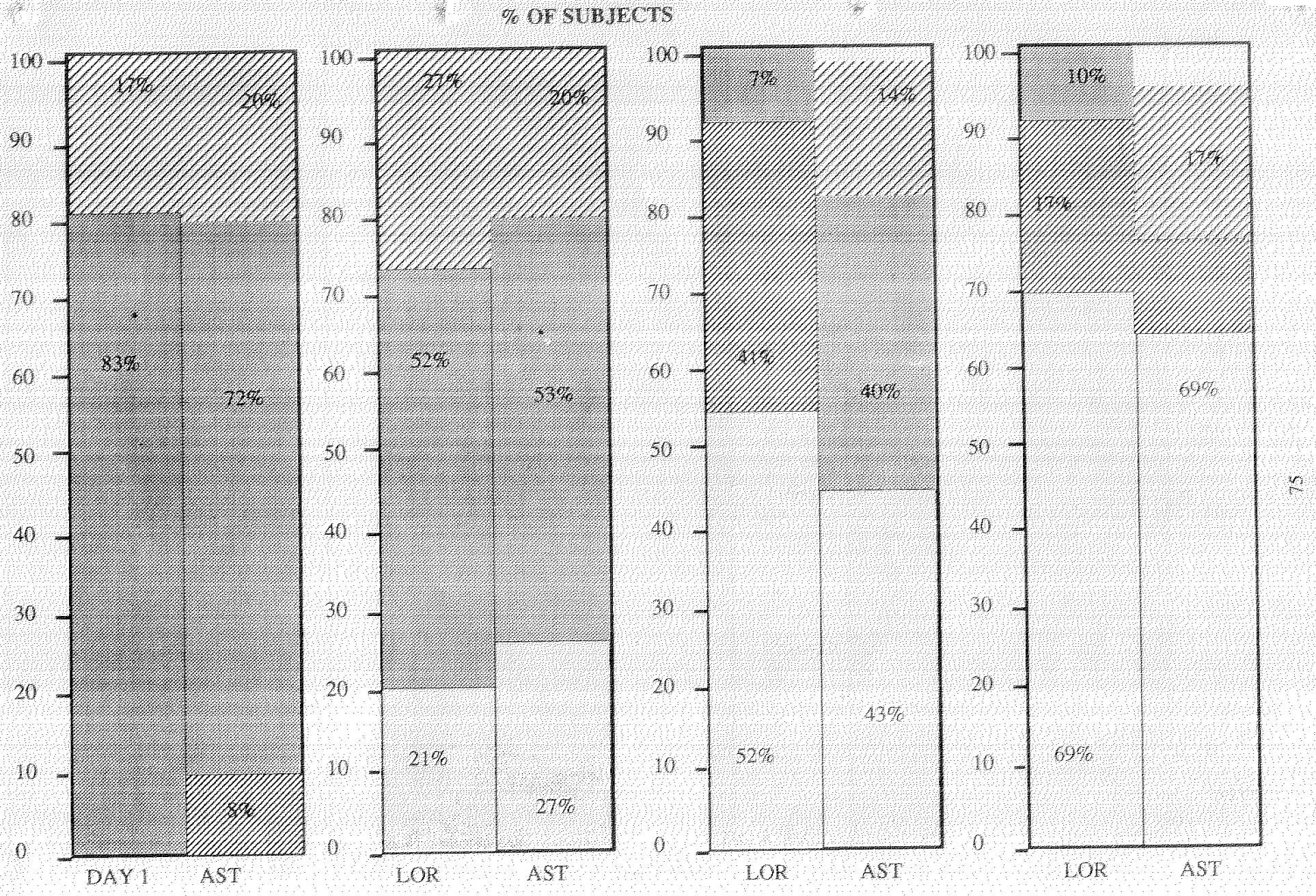
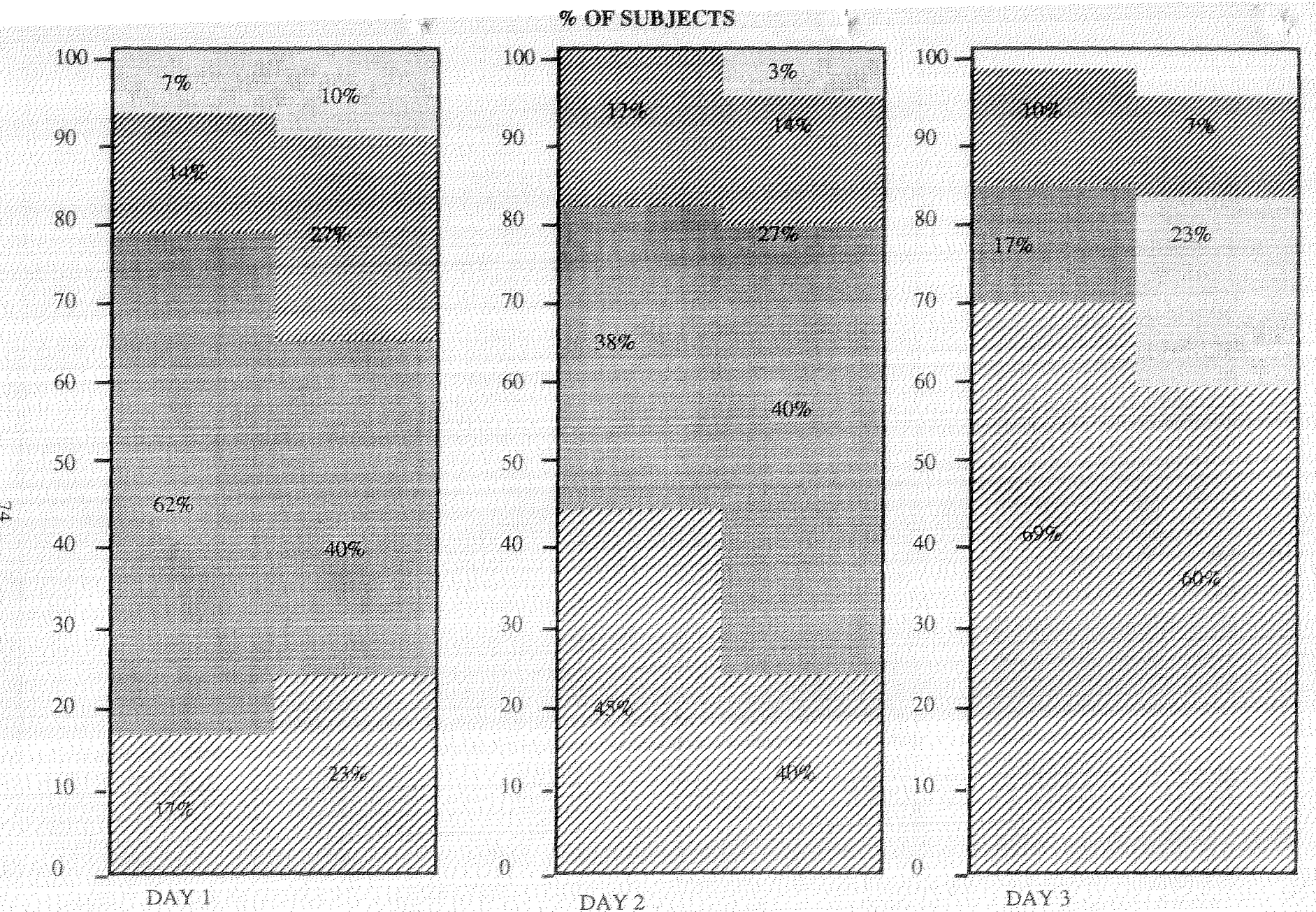


Figure II: Physicians' Assessment of Response to Therapy



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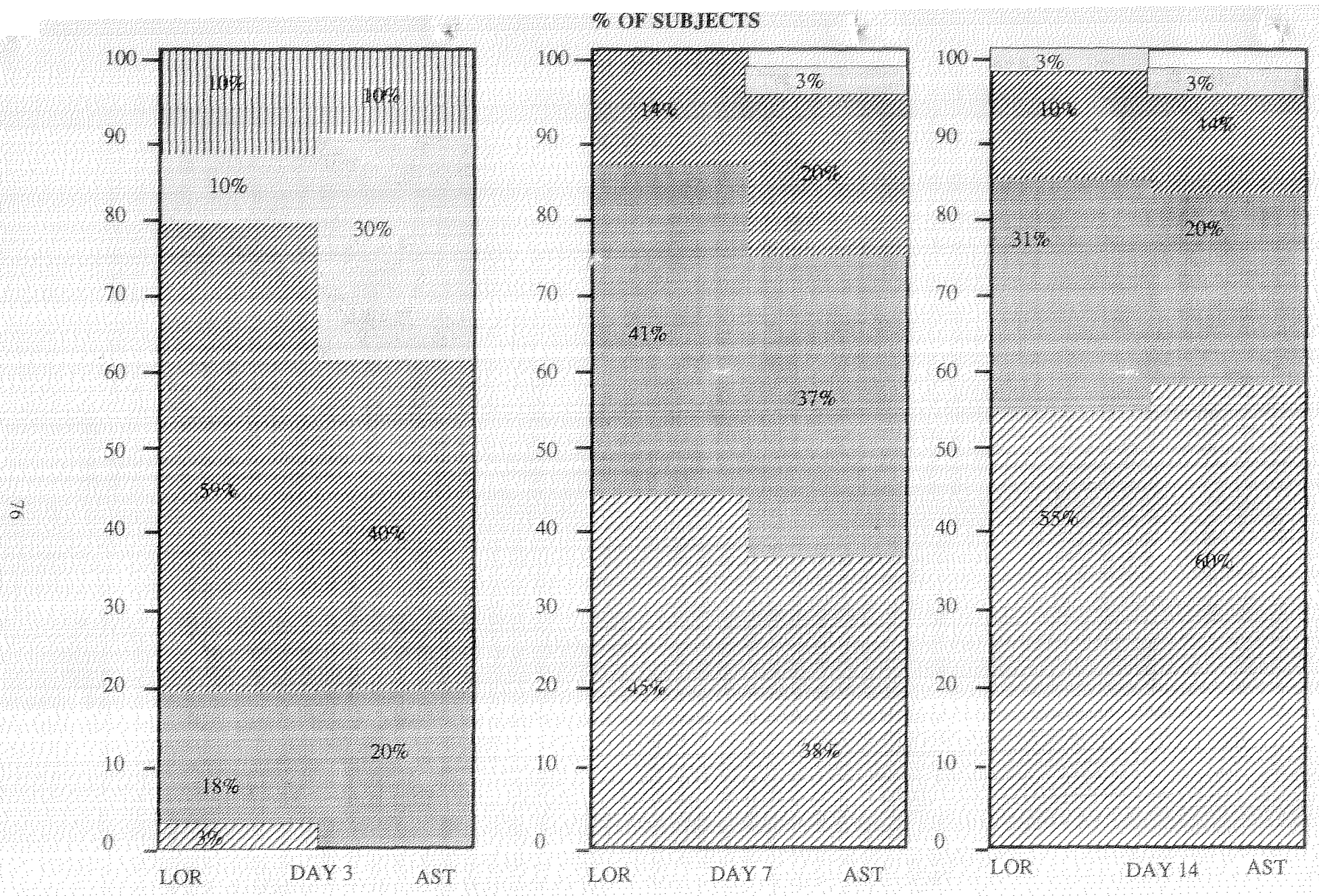

Figure II: Physicians' Assessment of Response to Therapy

An Evaluation of the Efficacy, Tolerance and Safety of Loratadine-D vs. Actifed in Acute Rhinitis

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ABSTRACT

A randomized single blind comparative controlled study of the efficacy, tolerance and safety of Loratadine 10 mg. plus Pseudoephedrine against Actifed was conducted in 60 cases of acute rhinitis with an allergic overlay as derived from the history. The comparison was based on both a subjective assessment by the patient and the objective evaluation of the physician. Based on these results, Claritin-D has been shown superior to Actifed in terms of : 1) improving the signs and symptoms of acute rhinitis, 2) bringing faster relief of the miserable symptoms, and 3) good tolerance and lesser side effects especially drowsiness.

