2-2022

Otorhinolaryngology consultations in a multidisciplinary hospital - their effects on residents training on floor

Ambreen Abdullah Unar

Muhammad Hammad Deewani

Mohammad Sohail Awan

Syeda Amrah Hashmi

Abdul Basit Shah Vardag

See next page for additional authors

Authors

Ambreen Abdullah Unar, Muhammad Hammad Deewani, Mohammad Sohail Awan, Syeda Amrah Hashmi, Abdul Basit Shah Vardag, and Ainulakbar Mughal

Otorhinolaryngology consultations in a multidisciplinary hospital — their effects on residents training on floor

Article *in* Journal of the Pakistan Medical Association · February 2022

DOI: 10.47391/JPMA.AKU-20

CITATIONS
0

READS
12

6 authors, including:

Sohail Awan
Aga Khan University Hospital, Karachi
86 PUBLICATIONS **744** CITATIONS
SEE PROFILE

Abdul Basit Shah Vardag
Aga Khan University Hospital, Karachi
7 PUBLICATIONS **3** CITATIONS
SEE PROFILE

Ainulakbar Mughal
Aga Khan University, Pakistan
14 PUBLICATIONS **9** CITATIONS
SEE PROFILE

ANALYTICAL STUDY

Otorhinolaryngology consultations in a multidisciplinary hospital — their effects on residents training on floor

Ambreen Abdullah Unar, Muhammad Hammad Deewani, Muhammad Sohail Awan, Syeda Amrah Hashmi, Abdul Basit Shah Vardag, Ainulakbar Mughal

Abstract

Objective: To determine all types and severity of Otolaryngology consultation requests at our tertiary care center and spectral records of problems related to otorhinolaryngology come across initially by residents which will help in re-shaping residency programmes and enhance patient related care.

Methodology: All otorhinolaryngology consultation received over a three-month period were recorded prospectively. Information collected for each encounter included the time, date, reason for consult at primary service and admission with final ENT diagnosis, any surgical or non-surgical intervention, and basic patient demographics.

Results: A total of 127 consults for inpatients were reviewed from April 2020 to June 2020. Out of total, 84 (66.1%) patients were male and 43 (33.8%) were females. Adult patient consultations amounted to 87(68.5%) while 18(14.1%) were in the age range of 6-18 years. Only 4(3.1%) consultations were raised for neonatal patients. Routine consultation were had for 64(50.3%) while 45(35.4%) patients were reviewed as an emergency. Operative interventions were required by 43(33.8%) among which tracheostomy was the most common operative procedure performed in 26(20.7%) patients. If we broadly classified ENT consultations, 40 (31.4%) were of problems related to head and neck region while 38 (29.9%) were related to the laryngology sub-specialty. Most common consultation was for airway assessment in 26(20.7%) patients followed by otorrhoea, in 15 (11.8%) patients.

Conclusion: In inpatients, upper airway assessment, aural discharge and epistaxis were the most frequent complaints for seeking ENT review. This study should prove to be beneficial in forming a curriculum of educational programme for junior residents.

Keywords: Residents training, Consultations, Otorhinolaryngology, Multidisciplinary hospital, Workload. (JPMA 72: S-44 [Suppl. 1]; 2022) **DOI: https://doi.org/10.47391/JPMA.AKU-20**

Introduction

In a large multispecialty hospital, subspecialty consultations play a pivotal role in comprehensive medical care. Appropriate consultation requests placed in both the inpatient and emergency department settings, provide patients with an opportunity to access necessary care and relevant management of their problem by a specialist doctor.[1] Consultation patterns of various surgical specialties such as orthopaedics, urology, vascular surgery and orthopaedic surgery have been reported in literature[2,3] but data regarding otolaryngology/ENT consultation is limited especially in our part of world.

