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Analysis of Ear, Nose, Throat and Head & Neck Surgery Consultations and Diagnostic Accuracy in a Tertiary Care Hospital of Western Nepal

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ABSTRACT

Introduction

ENT cases are very common accounting for 25-40% of all hospital patient. Subspecialty consultations are a necessary part of comprehensive medical care that provide an opportunity for interactions between doctors and the exchange of knowledge and expertise that helps in quality patient management.

Methods

A descriptive cross-sectional study was conducted among patients asked for consultation in the Department of ENT and Head & Neck Surgery, Manipal Teaching Hospital from March 2022 to November 2022. Diagnosis made by ENT surgeon after relevant investigations was recorded. Analysis of diagnostic accuracy by non-ENT surgeons was carried out.

Results

Out of 8019 cases seen in the department of ENT and Head & Neck Surgery from 15th March 2022 to 25th November 2022, 400 cases were asked for consultations. Consultations were more frequently asked from Internal medicine and subspeciality followed by Emergency and Pediatrics department. The most common complaint in consultation sheet was throat pain. The commonest ENT and Head & Neck Surgery diagnosis was Allergic Rhinitis, followed by Presbyacusis and Acute Tonsillitis. Two hundred and twenty cases were asked for consultations with diagnosis from the primary department, out of which 183 had correct diagnosis.

Conclusions

Different departments do have difficulties in identifying and addressing ENT and Head & Neck Surgery cases and there is benefit from ENT and Head & Neck Surgery consultations. Furthermore, ENT and Head & Neck Surgery consultations do have high educational value for other departments and plays a vital role in patient management.

Keywords: consultation; emergency; inpatient; outpatient.

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INTRODUCTION

Ear, Nose and Throat (ENT) diseases accounts for 25-40% of all hospital patients and are serious public health problems because of their universal distribution, the morbidities which they cause due to inherent physiological function that take place in head and neck region.[1,2] Consultation is the act of seeking assistance from another physician(s) or health care professional(s) for diagnostic studies, therapeutic interventions, or other services that may benefit the patient.[3] Subspecialty consultations are a necessary part of comprehensive medical care and are important in facilitating the exchange of information, knowledge and expertise between doctors that aids in better patient management.[4-6] The objectives of the study are to describe prevalence, pattern and demography of various ENT and HNS (Head and Neck) consultations and to analyze diagnostic accuracy of ENT and HNS related diseases of the referring consultants.

METHODS

This is a descriptive cross-sectional study conducted among patients asked for ENT and HNS consultation from various departments at Manipal College of Medical Sciences from March 2022 to November 2022. Ethical approval was received from the Institutional Review Committee of the Institute. All patients from different departments asked for ENT and HNS consultation irrespective of age and sex and Emergency patients not seen by ENT department were included in the study. Review consultations and consultations where nothing abnormalities detected from ENT and HNS side were excluded from the study.

The sample size was calculated by using formula,

$n = Z^2 \times p \times q / e^2$

$= (1.96)^2 \times (0.5) \times (0.5) / (0.05)^2$

$= 384$

Where,

n = minimum required sample size

Z = 1.96 at 95% Confidence Interval (CI)

p = prevalence taken as 50% for maximum sample size

q = 1-p

e = margin of error, 5%

The calculated sample size was 384. However, the total sample size of 400 was taken. Collected data was entered in Excel sheet. Statistical analysis of the study was carried out for various parameters with appropriate statistical method using Statistical Package for the Social Sciences (SPSS) program.

RESULTS

Total of 8019 cases were seen in the department of ENT & HNS from 15th March 2022 to 25th November 2022. Among them, 400 cases were asked for ENT & HNS consultation in which 185 (46.25%) were males and 215 (53.75%) were females. The minimum age of presentation was 8 months and maximum age was 98 years with a mean age 49.33 of years (Figure 1).

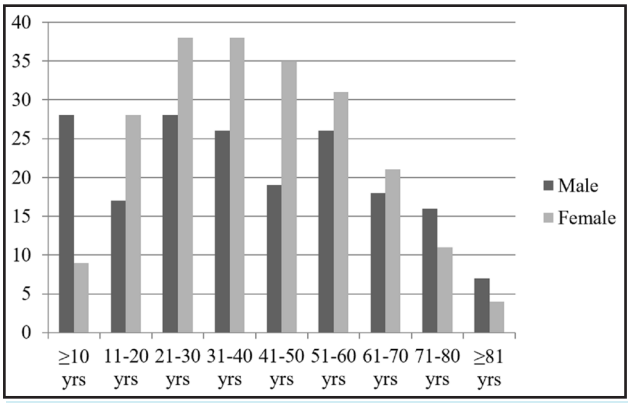

Fig. 1 Age and Sex distribution (n = 400).