INTRODUCTION

Classical antihistamine and antihistamine-decongestant combination are widely used for the treatment of acute rhinitis. It is recognized that these drugs do not shorten course of acute rhinitis. However, these drugs, together with some other measures taken, may be able to prevent the onset of a common cold (this is beyond the scope of this paper). Usually, in acute rhinitis, these drugs provide relief for the patients suffering from signs and symptoms which we are making miserable. The main problems that prevent their use in some patients are excessive sedation or drowsiness and anticholinergic properties (dryness of the mouth, blurring vision, urinary retention,etc.).

In recent years, newer non-sedating antihistamines have been developed that do not readily enter the central nervous system or interact with neuroceptors associated with sedation, or concentrate in the brain, thereby producing fewer undesirable effects. One such preparation is a combination of Loratadine, a potent non-sedating and long acting H1 antagonist, plus pseudoephedrine. Loratadine is a piperous compound related to azatadine. It is relatively specific in blocking peripheral receptors with very little H2 receptor antagonism. Loratadine is virtually devoid of sedating or other central nervous system side effects due to its inability to penetrate the blood brain barrier. Its duration of action is about 15-16 hours. This study describes the efficacy, tolerance and safety of Loratadine-D (Loratadine plus decongestant) in comparison with Actifed in relieving the signs and symptoms of acute rhinitis.

OBJECTIVE

The objective of this study is to compare the efficacy, tolerance and safety of Claritin-D (Loratadine plus Decongestant in combination) vs. Actifed in the treatment of the acute rhinitis.

Materials and Methods

This is a randomized single-blind comparative controlled study of the efficacy, tolerance and safety of the use of Claritin-D vs. Actifed in a short term treatment of 60 cases of acute rhinitis who have never taken any other medication for their illness. This cases are divided into 2 groups of 30 cases each, one receiving Claritin-D and another receiving Actifed. The Claritin-D group is given the medication every 12 hours or 2 times a day, whereas the Actifed group is given the medication every 8 hours or 3 times daily.

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These patients are new patients seen in the clinic for acute rhinitis, and after taking the clinical history, vital signs and complete proper ENT examinations, an informed consent is obtained. Proper advice and precautions are given. Laboratory examination performed are: CBC, Urinalysis, BUN, Serum creatinine, Total bilirium, SGOT, SGPT and Alkaline phosphatase. Patients are then given medication good for 3 days in an envelope, and are advised how to take them and when to return for follow-up examinations and treatment. Patients are given a symptom diary card and are advised on how to record his sypmtoms after taking the medicine. The card is returned on the 1st follow-up visit (3days later). When the patients return for the first follow-up treatment, vital signs and the clinical history concerning the improvement of their symptom and any adverse effects are taken and verified. Another ENT check-up is done, and another envelope of medicines good for 4 days is given to each patient. The patients are instructed to return after 4 days for 2nd follow-up visit. After 4 days, the patients returned and same procedure is performed, and finally the patient is given an envelope of medicines good for 7 days with a symptom diary card. The patient is advised to return after one week for final (3rd follow-up visit) clinical evaluation. After this is dsone, repeat laboratory examination: CBC, urinalysis, BUN, serum creatinine, total bilirubin, SGOT, SGPT and alkaline phosphatase are performed.

Selection of patients: (1) patients of either sex should be above 12 years of age; (2) patients should be available to record their daily symptoms on the symptom diary card; (3) female patients must not be pregnant or lactating; (4) patients must have an unequivocal history of acute rhinitis; (5) patients with alllergic overlay must not be receiving any immunotherapy; (6) patients should not have any other serious illnesses or hypertension; (7) patients should not have any abnormal laboratory test results; (8) patients must not be allergic to any antihistaminic preparation; and (9) patients should not be taking any other antihistamine, decongestant or any other investigational drugs at least for one month before this investigation.

The recording is done as follows: (See Table I & Table II)

Table I

Grading of Nasal Symptom Scores

0 = No symptoms; normal feeling
1 = Mild symptoms; slightly bothersome
2 = Moderate symptoms; bothersome but tolerable
3 = severe and intolerable

Table II

Rating Score for Therapeutic Response to Treatment

1 = excellent; all symptoms are relieved
2 = Good; most symptoms are very much improved but still mildly present
3 = Fair; some improvement but more symptoms are still present
4 = Poor; minimal improvement or no improvement at all

Statistical analysis is done by unimpaired t-test for continuous variables and chi-square for nominal variables to compare baseline and post-treatment parameters between the 2 treatment groups. Friedman 2-way Anova for ordinal data to detect within group change in each treatment and Mann-Whitney for ordinal data to detect between treatment change.

Results

A total of 60 patients were studied. Nine males and 21 females were included in the Actifed group, while 8 males and 22 females were studied in the Claritin-D group. No statistical difference between the two groups was observed. (See Table III)

Table III

Sex Distribution of Patients

	Actifed	Claritin-D	
Male	9	8	
Female	21	22	p = 0.77
Total	30	30	

The mean age, mean weight and mean height of the two groups of patients are shown together in one table (Table IV). The differences between two groups are statistically insignificant.

The baseline or initial rhinoscopic findings are shown in Table V, and the baseline initial signs and symptoms are shown in Table IV

Table IV

Age, Weight and Height Distribution

	Actifed	Claritin-D	
Mean Age, S.D.	27.22,+- 9.19	26.2,+- 5.89	p=0.28
Range	14-56	19-41	
Mean Weight, S.D.	54.28+- 10.83	52. 23,+-6.2	p=0.19
Range	30-75	40-67	
Mean Height	159.17,+- 8.13	158.75,+- 7.66	p=0.42
Range	142-175	144-172	

Table V

Baseline Rhinoscopic Findings

		Actifed	Claritin-D	
1.	Nasal Mucosa:			
	Normal appearance	5	9	
	Pale with or without bogginess	7	8	p=0.16
	Erythematous	18	13	
2.	Nasal Airway:			
	Normal or good	0	0	
	Partial occlusion	21	23	p=0.56
	Total occlusion	9	7	
3.	Nasal Discharge:			
	Absent	0	0	
	Serous to Mucoid	24	23	p=0.76
	Mucopurulent	6	7	
4.	Amount of Nasal Discharge:			
	None	0	0	
	Minimal	0	0	
	Moderate	12	10	p=0.59
	Profuse	18	20	

Table VI

Baseline Signs and Symptoms

		Actifed	Claritin-D	
1.	Nasal Discharge:			
	Moderate	2	2	
	Severe	28	28	p=1.00
2.	Nasal Stuffiness:			
	Moderate	4	2	
	Severe	26	28	p=0.39
3.	Nasal Itchiness:			
	None	3	5	
	Mild	3	3	p=0.76
	Moderate	10	8	
	Severe	14	14	
4.	Sneezing:			
	None	0	2	
	Mild	2	2	
	Moderate	5	5	p=0.48
	Severe	23	21	
5.	Itching/Burning Eyes:			
	None	11	17	
	Mild	8	3	
	Moderate	8	7	p=0.30
	Severe	3	3	
6.	Tearing/Watery Eyes:			
	None	13	13	
	Mild	6	6	
	Moderate	8	8	p=1.00
	Severe	3	3	
7.	Redness of Eyes:			
	None	25	26	
	Mild	3	2 p	=0.74
	Moderate	2	2	
	Severe			
8.	Ithchiness of Ears/Palate			
	None	19	22	
	Mild	6	2	
	Moderate	5	3	p=0.66
	Severe	0	3	
9.	Sore Throat:			
	None	2	2	
	Mild	25	19	p=0.06
	Moderate	1	2	
	Severe	2	7	

10. Phlegm in the Throat			
None	0	2	
Mild	0	0	p=0.48
Moderate	9	9	
Severe	21	19	
11 Post-Nasal Drip:			
None	0	1	
Mild	0	0	p=0.38
Moderate	9	11	
Severe	21	18	
12. Cough:			
None	10	10	
Mild	11	11	p=1.00
Moderate	5	5	
Severe	4	4	
13. Headache:			
None	7	6	
Mild	10	8	p=0.29
Moderate	9	7	
Severe	4	9	
14. Sedation or Drowsiness:			
None	30	29	
Mild	0	0	p=0.32
Moderate	0	1	
Severe	0	0	
15. Dizziness:			
None	30	29	
Mild	0	0	p=0.32
Moderate	0	1	
Severe	0	0	
16. Palpitation:			
None	29	30	
Mild	1	0	p=0.32
Moderate	0	0	
Severe	0	0	
17. Nervousness:			
None	30	30	
Mild	0	0	
Moderate	0	0	
Severe	0	0	
18. Inability to sleep:			
None	15	14	
Mild	7	6	
Moderate	8	8	
Severe	0	2	
19. Inability to Wake-up			
None	30	29	
Mild	0	1	p=0.32
Moderate	0	0	
Severe	0	0	

The following Table VII will show the baseline evaluation by the physician or investigator of the acute rhinitis in the patients.

Table VII

Acute Evaluation of Acute Rhinitis by Physician

	Actifed	Claritin-D	
None	0	0	
Mild	0	0	p=1.00
Moderate	30	30	
Severe	0	0	

Table VIII shows the comparison of the signs and symptoms of these patients during the various scheduled follow-up visits to the clinic.

Table VIII
Comparison of the Signs and Symptoms of Follow-up Visits

	Actifed				Claritin-D				
	V1	V2	V3	V4	V1	V2	V3	V4	
1. Nasal Dischage:									
None	0	11	1	4	16	0	14	18	28
Mild	0	10	7	3	0	11	10	2	
Moderate	2	4	3	3	2	3	1	0	p=0.0158
Severe	8	5	1	1	28	2	1	0	
		P<0.0001				P<0.0001			
2. Nasal Stuffiness:									
None	0	14	14	15	0	13	18	27	
Mild	0	7	7	7	0	13	10	2	p=0.0588
Moderate	4	5	4	0	2	1	2	1	
Severe	26	4	0	1	28	3	0	0	
		P<0.0001				P<0.0001			
3. Nasal Itchiness:									
None	3	23	23	21	5	21	27	29	
Mild	36	2 2	3	9 2	1				
Moderate	10	1	0	0	8	0	0	0	p=0.3047
Severe	14	0	0	0	14	0	1	0	
		P<0.0001				P<0.0001			
4. Sneezing:									
None	0	15	19	16	2	21	25	29	
Mild	2	10	5	6	2	7	4	1	
Moderate	5	5	1	1	5	2	0	0	p=0.0059
Severe	23	0	0	0	21	0	1	0	
		P<0.0001				P<0.0001			
5. Itching Eyes:									

None	11	28	24	23	17	28	28	30	
Mild	8	2	1	0	3	2	1	0	
Moderate	8	0	0	0	7	0	0	0	
Severe	3	0	0	0	3	0	1	0	
		P=0.0010				P=0.0271			
6. Tearing Eyes:									
None	13	29	24	23	13	28	28	30	
Mild	6	1	1	0	6	1	1	0	
Moderate	8	0	0	0	8	1	0	0	p=0.3173
Severe	3	0	0	0	3	0	0	0	
		P=0.00110				P=0.0271			
7. Redness of Eyes:									
None	25	30	25	23	26	30	29	29	
Mild	3	0	0	0	2	0	1	1	
Moderate	2	0	0	0	2	0	0	0	p=.3173
Severe	0	0	0	0	0	0	0	0	
		P=0.5600				P=0.7900			
8. Itchiness of Ears/Palate:									
None	19	30	25	23	22	29	29	30	
Mild	6	0	0	1	2	1	1	0	
Moderate	5	0	0	0	3	0	0	0	p=.3173
Severe	0	0	0	0	3	0	0	0	
		P=0.950				P=0.2000			
9. Sore Throat:									
None	2	2	22	20	2	23	27	29	
Mild	25	25	3	2	19	3	2	1	
Moderate	1	1	0	0	2	2	1	0	p=0.2969
Severe	2	2	0	1	7	2	0	0	
		P=0.7750				P=0.0839			
10. Phlegm in the Throat:									
None	0	9	11	16	2	7	17	27	
Mild	0	12	12	5	0	18	10	2	
Moderate	9	5	1	1	9	2	2	1	p=0.0179
Severe	21	4	1	1	19	2	1	0	
		P<0.0001				P<0.0001			
11. Post-Nasal Drip:									
None	0	12	15	16	1	9	19	27	
Mild	0	11	8	6	0	17	8	3	
Moderate	0	4	2	0	11	2	2	0	p=0.0144
Severe	21	3	0	1	18	2	2	0	
		P<0.0001				P<0.0001			
12. Cough:									
None	10	22	19	19	10	20	26	30	
Mild	11	6	6	3	11	7	2	0	
Moderate	5	1	0	0	5	0	2	0	p=0.0402
Severe	4	1	0	0	4	2	0	0	
		P=0.0033				P=0.00197			
13. Headache:									
None	7	5	20	22	6	18	26	30	
Mild	10	0	4	0	8	9	3	0	
Moderate	9	4	1	1	7	0	0	0	p=0.0402
Severe	4	1	0	0	9	2	1	0	
		P=0.0005				P=0.0001			