ENT consultations are ordered from ED, ICUs and wards. They have been divided into categories of emergency, urgent and routine requests. Emergencies require immediate attention and intervention which include airway compromise, epistaxis or foreign body impaction, and urgent requests require timely consultation, including cases of inflammation and infection. Routine requests are for consultation of any acute or chronic condition including earache, vertigo or dizziness, among others.[4,5] Usually, ED consultations are given priority and are raised and seen on urgent basis.[6]

Overall, a rise in on-call ENT consultations has been noted. This poses a challenge to proper patient access, physician workloads, and resource allocation.[4] However, a significant problem arises with mismanaged consults as they increase the workload for on-call teams of that specialty as well as lead to poorer patient outcomes due to subsequent improper treatment.[7] This occurs more in overcrowded hospital wards specially in Emergency Departments where a significant number of patients with ENT complaints do not require ENT consultation but rather direct departmental management.[5] Due to lack of data on patterns of in-hospital consultation for common complaints, and low knowledge on management skills of emergency cases, there is a dire need to identify the causes for rectification.[8]

This study will quantify and analyze inpatient consultations, their complexity and ultimate need of any intervention required in a tertiary care Centre. Eventually a

Department of Surgery, Aga Khan University Hospital, Karachi, Pakistan.
Correspondence: Ambreen Abdullah Unar. Email: ambreen.unar@aku.edu

pattern for training the in-hospital staff and manage the consultation process to ensure efficient interdepartmental functioning will be evolved.

Methods

A cross-sectional study was done in otorhinolaryngology section of Aga Khan University Hospital, Karachi after taking an exemption from Ethical Review Committee (ERC). All ENT consultations, including inpatient, raised over a period of 3 months from January 2021 to March 2021 was recorded prospectively. Non-probability consecutive sampling was used for collection of data.

Apart from basic demographic details of patients, the details of each request included the nature of consult, the requesting department, the post consultation diagnosis, and any intervention given. Duplicate consultation consults for dental problems, incorrect surgical service, consultations, records with insufficient information and consultations raised from emergency department were excluded.

All data was accessible only to the primary investigator and identity of all patients was protected by assigning a study code to specific medical record number.

At our center, all Otorhinolaryngology consultation requests assigned to the department, are received on a consult pager. All this data is recorded daily before morning rounds. The same manner was applied to collect this data and there was no interaction with any patient on this account. The on-call ENT team comprises of a senior resident (PGY-III or above) and a junior resident. All consultations are usually first seen by junior residents followed by assessment from a senior resident thus making junior residents as the first responders of any consultation. All Consultations are reviewed by attending to them either on the same day or next day, depending upon the nature of the problem. All consults are evaluated by faculty either on the same day, or within a 24-hour period, depending on the urgency level of the consult. All consultation requests are given a management plan after discussion or once reviewed by attending consultant assigned as per consultant on-call Rota.

Data was categorized based upon nature and reason of consultation, age groups and type of Otorhinolaryngology intervention. Data Analysis was performed using software SPSS version 23. Characteristics of consultation were described in various categories such as age groups, gender, nature of consult and all the categorical variables were calculated as frequency and percentages.

Results

A total of one-twenty-seven consultation requests were raised during the period of 3-months. Out of the total, 84(66.1%) patients were male and 43(33.8%) were for female patients. For ease of data analysis, we divided patients in range of following age groups, neonatal group, infant group, 1 year to 6 years, 6 years to 18 years and adult group of patients. Adult consultations were for 87(68.5%) while 18 (14.1%) patients were in 6-18 years of range. Only 4 (3.1%) consultations were raised for neonatal patients. Routine consults were 64(50.3%)

Table-1: Reason of consultation.

Reason for Consultation	Consults (n= 127)
Airway Assessment/Stridor	26 (20.4%)
Otorrhoea	15 (11.8%)
Neck Swelling	12 (9.4%)
Hearing Loss/Tinnitus/Vertigo	12 (9.4%)
Sinus Infection	11 (8.6%)
Epistaxis	10 (7.8%)
Decannulation of Tracheostomy	09 (7.08%)
Ear Blockage/Ear Wax	07 (5.5%)
Oral Bleed	06 (4.7%)
Sore Throat	05 (3.9%)
Otalgia	05 (3.9%)
Foreign Body ENT	03 (2.3%)
Accidental Dislodgement of tracheostomy Tube	02 (1.5%)
Others	04 (3.1%)

Table-2: Type of intervention.