Department wise distribution of consultations are summarized in Table 1, showing department of Internal medicine with Subspecialties seeking for maximum number of consultations in 152 (38%), followed by Emergency in 64 (16%) and Pediatrics in 55 (13.75%) cases. The most common primary complaint mentioned in the consultation sheet were throat pain in 45 (11.25%), followed by earache in 37 (9.25%) cases (Table 2). Among 400 consultations, 180 (45%) cases were asked consultations with

Table 1. Distribution of ENT & HNS consultations by requesting department and their diagnostic accuracy.

Department	Total cases asked for consultation	Consultation with diagnosis		
		Correct	Incorrect	Total
Internal medicine with Subspecialties	152 (38%)	49 (77%)	14	63
Emergency	64 (16%)	44 (80%)	8	52
Pediatrics	55 (13.75%)	31 (88%)	4	35
General Surgery with Subspecialties	34 (8.5%)	20 (86%)	3	23
Gynecology and Obstetrics	21 (5.25%)	5 (55%)	4	9
Orthopedics	17 (4.25%)	4 (66%)	2	6
Ophthalmology	14 (3.5%)	9 (90%)	1	10
Dental and Maxillofacial Surgery	12 (3%)	6 (100%)	0	6
Oncology	11 (2.75%)	11 (100%)	0	11
Dermatology	11 (2.75%)	2 (100%)	0	2
Psychiatry	9 (2.25%)	2 (66%)	1	3
Total	400 (100%)	183 (83.18%)	37 (16.82%)	220 (55%)

Table 2. Primary complaint mentioned in the consultation sheet.

Complaint	Frequency (%)
Throat pain	45 (11.25%)
Ear ache	37 (9.25%)
Nasal obstruction	34 (8.50%)
Decreased hearing	31 (7.75%)
Vertigo	26 (6.50%)
Aural fullness	24 (6.00%)
Ear discharge	23 (5.75%)
Nasal discharge	22 (5.50%)
Neck swelling	20 (5.00%)
Sneezing	15 (3.75%)
Nose bleeding	15 (3.75%)
Neck pain	13 (3.25%)
Nasal discharge	12 (3.00%)
Foreign body food passage	11 (2.75%)
Head ache	11 (2.75%)
Throat discomfort	11 (2.75%)
Voice change	10 (2.00%)
Deviation of mouth	9 (2.25%)
Tinnitus	8 (2.00%)
Snoring	7 (1.75%)
Ear Itching	7 (1.75%)
Others	9 (2.25%)
Total	400 (100%)

symptoms only whereas 220 (55%) cases were with diagnosis. Among 220 consultations asked with diagnosis from different departments, primary department made correct diagnosis in 183 (83.18%) cases (Table 1). Final diagnosis by ENT Surgeon based on clinical presentations and relevant investigations, showed Allergic Rhinitis to be the commonest in 28 (7%) cases, followed by Presbyacusis in 21 (5.25%) cases, are summarized in (Table 3). The consultations were 98 (24.5 %) for in-patient cases, 238 (59.5 %) for outpatient cases and 65 (16 %) for Emergency Department cases. Among 400 consultations, 119 cases visited different departments with single ENT & HNS symptom in which 57 (48 %) cases with patient own choice and 62 (52.00 %) cases with hospital reception recommendation (Table 3).

DISCUSSION

In our study, we tried to analyze the various reasons for ENT and HNS consultations and diagnostic accuracy by seeking consultation departments. This allows we doctors to seek the

Table 3. Final ENT & HNS Diagnosis.			
Diagnosis	**Frequency (%)**	**Diagnosis**	**Frequency (%)**
Allergic Rhinitis	28 (7.00%)	Oropharyngeal Apthous Ulcer	9 (2.25%)
Presbyacusis	21 (5.25%)	Chronic Rhinosinusitis	8 (2.00%)
Acute Tonsillitis	20 (5.00%)	Goiter	8 (2.00%)
Wax	19 (4.75%)	Eustachian Tube Dysfunction	8 (2.00%)
Acute Otitis Externa	19 (4.75%)	Soft Tissue Injury Face	8 (2.00%)
Acute Pharyngitis	18 (4.5%)	Bell's Palsy	7 (1.75%)
CSOM "TT"	18 (4.5%)	Laryngitis	7 (1.75%)
BPPV	16 (4.00%)	Otitis Media with Effusion	7 (1.75%)
Epistaxis	14 (3.5%)	Adenoids	7 (1.75%)
Subacute Thyroiditis	13 (3.25%)	Sudden SNHL	6 (1.5%)
DNS	12 (3.00%)	Globus Pharyngeus	6 (1.5%)
Sinonasal polyposis	11 (2.75%)	CSOM "AA"	5 (1.25%)
Nasal Bone Fracture	10 (2.50%)	Otomycosis	5 (1.25%)
Acute Suppurative Otitis Media	10 (2.50%)	Acute Rhinosinusitis	5 (1.25%)
Cervical Lymphadenitis	10 (2.50%)	Foreign Body Nose	5 (1.25%)
Foreign Body Food Passage	10 (2.50%)	Others	50 (12.50%)