14. Drowsiness:									
None	30	2	4	10	29	23	27	29	
Mild	0	0	5	5	0	5	3	1	
Moderate	0	17	12	6	1	1	0	0	p=0.0001
Severe	0	11	4	2	0	0	0	0	
		P=0.0015				P=0.7088			
15 Palpitation:									
None	29	27	22	22	30	2	6	28	28	
Mild	1	2	2	1	0	3	2	2	
Moderate	0	1	1	0	0	1	0	0	p=1.000
Severe	0	0	0	0	0	0	0	0	
		P=0.9695				P=0.7985			
16. Nervousness:									
None	30	28	23	22	30	28	28	28	
Mild	0	1	1	1	0	2	2	2	
Moderate	0	1	1	0	0	0	0	0	p=1.000
Severe	0	0	0	0	0	0	0	0	
		P=0.9679				P=1.000			
17. Inability to Sleep Normally:									
None	15	28	24	22	14	25	27	28	
Mild	7	0	0	1	6	2	1	1	
Moderate	8	2	1	0	8	2	1	0	p=0.5440
Severe	0	0	0	0	2	1	1	1	
		P=0.0128				P=0.0052			
18. Inability to Wake-up in A.M.:									
None	30	21	22	21	29	29	30	30	
Mild	0	1	0	0	1	1	0	0	
Moderate	0	5	3	3	0	0	0	0	p=0.0106
Severe	0	3	0	0	0	0	0	0	
		P=0.7457				P=1.000			

At the end of the investigation, from the symptom scoring cards of the patients and from clinical studies and observations of the investigators, these were the findings. (See Table IX and X)

Table IX

Patients' Evaluation of Acute Rhinitis At Different Periods of Observation (V1, V2, V3, V4)

	Actifed				Claritin-D				
	V1	V2	V3	V4	V1	V2	V3	V4	
None	0	3	6	10	0	6	14	27	
Mild	0	20	18	12	0	20	15	3	
Moderate	30	7	1	1	30	4	1	0	p=0.0001
Severe	0	0	0	0	0	0	0	0	
		P=0.114				P<0.0001			

Table X

Patients' Evaluation of Acute Rhinitis At Different Periods of Observation (V1, V2, V3, V4)

	Actifed				Claritin-D				
	V1	V2	V3	V4	V1	V2	V3	V4	
None	0	3	6	11	0	6	13	27	
Mild	0	20	18	11	0	20	16	3	
Moderate	30	7	1	1	30	4	1	0	p=0.0001
Severe	0	0	0	0	0	0	0	0	
	P=0.0061				P<0.0001				

Table XI

Patients' Evaluation of the Therapeutic Response at Different Periods of Observation

	Actifed			Claritin-D			
	V2	V3	V4	V2	V3	V4	
Excellent	3	6	10	7	14	27	
Good	16	15	10	18	13	2	
Fair	7	3	2	2	2	1	
Poor	4	1	1	3	1	0	p=0.0001
	P=0.0017			P=0.0001			

Table XII

Patients' Evaluation of the Therapeutic Response at Different Periods of Observation

	Actifed			Claritin-D			
	V2	V3	V4	V2	V3	V4	
Excellent	3	6	11	6	14	27	
Good	16	15	9	19	13	2	
Fair	8	4	2	3	2	1	p=0.0002
Poor	3	0	1	2	1	0	
	P=0.0009			P=0.0001			

Safety:

The Laboratory tests of all patients (including those drop-outs) before and after the medications were essentially normal.

DISCUSSION

Patients with acute rhinitis feel very miserable due to clogged nose or stuffy nose, profuse running or discharging nose, sneezing, sore throat, post-nasal drip, phlegm in the throat and occasionally experience coughing probably secondary to the post-nasal drip. Both Claritin-D and Actifed relieve these signs and symptoms pretty well except that Claritin-D appears to work faster and longer than Actifed. The average duration of action of Claritin-D is 15 to 16 hours, and the average duration of Actifed is 4-5 hours. Claritin-D relieves the stuffy nose, sneezing and discharging nose much more effectively, and this relief is achieved quicker and lasts longer than the relief brought about by Actifed.

Actifed's side effect of drowsiness is so severe that 93.3 % of these 30 cases experienced drowsiness of varying degrees. In 10 cases or 33.3% in the Actifed group, severe drowsiness was encountered so much that 5 cases or 16.6% were dropped after their first follow-up visit because they could not afford to continue their work and were afraid to lose their jobs. Two cases dropped off from the study after the 2nd follow-up visit for similar reasons. On the contrary, among the 30 cases of Claritin-D group, no one dropped out because of severe drowsiness. Twenty percent of this group experienced slight drowsiness on the first follow-up visit but it disappeared after 3 days. At the end of the study, nobody complained of drowsiness.

Other side effects were not significant in both groups except that one patient among the Actifed group developed hypertension. Among the Claritin-D group, 6 females developed loss of appetite although their laboratory studies did not show any abnormality; these 6 females were extra pleased because the drug helps them lose weight.

All these observations were revealed at the end of the study when the symptom scoring cards were received. This shows that Claritin-D is far more superior to Actifed in the treatment of acute rhinitis.

Claritin-D is not just very effective in relieving the severe symptom of acute rhinitis, but it is also well tolerated by all patients, and it is very safe as demonstrated by this study.

CONCLUSION

This study reveals that Claritin-D is far more superior to Actifed in terms of:

1. improving the signs and symptoms
2. improving the overall evaluation of acute rhinitis by the patients and the investigators.
3. well tolerated by the patients and absence of side effects.

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TITLE : A Comparative Study on the Efficacy of Medicated Medium-strip Gauze and Medicated Finger-cot as Anterior Packs in Minor Nasal Surgery

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ABSTRACT

Thirty-two patients underwent bilateral, nearly symmetrical nasal surgery under local anesthesia. Post-operatively, their nasal cavities were packed with the conventional medicated medium-strip gauze on one side and with the medicated finger-cot on the other. Selection of the side to be packed with one type of packing was done on a stratified random manner. Both methods of packing were compared in terms of control of post-operative bleeding, subjective pain on insertion and on removal, problems encountered during insertion and at home, recurrence of bleeding and appearance of nasal mucosa after removal, and microbiology of the packing materials. Statistical analysis using non-parametric tests were employed whenever feasible. Both methods were found out to be equally effective in controlling post-operative bleeding. Although the finger-cot required extra time for proper insertion in some instances, it was associated with less pain on insertion and on removal, and less recurrence of bleeding with generally smooth mucosa after removal of the packs on the 3rd post-operative day. Microbiologic results revealed more microbial isolates from the finger-cot type but as a whole, growths from all packing materials were not clinically significant.

INTRODUCTION

One of the indications of anterior nasal packing is the control of post-operative bleeding in nasal surgery. Conventionally, a medium (2-3 cm wide, 1 meter long) strip gauze impregnated with antibiotic ointment is inserted in a pleated manner within the nasal cavity, and removed several days later. Although this method remains to be an effective means of stopping the bleeding, it also causes additional pain on insertion (when done under local anesthesia) and on removal. It is not infrequent that an otolaryngologist's attention is called because of a portion of the gauze pack dangling in his patient's throat. Even more anxiety-provoking, both for the patient and the specialist, is the recurrence of bleeding after removal of the pack which, at times, may not be that easy to control.

Of the many innovations that have been devised in nasal packing, our interest is in the less-traumatic finger-cot method i.e., packs made by placing gauze inside cut-off fingers from surgeon's gloves. Although this type of packing is already widely known, there appears to be no formal study comparing it with the standard method of packing.

This undertaking aims to compare both methods of packing in terms of: (1) control of post-operative bleeding, (2) subjective pain on insertion and removal of packs, (3) problems encountered during insertion and at home, (4) recurrence of bleeding after removal, (5) appearance of nasal mucosa after removal, (6) microbiology of packing materials.

METHODOLOGY

Patients who underwent nasal surgical procedures under local anesthesia that involved disruption or removal of nasal mucosa in a bilateral, mearly symmetrical manner were included in the study. Selection of side

to be packed with one type of packing was done on a stratified random manner. The patients were numbered consecutively, and then those who belonged to the odd-numbered group had their left nasal cavity packed with the finger-cot type and their right nasal cavity with medium-strip gauze. Those who belonged to the even-numbered group had their right nasal cavity packed with finger-cot and their left nasal cavity with medium-strip. In each patient, the medium-strip gauze was impregnated with oxytetracycline/polymixin B ointment and the finger-cot externally coated with the same, but the medium-strip gauze within the finger-cot externally coated with the same, but the medium-strip gauze within the finger-cot was only dampened with sterile water so as to facilitate packing. (See appendix A.)

After the procedure, the patients were sent home with oral medications consisting of an antibiotic* (bacampicillin-PENGLOBE 400 mg BID x 10 days) and analgesic-decongestant (acetaminophen- phenylpropanolamine 325/18 mg - 650/36 mg TID x 5 days) drugs. They were followed up after 3 days for removal of packs. The finger-cot was first decompressed by removing the inner dressing from the cot and then removing the cot from the nose. This was followed by taking out the medium-strip gauze as gently as possible. Specimens from all nasal packing materials (two from the finger-cot type — that is, one from the outer surface and another from the non-medicated inner dressing) were collected and sent to the laboratory for microbiologic processing.**

Evaluation of the two methods of packing was conducted through subjective responses from the patients, objective assessments made by the surgeons, and technical data provided by microbiologic studies. Detailed evaluation sheets were provided so as to standardize recording and facilitate analysis of data (see Appendix B). Statistical testing was done using non-parametric methods whenever required.

RESULTS

A total of 32 patients was included in the study with age distribution ranging from 16 to 40 years old. The mean age was 26.3 years. They were equally distributed as to sex. Basically, all patients underwent operations in the area of the middle meatus plus variations which also involved bilateral, symmetrical disruption of nasal tissues (see Table 1). Of the 32 patients, five were not anesthesized equally on both sides. On insertion of the nasal packs (see Table 2), 15 patients complained of greater sensation of pain on the medium-strip side and only 4 on the finger-cot. The rest claimed that there was no difference. Post-operative bleeding was controlled in all patients although 5 patients had minimal transient posterior leak from the finger-cot side. Regarding problems encountered on insertion of the nasal packs, the surgeons pointed out that extra time was needed for the proper insertion of the finger-cot type in 10 instances.

At home (see Table 3), 2 patients experienced more pain on the medium-strip side. Another 2 patients had minimal bleeding leak anteriorly, one for each type of packing. Minor complaints like clicking sound on swallowing and excessive rhinorrhea on the finger-cot side were volunteered by 2 patients respectively. Four patients came back before the scheduled follow-up day due to protrusion of the medium-strip gauze into the oropharynx. The dangling portions were cut transorally, and the patients were sent home subsequently.