Type of intervention	Total Consults (n=127)
Operative	43 (33.8%)
Non-operative	84 (66.1%)

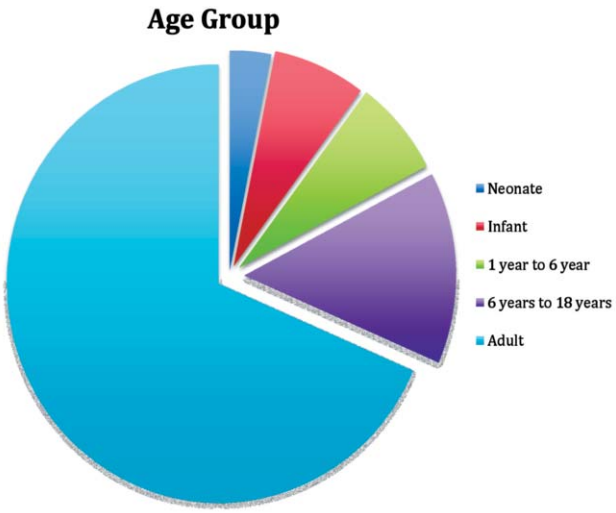

Figure-1: Age group of patients needed ENT consultations.

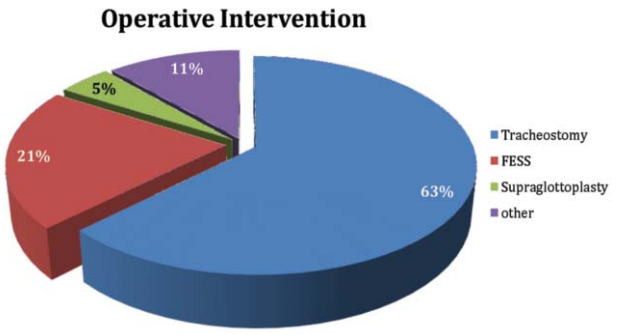

Figure-2: Operative intervention procedure.

which were seen within 24 hours while 45 (35.4%) patients were reviewed as an Emergency. Operative interventions were required by 43(33.8) patients with tracheostomy being the most common operative procedure done in 26(20.7%) patients. If broadly classified ENT consultations, 40 (31.4%) were of problems related to head and neck region while 38 (29.9%) were related to laryngology sub-specialty. Most common consultation was for airway assessment in 26(20.7%) patients, while second most common was of otorrhoea in 15(11.8%) patients.

Discussion

An in-house otorhinolaryngologist cover at all times is essential for a tertiary care hospital. For a well-rounded service, subspecialty consultation is of utmost importance. This elevates the care of patients to a multimodality level thus enabling the primary care physicians to approach and treat patients with multiple issues. The importance of otolaryngology in primary care has been already established.[9,10] Common complaints usually include various acute and chronic ear symptoms as otitis, spinning sensations, airway, nose, neck and throat related issues, hoarseness, and nasal bleeding. Common complaints generally include various acute and chronic ear diseases, such as otitis media, spinning sensations and problems related to the airway like stridor. Symptoms related to the voice as hoarseness, to the nose like epistaxis and to the neck. These are widely prevalent in our population leading to an increased burden on health care.[5,9,11] Otorhinolaryngology complaints are responsible for 20 percent of all presentations to primary care centres in adults and up to 50% in paediatric patients.[4,9,10] With increasing mismanagement in inpatient clinics, patients come for common complaints to the emergency, where ENT consults are placed. This increases workload as well as affects resource allocation which is negatively impacting health care.[4]

The trends seen in consults are different worldwide. Especially since the COVID pandemic, their concerns have increased to be the most in intensive care units. Shomoroney et.al reported it to be 54% of all consults received. Among the categories of consultations, the recent trend has also shifted to most cases being referred for airway management in particular for tracheostomy, and rhinology especially fungal sinusitis.[12] This is consistent with management of COVID and post covid sequelae.