advice of colleagues in order to aid treatment decisions whilst also encouraging discussion and learning. In our study of 400 cases, 185 (46.25%) were males and 215 (53.75%) were females. The minimum age of presentation was 8 months and maximum age was 98 years with a mean age 49.33 of years. Similar study done by Mors M. et al.[7] showed 243(46.9%) males and 275 (53.1%) females with mean age of 56 years. A study conducted by Evman et al.[8] titled "distribution of patients referred from the Emergency department to the Otolaryngology" in 50,734 patients showed that 10,136 were referred to the ENT clinic. The five most common diagnoses made were epistaxis 3101(31%), nasal fractures 1620(16%), nasal foreign bodies 927(9%), acute otitis media 632(6%), foreign bodies in the ear 629(6%). In our study, 64 cases were asked for consultation from emergency department. Among them five most common diagnoses made were Epistaxis 11(17.5%), Foreign body food passage 9(14%), Acute Tonsillitis 8(12.5%), Fracture nasal bone 5(8%) and BPPV 4(6.25%). A study conducted by J Kevin et al.[9] in 1491 ENT consultations concluded that 766(51.4%) originated from inpatient department and 725(48.6%) from the emergency department Whereas in our study of 400 ENT consultations, 98(24.5%) originated from Inpatient department, 238(59.5%) from outpatient department and 64(16%) from emergency department. A study by Mors M et al.[7] concluded that Hospital and Emergency department consultations for ENT and HNS services span a wide range of patient complaints with varying degrees of severity and urgency. Out of the 518 ENT consultation notes reviewed, there were 72 different consultation reasons and 110 different diagnoses. The most common reasons for consultations were Epistaxis 66 (12.7%), Dysphagia 34 (6.6%), Dysphonia 25 (4.8%), Angioedema 25 (4.8%) and Otalgia 24 (4.6%). Similarly, a study by Awokola et al.[10] in 508 cases showed five commonest conditions referred to the ORL clinic were chronic rhinosinusitis, impacted cerumen auris, chronic suppurative otitis media, acute suppurative otitis media and foreign body (ear, nose and throat). Of these 508 referrals, 194 (38.2%) were from the Family Medicine clinic with diagnostic accuracy of 55% (106 correct

diagnoses). Similarly, Lukama L et al.[11] in their study concluded 67.4% (n = 916) of all referral diagnoses did not match the ENT specialists with most (36.5%, n = 333) of the misdiagnosed patients had sinonasal diseases and the least (26.2%, n = 239) had ear diseases. Whereas in our study we found 44 different consultation reasons and 39 different diagnoses with Throat pain 45(11.25%). Ear ache 37(9.25%), Nasal obstruction 34(8.5%). Decreased hearing 31 (7.75%) and Vertigo 26 (6.5%) being five common reasons for consultations. The diagnosis accuracy of three main departments seeking ENT consultations were Internal medicine with Subspecialties 78% (49/63), Emergency Department 85% (44/52) and Pediatric 89% (31/35).

CONCLUSIONS

Non-ENT Departments have difficulties in identifying and addressing ENT and HNS conditions and there is clear benefit from ENT and HNS consultations. Furthermore, ENT and HNS consultations have been reported to have high educational value for non-ENT Surgeon. Because of recent changes in the way health care need and delivery is assessed, it would be of interest to doctors and policy makers to know the reasons for ENT and HNS consultations and its impact on patient care. Multicenter study with larger sample size for longer duration and follow-ups will help to address the importance of ENT and HNS consultations.

Limitations

This study was conducted in less duration with less sample size which was the major limitations. Additionally, we were unable to determine the effects of ENT consultations on patient's duration of hospital stay and cost factors. The trends seen at our institution may not necessary reflect those of other institutions because of less number of similar studies.

Conflict of interest: None

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