On the 3rd post-operative day, the packs were removed carefully. Twenty-three (23) patients claimed that the removal of the medium-strip gauze was more painful than that of the finger-cot. Nine (9) felt no difference between the 2 methods of packing. None singled out the finger-cot as more painful. As to the appearance of the nasal mucosa (see Table 4), there was no portion (i.e., inferior turbinate, septum, middle meatus and turbinate) in the nasal cavity that was found to be abraded in the finger-cot side but smooth in the medium-strip side. Nearly all portions (97% of inferior turbinate, middle turbinate and meatus, 72% of septum) of the nasal cavity on the medium strip side were abraded. In contrast, to the finger-cot side generally had smooth mucosa (only 44% of inferior turbinate and 16% of septum, middle turbinate and meatus were abraded). Recurrence of bleeding in variable degree was noted in all of the medium-strip side (see Tables 5 and 6). Although 13 of these cases resolved spontaneously after 5 minutes, 16 required application of 1% ephedrine sulfate-soaked cotton strips. Repacking of the nasal cavity was done in half, 13 patients had no recurrence of bleeding from the finger-cot side. There was no profuse rebleeding encountered; all of those that rebled (16 minimal, 2 moderate) resolved spontaneously. On sec-

* One patient with allergy to ampicillin; erythromycin 500 TID prescribed instead

** Culture and identification were limited to aerobic microorganisms since facilities for adequate anaerobic collection were not available.

ond follow-up, 25 patients did not experience another episode of rebleeding from both sides. Two patients on the finger-cot and 6 on the medium-strip had minimal recurrence of bleeding which were all transient, hence did not require special attention.

Results from microbiologic studies showed growths in 46.7% of specimens* coming from the outer surface of the finger-cot, 67.7% from the inner dressing of the finger-cot, and 16.7% from the medium-strip gauze. Species of Staphylococcus particularly albus accounted for 85.7% of the microorganisms isolated from the finger-cot surface, 61.9% from the inner dressing, and 60% from the medium-strip. The rest of the microorganisms cultured were various species of gram-negative bacilli except for one isolate each of Candida sp. from the inner dressing and from the medium-strip gauze.

DISCUSSION

Although the finger-cot method has been known to be less traumatic than the standard gauze dressing, controlled trials comparing both types are lacking. This study makes use of each patient as his own control, enabling the examiners to evaluate both types of anterior nasal packing in every aspect at the same instance.

The insertion of the medium strip gauze was associated with more pain than that of the finger-cot, which is statistically significant (sign test, $p=0.02$) despite the fact that all of the patients who singled out the finger-cot as more painful were among those who were inadequately anesthesized on that side to start with. Both methods were equally effective in controlling post-operative bleeding since the five instances of posterior bleeding leak from the finger-cot side (none from the medium-strip) were not statistically significant (sign test, $p=0.062$). Likewise, these instances were not clinically important because the leak in all cases was minimal as well as transient, and the patients were sent home with the finger-cots in place. Expectedly, more time was needed in the propoer insertion of the finger-cot type (10 cases) since the technique required additional skill and practice. This problem is simply technical, hence familiarity with the method will overcome it.

Problems encountered at home were minimal. Although 2 patients complained of more pain on medium-strip side and equal incidence (one each) of minor bleeding leak from both types, statistical evaluation is obviously not applicable. One problem intrinsic to the standard method of packing, which occurred in 4 patients, is the protrusion of the gauze strip into the oropharynx when the pack loosens up. This cannot happen in the other method since the dressing is contained within the finger-cot unless the whole pack slips down into the oropharynx. To avoid accidental extrusion of the packs particularly the finger-cot on sneezing for example, patients were advised to cover nose with an external dressing at all times.

In our institution, the conventional anterior nasal packs are usually removed on the fifth post-operative day since incidence of rebleeding is said to be high if the packs are taken out earlier. In this study, both types of nasal packing were removed on the third post-operative day. Early removal means early patient relief from discomfort and decreased likelihood of other complications associated with nasal packing.

Indeed all sides from where the medium-strip gauze was removed showed minimal to profuse rebleeding. When compared to the finger-cot, the former is associated with an overwhelmingly significant greater degree of rebleeding (Wilcoxon matched-pair rank test, $p<0.00003$). Moreover, the medium-strip method caused more pain on removal than the finger-cot, which is also convincingly significant (sign test, $p<0.002$).

The greater degree of rebleeding from the medium-strip side is related to its tendency to open up raw mucosal surfaces upon removal. Being adherent to the nasal mucosa despite the liberal lubrication applied, it disturbs the healing process and abrades the nasal mucosa i.e., inferior turbinate, septum, middle turbinate and meatus, even when it is gently taken out. The finger-cot, on the other hand, is associated with a greatly significant smooth mucosa in all parts of the nasal cavity (McNemar test, $p<0.0001$). The incidence of another bleeding episode after the first follow-up showed no statistical difference between the two methods of packing (sign test, $p=0.124$). It has been pointed out earlier that all of these instances of rebleeding at home after the packs were removed (2 from the finger-cot and 6 from the medium-strip) were minimal and transient, hence not clinically significant.

* A total of 5 specimens (2 from the outer surface and 1 from the inner dressing of the finger-cot, 2 from the medium-strip gauze) was not received by the laboratory for processing.

With regard to microbiology of nasal packing materials (see Table 7), the most number of isolates were from the inner dressing of the finger-cot. This was expected because it was not lubricated intentionally with an antibiotic ointment. Colonization was not considered clinically significant since it was confined within the finger-cot. Nonetheless, the outer surface of the finger-cot revealed statistically more isolates regardless of kind than the medium-strip (sign, p=0.04). This may be due to the fact that the finger-cot is made of latex which is a non-absorbent and non-porous material, making the antibiotic ointment easily washed away by the excessive rhinorrhea associated with nasal packing. _iStaphylococcus albus was the most common microorganism cultured from all packing materials. Since it is non-pathogenic in healthy adults, its exclusion from statistical testing will bring about no significant difference between the outer surface of the finger-cot and the mediumstrip gauze in terms of potential pathogenic microbes recovered (sign test, p=1.0; see Appendix C). In normal nasal flora as studied by Slavin et al, Staphylococcus epidermidis (albus) was present in 83%, S. Aureus in 23 %, Streptococcus viridans in 17%, and Enterobacter species in 4% (percentages total over 100% due to mixed growths). All patients in this study, however, had chronic sinusitis which might also add to the emergence of gram-negative bacteria. Another contributory source was the possible contamination with saliva particularly to account for the varied flora recovered from the inner dressing of the finger-cot. Contamination on collection could not be also discounted since all packing materials passed through both nares. In general, the presence of microbial growth remained academic since all patients did not clinically manifest signs of active infection.

CONCLUSION

This study has established that the finger-cot method of nasal packing is equally effective as the standard medium-strip in controlling post-operative bleeding. In addition, it offers the following advantages over the medium-strip method namely: (1) significant lesser pain on insertion and on removal of the pack, (2) aignificant lesser recurrence of bleeding after removal with a generally smooth nasal mucosa, (3) relatively cost-effective since little amount of antibiotic ointment is needed (the surgical gloves may come from those to be discarded), and (4) early removal i.e., on the third post-operative day or even earlier. Although it requires extra time for proper insertion, this shortcoming can be overcome by familiarity with the method. Microbial isolates from all nasal packing, though more from the finger-cot, were not clinically significant as a whole.

TABLE 1 : TYPES OF NASAL SURGERY

1. Polypectomy, ethmoidectomy, antrostomy-bilateral with or without partial middle turbinectomy-bilateral	13
2. Ethmoidectomy, antrostomy-bilateral with or without partial middle turbinectomy-bilateral	7
3. Polypectomy, ethmoidectomy, antrostomy/ ethmoidectomy, antrostomy with or without partial middle turbinectomy-bilateral	6
4. Submucous resection-septum polypectomy, ethmoidectomy, antrostomy-bilateral with or without partial middle turbinectomy-bilateral	5
5. Submucous resection-septum Ethmoidectomy, antrostomy-bilateral	1
TOTAL	**32**

TABLE 2: DIFFERENCES ON INSERTION

	pain	Bleeding leak	Other problems
FINGER-COT	4	5	extra time needed for proper insertion 10
MEDIUM STRIP	15	0	
NO DIFFERENCE	13	27	

TABLE 3: DIFFERENCES AT HOME

	pain	Bleeding leak	Other problems
FINGER-COT	0	1	excessive rhinorrhea - 1 clicking sound on swallowing 1
MEDIUM-STRIP	2	1	protrusion of medium-strip into the oropharynx.....4
NO DIFFERENCE	30	31	

TABLE 4: APPEARANCE OF NASAL MUCOSA AFTER REMOVAL OF PACKS

	MEDIUM-STRIP GAUZE					
	INF. TURBINATE		SEPTUM		MID. TURBINATE/MEATUS	
	smooth	abraded	smooth	abraded	smooth or presence of formed clots	abraded or raw
FINGER-COT						
smooth	1	17	9	18	1	26
	0	14	0	5	0	5

TABLE 5: DEGREE OF REBLEEDING AFTER REMOVAL OF PACKS

	1	2	3	4
FINGER-COT	13	17	2	0
MEDIUM-STRIP	0	10	16	6

1 - No rebleeding
2 - Minimal-that is, not flowing
3 - Moderate-that is, in trickles
4 - Profuse-that is, continuously flowing

TABLE 6: MANNER OF CONTROL OF REBLEEDING

	1	2	3	4
FINGER-COT	19	0	0	13
MEDIUM-STRIP	13	16	3	0

1 - Spontaneous resolution within 5 minutes
2 - applications of 1% ephedrine sulfate-soaked cotton strips
3 - repacking of nasal cavity
4 - not applicable

TABLE 7: MICROBIAL ISOLATES

	FINGER-COT outer surface	**FINGER-COT inner dressing**	**MEDIUM-STRIP gauze**
Staphylococcus sp.	1	1	1
Staphylococcus albus	8	11	2
Staphylococcus aureus	3	1	
Pseudomonas aeruginosa	1	1	
Achromobacter sp.	1	2	
Proteus vulgaris	1		
Acinetobacter anitratum	1	1	
E. coli		1	
Proteus mirabilis		1	
Candida sp.		1	1
TOTAL NUMBER OF ISOLATES	**14**	**21**	**5**
TOTAL NUMBER OF SPECIMEN	**30**	**31**	**30**

APPENDIX A

INSERTION OF NASAL PACK

A. FINGER-COT TYPE

Materials:

1. Finger-cot (middle finger cut off from a size 7 1/2 surgical gloves ——————————# 1
2. Antibiotic ointment (oxytetracycline/polymixin B) 5 g tube ——————————— # 1
3. Medium-strip gauze ——————— # 1 or 2
4. Nasal speculum
5. Nasal dressing forceps or bayonet forceps

Procedure:

1. Coat liberally the outer suface of the finger-cot with the antibiotic ointment.
2. Place the cot over the speculum which is then introduced into the nose.
3. Maintain pressure between your index finger, which is resting on the ala, and the blade of the speculum to avoid slipping of the finger-cot deep into the nasal chamber.
4. Spread out the sides of the finger-cot by probing the nasal forceps within the finger-cot.
5. Insert slowly the medium-strip gauze (dampened with sterile water) using the nasal dressing forcep until the whole chamber is fully packed.

B. MEDIUM-STRIP GAUZE

Materials:

1. Medium-strip gauze ——————————# 1 or 2
2. Antibiotic ointment (oxytetracycline/polymixin B) 5 g ——————————— # 2 or 3
3. Nasal speculum
4. Nasal dressing forceps or bayonet forceps

Procedure:

1. Lubricate liberally the medium-strip gauze with the antibiotic ointment.
2. With the speculum in place, insert the medicated strip using the nasal forceps in a pleated manner within the nasal chamber until fully packed.

APPENDIX C

MICROBIAL GROWTH

Pt.	Finger-cot outer surface	Medium-strip inner surface
1.	+	–
2.	–	–
3.	–	–
4.	+	+
5.	+	–
6.	–	–
7.	0	0
8.	+	+
9.	+	+
10.	–	–
11.	+	–
12.	+	–
13.	+	–
14.	–	–
15.	+	+
16.	+	+
17.	–	–
18.	+	–
19.	–	0
20.	–	–
21.	+	–
22.	0	–
23.	–	–
24.	+	+
25.	–	+
26.	+	–
27.	–	–
28.	–	–
29.	–	–
30.	–	–
31.	+	+
32.	–	–

(sign test, p = 0.04)

POTENTIALLY PATHOGENIC STRAIN

Pt.	Finger-cot outer surface	Medium-strip inner surface
1.	–	–
2.	–	–
3.	–	–
4.	–	+
5.	+	–
6.	–	–
7.	0	0
8.	–	–
9.	–	–
10.	–	–
11.	–	–
12.	–	–
13.	+	–
14.	–	–
15.	–	–
16.	–	–
17.	–	–
18.	+	–
19.	–	0
20.	–	–
21.	–	–
22.	0	–
23.	–	–
24.	+	–
25.	–	+
26.	+	–
27.	–	–
28.	–	–
29.	–	–
30.	–	–
31.	+	+
32.	–	–

(sign test, p = 1.0)

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EAST AVENUE MEDICAL CENTER
DEPARTMENT OF OTOLARYNGOLOGY

TITLE : Collision Tumor of the Nasopharynx (Liposarcoma, Undifferentiated Ca) Report of a Case

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INTRODUCTION

We report a case of a rare, highly malignant collision tumor. A liposarcoma of the nasal cavity with extension to the ethmoid and orbit and an undifferentiated Ca of the nasopharynx. Biopsy was done three times from the nasal mass and nasopharynx. Radical maxillectomy with orbital exenteration, radical neck dissection and post-op radiation was contemplated. Unfortunately, the patient deteriorated until his untimely demise before the proposed management was instituted.

OBJECTIVES

1. To report a rare collision tumor involving liposarcoma of the nasal cavity, paranasal sinuses and orbit and an undifferentiated Ca of the nasopharynx.

2. To review the literature regarding liposarcoma of the head and neck.

3. To present a local retrospective study on liposarcoma of the head and neck.

CASE REPORT

A 49-year old taxi driver was admitted for the first time at the East Avenue Medical Center for recurrent epistaxis from the right nose. The patient had cough and colds with yellowish, mucoid, blood-tinged sputum, 7 months PTA which were temporarily relieved by self-prescribed medications. One month PTA, he noted decrease in hearing acuity (R) and (R) nasal obstruction. The epistaxis increased in frequency and amount. He was given hematinics IM at the local health center which provided temporary relief. The patient consulted at EAMC because of the persistence of epistaxis and was subsequently admitted. He has a 35 pack year smoking history and has been taking alcoholic drinks for 30 years. In the past three months he lost 35 pounds.

On admission, the significant findings were: retracted TM, AD, a grayish-reddish gelatinous friable mass about .5 cm at the area of the middle (R) turbinate, a 1 cm fleshy mass at the area of the posterior choanae, bilateral infra-auricular neck nodes both measuring 2 x 3 cm. PNS x-ray reveals bilateral maxillary sinusitis. Except for minimal PTB other laboratory work-ups were unremarkable. The admitting impression was NPCA, stage III.

The first biopsy of the nasal mass revealed liposarcoma. However, a repeat biopsy of the nasopharynx was suggested. The repeat biopsy was undifferentiate Ca. After a week, a third biopsy was done as per suggestion of the pathologist. The previous diagnosis was confirmed - Liposarcoma, myxoid type with some degree of differentiation at the nasal cavity with an undifferentiated Ca of the nasopharynx, a collision tumor.

He was scheduled for radical maxillectomy (R) with possible orbital exenteration and RND (R) pending C-T scan results. However, he developed proptosis, lid edema, lateral and medial rectus palsy, OD and hypoesthesia of the right half of the face. C-T scan showed a mass in the right half of the nasal cavity displacing the nasal septum to the left, with lytic changes in the medial wall of the right maxillary sinus with extension of the mass to the sella, ethmoid and sphenoid sinuses. There is also involvement of the (R) medial rectus muscle and the orbital roof. Two days

prior to the procedure, the patient became stuporous and later succumbed to cardio-respiratory arrest.

DISCUSSION

TUMOR INCIDENCE

Liposarcoma, next to malignant fibrous histiocytoma is the most common soft tissue sarcoma of adult life. Among soft tissue sarcomas its incidence ranges from 16%-18%, but values as low as 5%-6% have also been given by Hashimoto et al. Kindblom et al reported an annual incidence of 2.5 million in Sweden. It is likely that the true incidence ranges between 10%-12% of all soft tissue sarcomas since earlier reviews included cases of malignant fibrous histiocytoma.

AGE AND SEX INCIDENCE

Liposarcoma is primarily a tumor of adult life with a peak incidence of between 40 and 60 years with a mean of 50 years. It is virtually unknown in infants and small children, but there seems to be no upper age limit. In a recent review of 1067 tumors at the AFIP during a 10-year period, the youngest patient was 8 months and the oldest 87 with the average age depending to some extent on the anatomical distribution of the tumor. Males are more often affected than females (55%-60%). For unexplained reasons, the right half is more often involved than the left.

RACIAL PREDILECTION

There is no mention of racial predilection in our review of literature.

INCIDENCE IN HEAD AND NECK

Liposarcoma is most commonly found in the lower extremities (thigh) and the retroperionium and only found in about 2%-6% of cases in the head and neck with the neck being most common site in this area.

Das Gupta in a combined series of 335 liposarcomas listed only 9 (1.8%) within the head and neck region. In Allens study of 126 confirmed liposarcomas 8 were in the head and neck (6.3%). In 1960, Spittle and associates reviewed 60 cases with only 1 case in the neck. Baden and Newman in a review of literature in 1977 had 40 cases, 35 of which contained sufficient data that could be analyzed. In 1978, Kindblom et al included only 17 cases from the literature and added 4 cases but did not add the new cases mentioned by Baden and Newman. In 1979, Saunders et al also reviewed the literature and listed 25 previously reported cases and added 4 new ones. This series neglected the cases described by Kindblom and associates, Baden and Newman, and also by Fu in 1977. At the AFIP, 60 of 1067 cases reviewed were in the head and neck region. Stoller and Davies reported an incidence of only 4 liposarcomas in the head and neck in a population of 8.5 million people in Southern England, although how this figure was established was not mentioned. Other rare sites include the cheek, forehead, scalp, orbit, floor of the mouth, soft palate, pharynx, meninges, larynx, supraclavicular fossa, parotid gland, maxilla and the mastoid. Knowles in 1954, reported the case of a 12 year old with liposarcoma of the nasopharynx. Fu et al in 1977, involving the nasal cavity, PNS, hard palate, temporal and sphenoid bones.

HISTOLOGICAL CLASSIFICATION OF LIPOSARCOMA

Stout, Enterline and Enzinger have all given different classifications of liposarcoma. For our purpose, we adapted the classification of Enzinger as used by the AFIP. Liposarcoma is classified into 4 types: Myxoid, well-differentiated Lipoma-like, sclerosing, inflammatory, dedifferentiated), round cell, pleomorphic.

GROSS APPEARANCE

Grossly, the tumor varies as to the histologic type. From the white-gray, slimy, translucent myxoid variants to the brain like quality of the less-differentiated types with the well-differentiated ones resembling yellowish-orange lipomas.

MICROSCOPIC APPEARANCE AND INCIDENCE

Microscopically, the myxoid type is the most common (30%-50% in all sites). It is characterized by monomorphic, fusiform or stellate cells residing in a mucoid stroma rich in hyaluronic acid with delicate plexiform capillary network. The well-differentiated

type (20%-30% of cases) varies from lipoma-like cells to inflammatory reaction and sclerosis all with bizarre lipoblasts. Pleomorphic liposarcoma (10%-25% of cases) contains an abundant mixture of giant cells that have a dense, glassy, eosinophilic cytoplasm with bizarre lipoblast and numerous abnormal mitotic figures. The round cell type (10%-15% of cases) has round to oval cells with multi-vacuolated cytoplasm and a central round nucleus that may be hyperchromatic but marked atypical mitosis are not common.

SURVIVAL AND RECURRENCE RATE

The myxoid and the well-differentiated types have the best survival rates (75%-100%). The round cell ranges from 18%-25%, with the poorest survival rate belonging to the pleomorphic type (0%-21%). The myxoid and well-differentiated types have the most recurrence rates (50%-100%) with the pleomorphic and round cell ranging from 75%-80%.

RATE, INCIDENCE AND SITE OF METASTASIS

The rate of metastasis is closely related to the degree of histological differentiation. The less differentiated, the more cellular and the more pleomorphic a given liposarcoma, the more likely it will metastasize. Apparently, the incidence of metastasis is dependent to a lesser extent on the location and size of the tumor and perhaps also on the mode of therapy. Sires of metastasis vary considerably. Mostly, poorly differentiated types metastasize to the lungs and the visceral organs. Myxoid liposarcomas produce secondary lesions on serosal surfaces of pleura, pericardium and diaphragm and sometimes in the retroperitonium. A study by Giorgiades et al attempted to delineate metastasis from a probable multicentric origin of liposarcoma by presenting 1 case in which they believe multicentric origin is present. Lymph node metastasis is rare and if present, indicates advanced disease.

TREATMENT

Treatment consists of wide excision of the tumor with post-operative irradiation. Studies have shown that plain radiotherapy has not been so effective in some of the cases but when used on metastatic cases the response may be striking. Chemotherapy may have a role in the treatment of liposarcoma. Kindblom et al in 1977 reported on its use but the series was too short to draw any conclusions.

A collision tumor is a tumor that is found adjacent to and meeting another of different histological type in the same area. In our view of foreign literature we see no incidence of a collision tumor involving a liposarcoma in the nasal cavity and an undifferentiated Ca in the nasopharynx.

REVIEW OF LOCAL LITERATURE AND CASES

In our review of local literature, we have not yet encountered any case of a liposarcoma occurring in the nasal cavity nor a collision tumor involving liposarcoma and an undifferentiated Ca. However, upon retrospective study of liposarcoma (15 years) in two institutions, we have found only 1 unreported case of myxoid liposarcoma involving the maxilla.

A review of our slides by different pathologists in different institutions gave the general consensus of a collision tumor involving a liposarcoma (myxoid type) of the nasal cavity, with extension to the PNS and orbit and an undifferentiated carcinoma of the nasopharynx.

CONCLUSION

We have presented a case of a rare and highly malignant collision tumor involving liposarcoma of the nasal cavity with extension to the PNS and orbit and an undifferentiated carcinoma of the nasopharynx.

In itself, liposarcoma of the nasal cavity is rare and to our knowledge may be the first reported case locally and the third reported case internationally. Furthermore, when combined with an undifferentiated Ca of the nasopharynx as a collision tumor makes it an even rarer case and thus we believe that this may be the first reported case of its kind both locally and internationally.

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TABLE I

HISTOLOGIC TYPE	INCIDENCE 5-YR.	SURVIVAL RATE	LOC. RECURRENCE
Well-differentiated	20-30%	75%-100%	50%-100%
Myxoid	30-50%	75%-100%	50%-100%
Round Cell	10-15%	18%-25%	75%-80%
Pleomorphic	10-25%	0%-21%	75%-80%

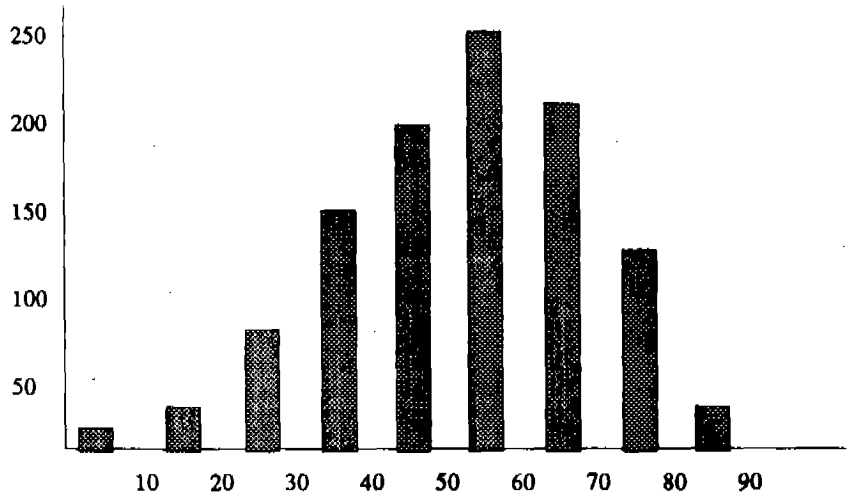
The Incidence, 5-year survival rate and recurrence of Liposarcoma.

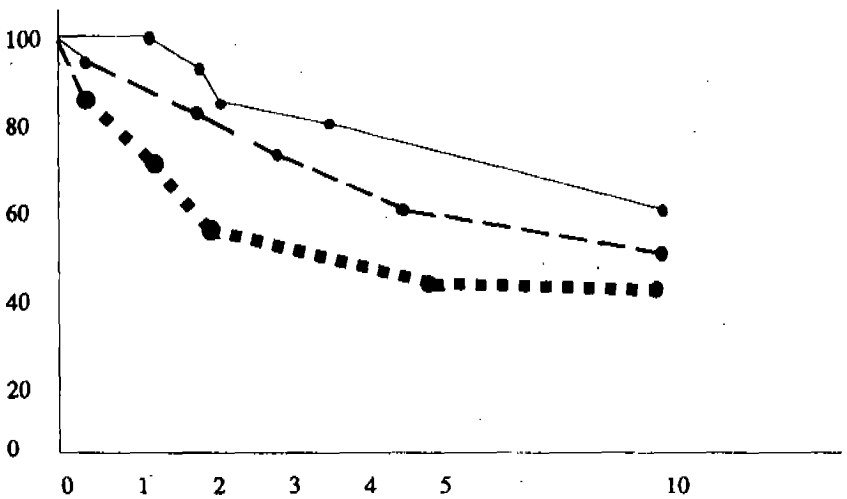
TABLE II

Histological Classification of Liposarcoma

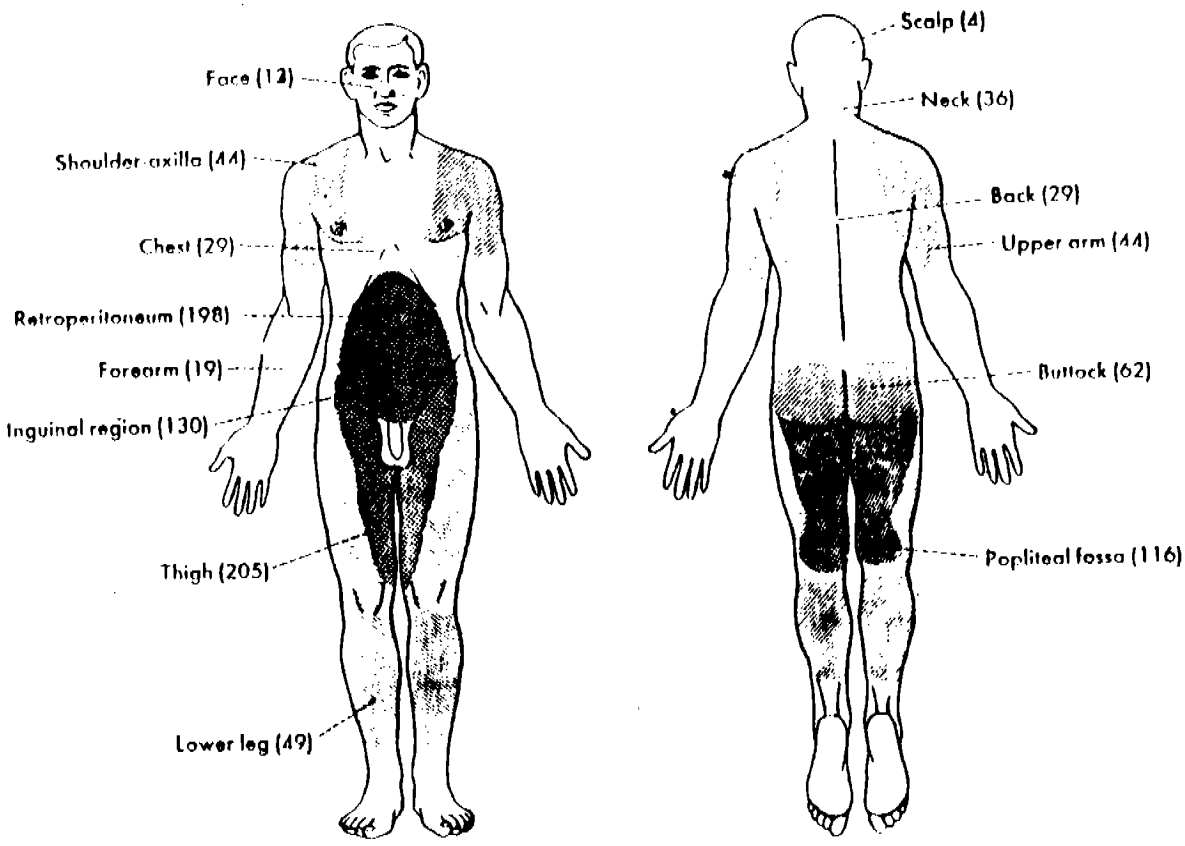
STOUT	ENTERLINE ET AL.	ENZINGER & WINSLOW
1. Well-diff. myxoid	Well-diff. myxoid	Myxoid
2. Poorly-diff. myxoid (may have fibrosarcoma-like areas)	Poorly-diff, myxoid	Round cell
3. Round-cell or adenoid group	Lipoma-like	Well-diff. (lipoma like or sclerosing)
4. Mixed group	Myxoid mixed (including fibrosarcoma-like areas)	Pleomorphic
5.	Non-myxoid	

Age distribution of 1067 liposarcomas. The tumor is most common during adult life and is rare in children, especially in those below 10 years of age.





Survival correlated histologically.



Anatomical locations of liposarcoma (AFIP 1067 cases)

ANATOMICAL LOCATION	NO. OF CASES	%
Head-neck Neck (36), face (13) Scalp (4)	60	5.6
Trunk Retroperitoneum (198) Inguinal region (130) Back (29), chest (29)	452	42.4
Upper extremities Shoulder-axilla (44) Upper arm (44), forearm (19)	113	10.6
Lower extremities Thigh-knee (321) Buttock (62) Lower leg (49)	442	41.4
TOTAL	**1067**	**100.0**

THE LATERAL NASAL WALL IN FILIPINOS: A STUDY BASED ON FIFTY CONSECUTIVE CADAVER DISSECTIONS+

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ABSTRACT

This study investigated anatomical variations and actual measurements of anatomic structures in the lateral nasal wall in fifty consecutive Filipino cadavers dissected. Such measurements were compared with values published in anatomy textbooks. This study proves that Caucasian-based figures need not reflect those in Filipinos. Anatomic variations were noted and their clinical significance discussed. This study gives baseline values in Filipinos and is of potential use for the clinician in practice as well as for instrument design for specific use in nasal surgery on Filipino patients.

INTRODUCTION

The specialty of Otorhinolaryngology-Head and Neck Surgery has recently gained major advances in the area of rhinology and sinus surgery. There has been increased discussion regarding the advantages of newer surgical techniques like functional endoscopic surgery over conventional sinus surgery and vice-versa. The area of osteomeatal complex, while poorly visualized on anterior rhinoscopy or plain radiographs is most important in the pathogenesis of secondary disease within the major sinuses. Obstruction in this area either due to osteomeatal inflammaztion or anatomic variation can perpetuate sinus infection. Functional endoscopic sinus surgery emphasizes endoscopic identification and operation of the diseased ethmoidal infundibulum with the aim of reestablishing drainage and ventilation of the dependent large sinuses via their physiological ostia. Van Alyea and Myerson, with the knowledge of this important physiologic concept, gave impetus to cannulation of the ostium maxillare to treat seemingly "irreversible" sinus pathology. Zuckekandl recognized the importance of anatomic variations in the middle meatal area responsible for pathogenesis of sinus disease. The basic knowledge of the anatomy of this critical importance. In this respect, the rhinologist who wants to cannulate the maxillary ostium or the sinonasal endoscopist must be familiar with the dimensions and spatial orientation of the important structures in this area. In our setting, these advances are now being introduced. However, basic anatomy textbooks deal mainly with measurements and anatomic observations made on Caucasians. Considering that Filipinos are generally anthorpometrically smaller, idiosyncrasies and variable dimensions of the structures are expected. Consequently, these values may dictate the use of indigenous specialized instruments designed for Filipinos as well as guide the surgeons in performing simple surgical intervention or during endoscopy of the sinonasal areas. Clinical correlation with certain unique rhinopathologic conditions and surgical intervention deserve special consideration. To investigate the hypothesis that foreign published data on the anatomy of the lateral nasal wall need not reflect those of the Filipinos, actual measurements and description of the anatomy of the lateral nasal wall was based on fifty consecutive cadaver dissections of Filipino adult skulls. Particular atten-

+ First prize, PSO-HNS 8th Annual Residents' Research Contest held on October 26, 1988, Manila Midtown Hotel

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tion to the osteomeatal area was made with the end-in-view of using the data for clinical application in doing cannulation of the maxillary ostium and with the use of a modified cannula specifically designed for Filipinos in a future study.

MATERIALS AND METHODS

Filipino adult cadavers from the Department of Anatomy, UP College of Medicine were studied paying particular attention to the lateral nasal wall. Sagittal skull sections were done as well as coronal sections when needed. Actual measurements were made using a Vernier caliper and recorded on the prepared observation sheets (see Appendix I). Anatomic variations observed were likewise noted. Data were recorded and analyzed using a microstat computer program (IBM). Measurements on the left side were compared with the eight to note any significant difference.

RESULTS

Table 1 shows the measurements of the different anatomic structures in the lateral nasal wall in this study (Figures 1, 2, and 3).

APPENDIX I

CADAVER #: _____ AGE: _____

SEX: _____

RIGHT : _____ LEFT: _____

Distance from the vestibule to limen nasi _____mm.

Distance from the vestibule to the anterior end of inferior turbinate _____mm.

Distance from the vestibule to the maxillary ostium _____mm.

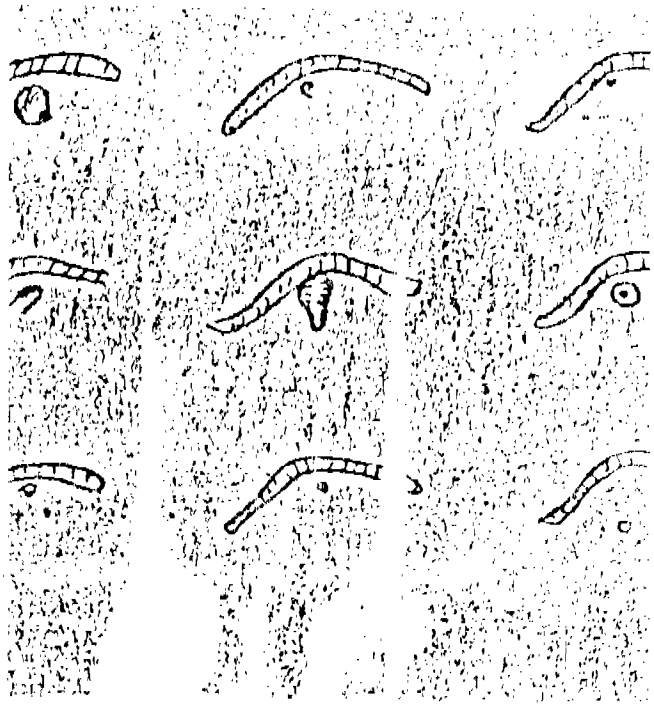
TURBINATES	+	-	LENGTH
1. Inferior			
2. Middle			
3. Superior			
4. Supreme			

INFERIOR MEATUS:

Distance of the nasolacrimal duct ostium to the anterior portion of the inferior concha: _____mm.

Diameter of the ostium: _____mm.

Variations in the size, shape and position of the opening of the nasolacrimal duct:



MIDDLE MEATUS:

Diameter of ostium: _____ mm.

Configuration of ostium:

Horizontal _____

Vertical _____

Oblique _____

Distance from the anterior end of the ethmoidal infundibulum:

_____mm.

Distance from the anterior end of the middle meatus:

_____mm.

Height of uncinate process: _____mm.

Infundibulum:

Length _____ mm.

Depth _____ mm.

Maxillary sinus:

AP diameter _____ mm.

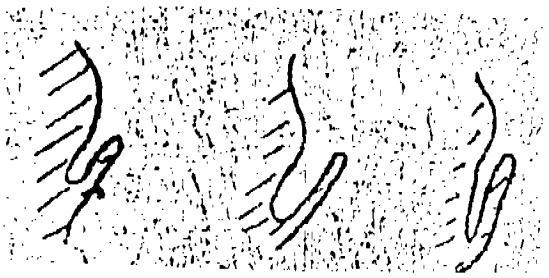
Transverse diameter _____ mm.

Height _____ mm.

Accessory ostia in the hiatus semilunaris: + –

Variations in the semilunar hiatus and ethmoid infundibulum:

Distance from the maxillary floor to the maxillary ostium _____ mm.



a. Uncinate process is moderately tall and hiatus is moderately wide.

b. Extreme development of the process. Hiatus is specially wide.

c. Hiatus is narrow.

d. Uncinate process and infundibulum are rudimentary.

e. Bulla overhangs the uncinate process.

f. The two are in contact.

TABLE 1. Measurements of the Different Anatomic Structures in the Lateral Nasal Wall of Adult Skulls (n=50).

	MEAN (MM)	STANDARD DEVIATION
A. Distance between nares and limen nasi	12.79	+/-3.60
B. Distance between nares and anterior end of inferior turbinate	18.66	+/-2.24
C. Distance between anterior end of inferior turbinate and nasolacrimal ostium	10.10	+/-1.38
D. Diameter of nasolacrimal ostium	3.44	+/-1.24
E. Turbinate length		
1. Inferior	41.46	+/-3.62
2. Middle	37.13	+/-4.13
3. Superior	13.1	+/-6.08
4. Supreme	-	-
F. Distance between nares and maxillary ostium	37.97	+/-4.24
G. Diameter of maxillary ostium	4.23	+/-1.40
H. Height of uncinate process	10.68	+/-3.73
I. Distance between ostium and maxillary sinus floor	30.84	+/-6.46
J. Length of Hiatus semilunaris	17.11	+/-3.64

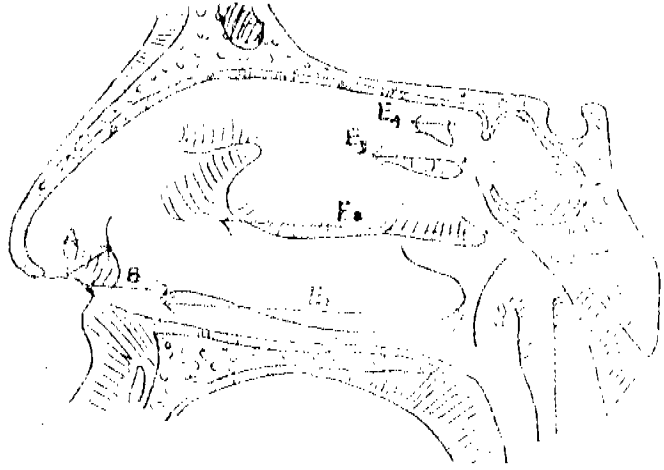


Figure 1. The lateral nasal wall and the anatomical landmarks measured.

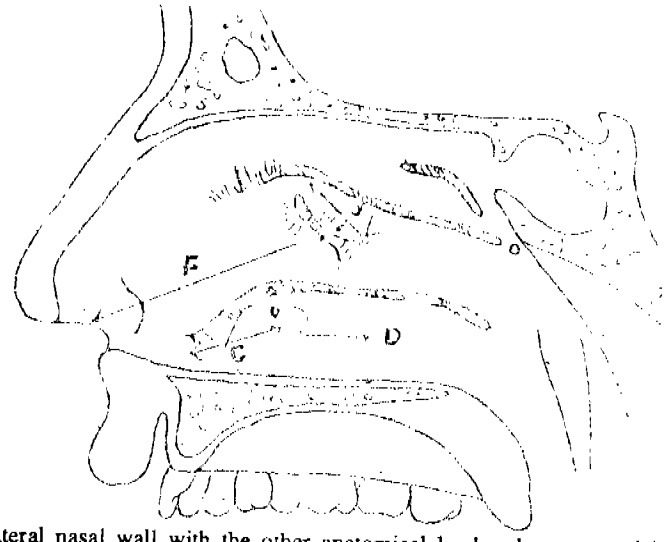


Figure 2. The lateral nasal wall with the other anatomical landmarks measured in this study.

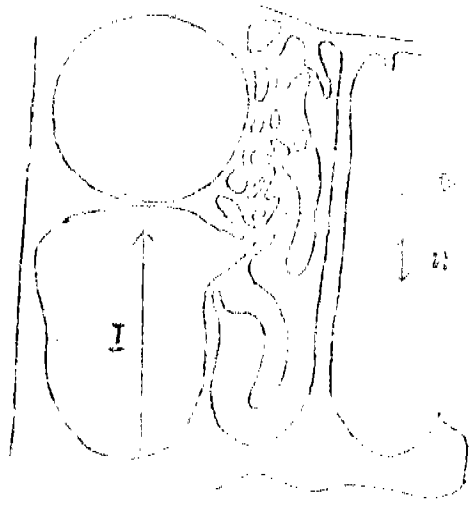


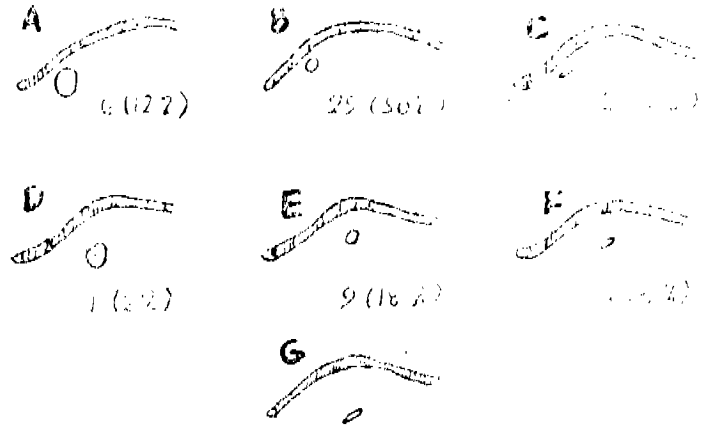
Figure 3. Coronal section of the skull with emphasis on the osteomeatal area.

Appdendix II. Measure on left and right lateral nasal walls in Filipino adult cadavers. (n = 30)

	Mean +/-S.D. (mm) Right	Left	P
A. Distance from nares to inferior turbinate	18.27 +/-4.11	18.20 +/-3.42	.02 NS*
B. Distance from nares to limen nasi	11.77 +/-2.36	11.73 +/-1.76	.32 NS*
C. Distance from nares	37.54 +/-5.77	39.20 +/-4.71	.53 NS*
D. Length of turbinate			
Inferior	43.94 +/-3.61	42.31 +/-3.44	.06 NS*
Middle	37.92 +/-4.34	37.61 +/-4.94	.03 NS*
Superior	13.80 +/-7.30	12.40 +/-5.75	.01 NS*
E. Turbinate end to nasolacrimal ostium	9.72 +/-3.43	10.01 +/-1.38	.09 NS*
F. Diameter of naso-lacrimal ostium	2.74 +/-1.09	2.58 +/-0.58	.12 NS*
G. Diameter of maxillary ostium	3.88+ +/-1.26	3.61 +/-1.41	.67 NS*
H. Height of uncinate process	17.27 +/-5.03	16.32 +/-4.22	.41 NS*
I. Length of hiatus semilunaris	17.27 +/-5.02	16.38 +/-4.21	.18 NS*
J. Depth of infun-dibulum	5.71 +/-4.87	5.01 +/-3.41	.18 NS*
K. Distance from ostium to floor of maxillary sinus	29.82 +/-7.80	30.29 +/-7.03	.04 NS*

* NS - not significant

Figure 4. Variation in the location of the nasolacrimal ductostium



a. Wide diameter of oval ostium just below the attachment of the anterior third of the inferior turbinate.

b. Moderately wide round ostium just below the attachment of the anterior third of the inferior turbinate.

c. Slit-like ostium just below the attachment of the anterior third of the inferior turbinate.

d. Wide diameter of oval ostium about 5 mm below the attachment of the inferior turbinate.

e. Moderate diameter of oval ostium about 5 mm below the inferior turbinate.

f. Slit-like ostium about 5 mm below the attachment of the inferior turbinate.

g. Slit-like ostium about 10 mm below the attachment of the inferior turbinate in the inferior end.

Figure 5. Different configurations of the maxillary ostium

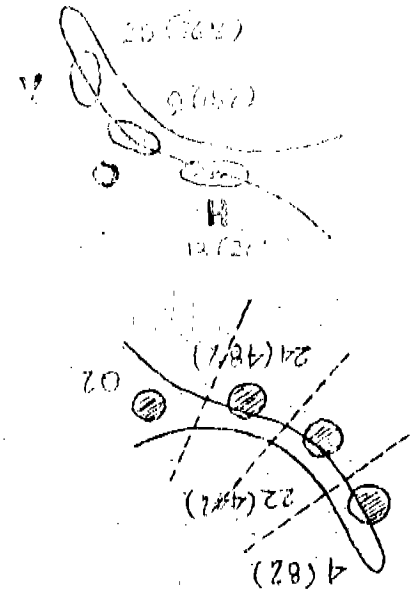
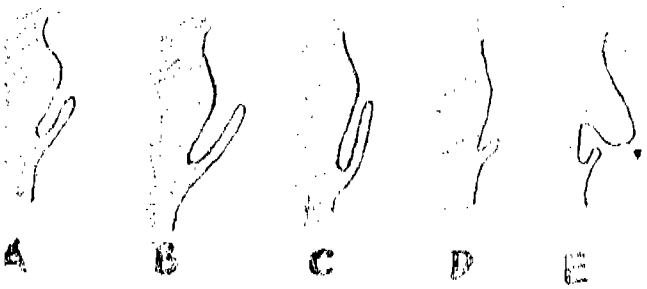


Figure 6. Variation in the location of the maxillary ostium in relation to the infundibulum

Figure 7. Variations in the Osteomeatal Complex



a. Uncinate process is moderately tall and hiatus is moderately wide 26 (52%)

b. Extreme development of the uncinate process 9 (18%)

c. Hiatus is narrow 4 (8%)

d. Uncinate process and infundibulum are rudimentary 2 (4%)

e. Bulla overhangs the uncinate process 8 (16%)

f. The uncinate process and bulla are in contact 1 (2%)

There was no significant variation between the right and left lateral nasal walls ($p<.05$) using the T - test analysis (Appendix II).

Anatomical variations noted in the study included the following:

(1) Absence of supreme turbinate in all cadavers dissected.

(2) Sixteen percent incidence of accessory ostium in the middle meatus with the most common location being posterior to the ethmoidal infundibulum.

(3) Variation in the location of the nasolacrimal duct ostium (see figure 4).

(4) Different configurations of the maxillary ostium (Figure 5).

(a) Vertical 28 (56%)

(b) Horizontal 13 (26%)

(c) Oblique 9 (18%)

(5) Variation in the location of the maxillary ostium in relation to the infundibulum (Figure 6):

anterior 4 (8%)

middle third 22 (44%)

posterior third 24 (48%)

(6) Variation in the osteomeatal complex (Figure 7).

DISCUSSION

In order to test our hypothesis that basic anatomy textbook values based on cadaver dissection on Caucasians need not reflect those of Filipinos, a comparison of values obtained in this study and published date data was done.

	Foreign data	Present study
Nares to inferior turbinate end	25-40 mm	19 mm
Nares to nasolacrimal ostium	30-40 mm	28 mm
Limen nasi to nasolacrimal ostium	15-20 mm	17 mm
Turbinate end to nasolacrimal ostium	10 mm	10 mm
Inferior turbinate length	45-60 mm	38 mm
Diameter of maxillary ostium	< 5 mm	4 mm
Ostium to maxillary sinus floor	33 mm	31 mm
Depth of ethmoidal infundibulum	5 mm	7 mm
Length of hiatus semilunaris	15-20 mm	17 mm

This study presents variations with regard to measurements of anatomical structures in the lateral nasal wall among Caucasians and Filipinos. Consideration of this observation must be borne in mind in doing nasal surgery as well as in designing instruments for use in Filipino patients.

A discussion of the antomic variations found in the study will be presented.

A. Absence of the supreme turbinate

Schaeffer (1916) cited the presence of the supreme turbinate either unilaterally or bilaterally in 60% of individuals. It is definitely the most rudimentary of the turbinates and may present only as a slight fold in the lateral nasal wall which makes identification quite difficult. There was no supreme turbinate found in any of the cadavers dissected in this study. To our knowledge, there has been no published material regarding the specific clinical significance of the supreme turbinate.

B. Nasolacrimal ostium

The inferior meatus, with the most important structure therein, the nasolacrimal ostium, was observed to be similar in this study and that of the published data. The nasolacrimal ostium is generally found at the highest part of the meatus in its anterior portion approximately 28 mm from the nares. Similar to previous observations, there is a wider diameter of the ostium when placed just below the attached border of the inferior turbinate. When located lower in the lateral wall of the inferior meatus, it is slit-like, collapsed and guarded by a fold of mucous membrane called the plica lacrimalis or valve of Hasner. The latter was observed in one of the cadavers (Figure 4g) although the nasolacrimal ostium was most commonly found just below the bend of the attached inferior turbinate anteriorly.

Costen pointed out that accessory openings into the antrum through the inferior meatus should be made as far back as possible in order to avoid scarring or destruction of the nasolacrimal ostium. The suggestion of Ritter to do an antrostomy at the upper central part of the meatus because of the thin bone in this area may prove a safe and practical as it avoids injury to the nasolacrimal ostium.

C. Ostium of the maxillary siun

In conformity with the classic description of the maxillary ostium, it was found in this study to be round or oval, approximately 4 mm in diameter. The smallest diameter was 1.59 mm. This is important when one contemplates designing a cannula specifically for Filipinos.

Myerson (1931) stated that the maxillary ostium occupies a vertical, horizontal, or oblique position in the infundibulum. He was able to cannulate successfully 138 of 170 maxillary ostia (82%). Ninety-eight (71%) were verticall placed, 34 (25%) horizontal, and 6 (4%) were obliquely placed. Comparing these with the results of this study, 28 (56%) were vertically placed, 13 (26%) horizontal and 9 (18%) were obliquely placed. This variation in position among Filipinos should be borne in mind in any attempt to catheterize the ostium such that unnecessary bruising and trauma in this area are avoided.

Another important variation is the position of the maxillary ostium in relation to the length of the infundibulum. Variation in the position of the ostium whether in the anterior, middle or posterior third of the ethmoidal infundibulum was cited by Van Alyea (Figure 3). In his analysis,of 163 specimens, 9 (5.5%) were anteriorly located in the uncinate groove, 18 (11%) in the middle third and 117 (71.8%) were in the posterior third. However, he found 19 ostia with opening into the posterior tip of the groove, unhidden by the uncinate process. In this study, 4 (8%) were anteriorly located, 22 (44%) in the middle third and 24 (48%) were in the posterior third. In no case was the ostium found to open beyond the posterior edge of the uncinate process. The greater percentage of ostia placed in the middle third in Filipino cadavers suggests better accessibility of the maxillary ostium for cannulation as compared to Caucasians.

Variations in the configuration of the infundibulum as well as the relation between the ethmoidal bulla and the uncinate process have also been cited by Van Alyea. Figure 2 shows the different observations Van Alyea noted. He reported a 25% incidence of pattern C where the hiatus was quite narrow. In this study, the most common observation was pattern A where there is a moderately tall uncinate process with a moderately wide hiatus in 26 (52%) of cases. There is extreme development of the uncinate process in 9 (18%), a narrow hiatus in 4 (8%) as well as a prominent and overchanging ethmoidal bulla in 8 (16%) of cases. The ethmoidal bulla was in actual contact with the uncinate process in 1 cadaver (2%). It is clear from these figures that in about 44% of cases, probing the ostium would be very difficult if not almost impossible in the living. The accessibility of the maxillary ostium is of utmost clinical imortance. A successful catheterization and lavage of the maxillary sinus through the natural ostium not only depends on the skill of the

clinician but with the anatomy of the rgion as well. Van Alyea had a similar experience and reported that based on his anatomical study, catheterization of the ostium may be impossible if not at least very dificult in nearby half of the cases.

Lastly, accessory ostia have been noted to be present in the area of the middle meatus. Myerson reported a 30.7% incidence while Van Alyea had 23% incidence in 163 specimens. Its presence was noted in about 8 (16%) of cadavers dissected in this study. Multiple ostia were occasionally found. It is difficult to explain their origin embryologically. Ritter (1978) stated that the likely reason for their existence is that the bone of the middle meatus in the membranous area breaks down as a sequela of infection.

LIMITATIONS OF THE STUDY

It would have been ideal to use fresh cadavers for dissections but there is a problem with acquisition of such in the Philippine setting. As such a certain margin of error with respect to them ucosal configuration of the anatomic structures should be considered. Sagittal sections of fresh cadavers in the morgue are impossible since consent from relatives could not be obtained.

SUMMARY

This study proves that there are notable variations in the anatomy of the lateral wall of Filipino adult cadavers, particularly the osteomeatal complex. These variations included the absence of the supreme turbinate. The accessory ostium in this study is 16% compared to that of Van Alyea (23%) and Myerson (30.7%). The location of the nasolacrimal duct ostium at the anterior end of the inferior turbinate was similarly noted although the incidence of the different variations differ. Similar to published data based on Caucasian cadavers, the maxillary ostium was noted most frequently at the posterior third of the ethmoidal infundibulum and had a vertical orientation. However, the greater incidence of cases wherein the ostium was located in the middle third and an oblique orientation were found in Filipino specimens. Such observations may prove clinically significant in attempts to cannulate the maxillary ostium. The data presented may be of potential use not only to the rhinologist in practice, in his performace of different surgical procedures like antrostomy, foreign body removal, or cannulation. It may also prove valuable in guiding functional sinus endoscopy in Filipinos. Lastly, such data will be utilized in further studies on direct cannulation of the maxillary ostium as well as in designing instruments for access to this critical area of the osteomeatal complex in Filipinos.

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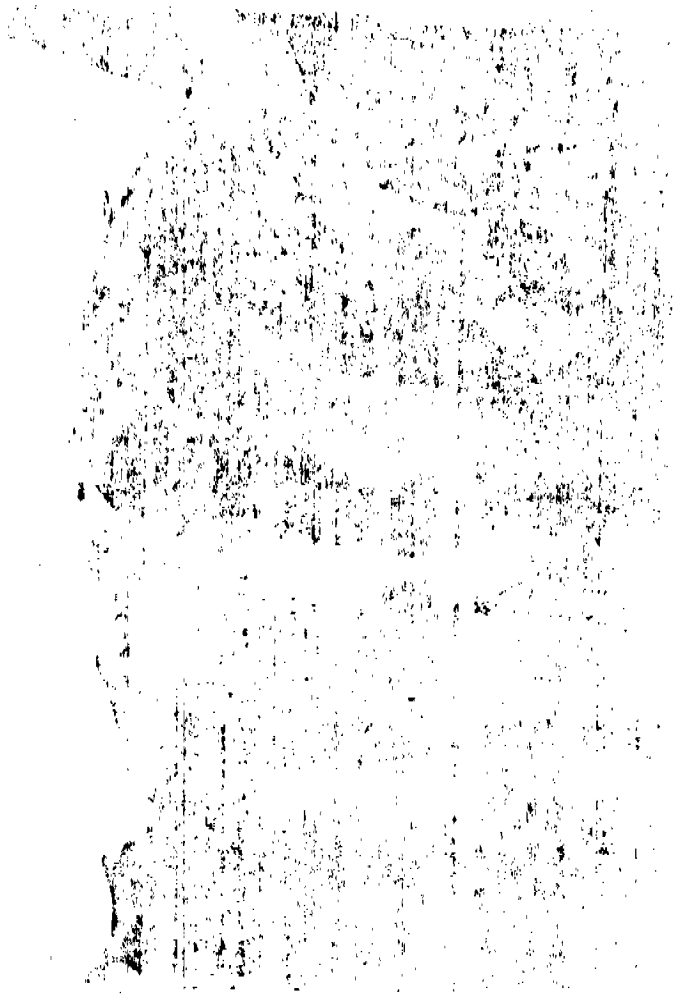

Fig. 2. A large accessory ostium is found postero-inferior to the infundibulum beyond the inferior edge of the middle turbinate.

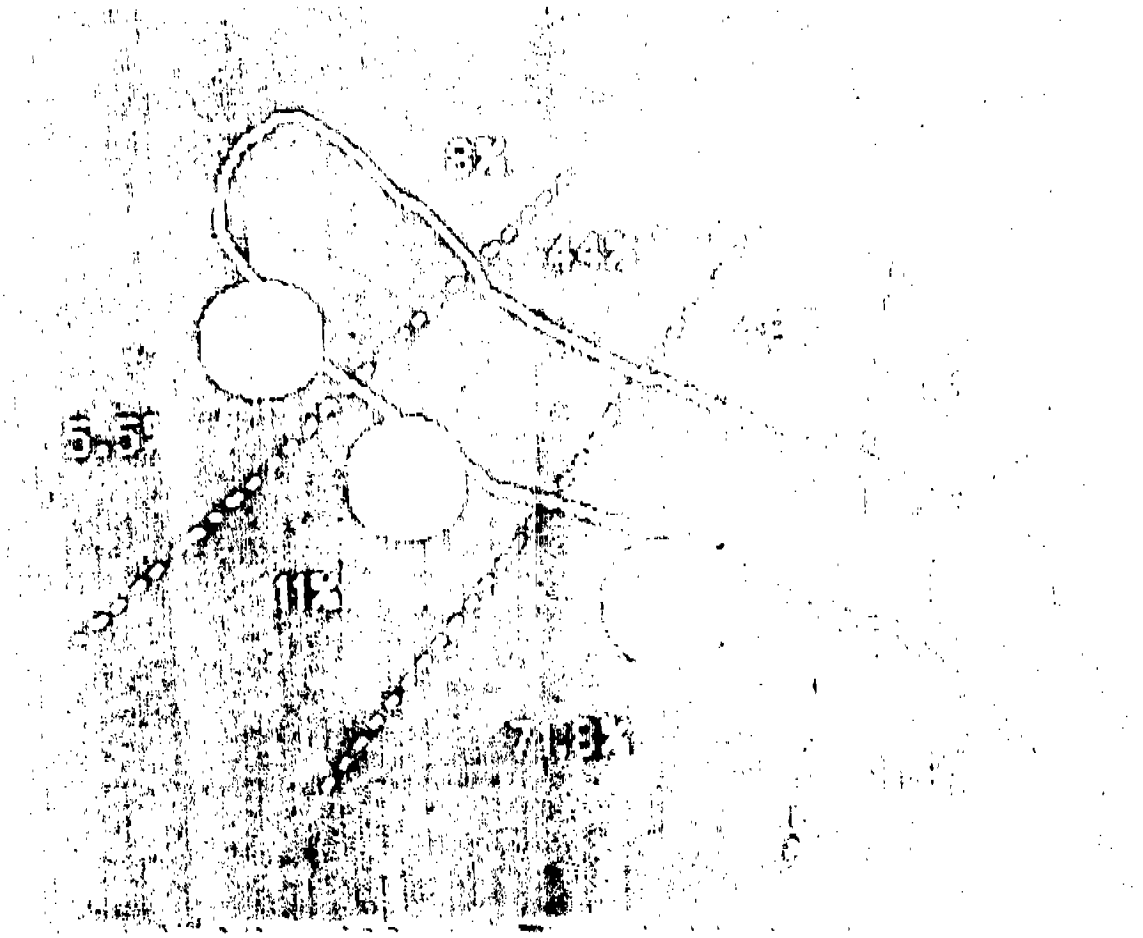

Fig. 3. An illustration showing the location of the maxillary ostium in relation to the infundibulum. The values below are those of Van Alyea in 163 specimens and above are the results in the present study.