A lack of knowledge has been identified in primary care practitioners in being able to deal these issues directly.[13] Currently, in the residency programmes, management of common issues have been included, besides those specific to the specialty. But the aspects of basic otorhinolaryngology training in the overall curriculum has been overshadowed by inconsistency and a lack of structure in residency programmes. The focus has been placed on evidence-based practice.[14] Due to this deficiency of expertise in management, the consults get postponed, instead of receiving direct management. Furthermore to develop a high quality care and patient centric services for otorhinolaryngology, improved education and training is of pivotal importance. It will also enable residents to deal with basic otolaryngological issues, instead of writing referrals.[14,15] Hence increased teaching should be made during medical school and residency.[8]

There is not much of literature regarding otolaryngologic consultations in a tertiary care setting. For the ENT trainees, a consult is an "unplanned" clinical activity. Nevertheless, they are indispensable for patients with airway emergencies. While available for other specialties, sparse literature is present highlighting the importance of this "hidden" workload of an otorhinolaryngology resident, which can have an effect on their performance.[4,16,17] In a cross-sectional retrospective study, Kristine Smith et al demonstrated significant increase in the volume of consultations to on-call resident at a tertiary care center and she concluded that this load has the potential to adversely affect patient care.[4] Otorhinolaryngologist must be accessible since they cover different sites, and urgent versus emergent services are required on a nearly daily basis. If this accessibility is limited, then hospital discharge could be delayed unnecessarily, leading to additional negative consequences.[18,19]

Our study reviewed characteristics of ENT consultation raised for in-patients in a tertiary care setting and includes nature of consult and whether it needed any intervention or not. The four most common reasons for ENT consultations were upper airway evaluation, otorrhoea, neck swelling, vertigo, and sinusitis.

Furthermore the most common operative intervention done in our patients was tracheostomy. New residents are often uncomfortable performing flexible laryngoscopy, anterior nasal packing, decannulation and change of tracheostomy tube. Most consultation requests, once placed, are initially seen, and managed by the junior residents, who invariably require assistance from the senior residents for simple bedside procedures. It is not only increasing the workload at all residents' levels but also increasing cost of health care provision on patients in a low middle-income country. In a similar study conducted at department of otorhinolaryngology SUNY upstate medical university, New York, Erica et al[20] retrospectively reviewed patients who received ENT consultations from 2014 to 2018. In this series 8806 consults were noted. They concluded that increasing burden on emergency department consultations on ENT service at academic medical centers highlights a potential cause for increasing and improving provider availability. However, frequent and unnecessary inpatient consultation can significantly increase workload of on-call residents and overall services.

Patients with non-emergency issues like ear discharge, allergies, or hoarseness are identified as common reasons of consultations. These problems can be better assessed and sorted in the clinical setting, suggesting further towards the presence of unnecessary consultations. We recognize that while the true necessity of a consultation is subjective, the need for ENT intervention is a more quantifiable surrogate to determining the overall relevance of the placed consult. In our series, 84 (66.4%) consults did not require any operative or bedside intervention. We did an operative intervention on 43(33.8%) consultations and most performed procedures were elective tracheostomy done on 26 (20.7%) patients while 5(3.9%) underwent endoscopic sinus surgery. This is consistent with the research done in other regions, showing a need for change in managing the consultation process.

Thus, it is suggested that for most common encounters, including basics of tracheotomy care, flexible laryngoscopy, expertise in interpretations of scans of head and neck region and the method required to perform it, anterior and posterior nasal packing, among others, management teaching should be started immediately. Having residents better equipped to deal such encounters themselves will refine the consultation process and improve the balance of workload.

Conclusion

Although our study is based on a single tertiary care setting but it can definitely impart a significant contribution to the scanty literature present on this topic and it can be used to design educational curriculum not only for residents in ENT training to have command on commonly encountered consultations but also for other services in order to have enough knowledge of basic otorhinolaryngology problems so unnecessary consultations and referral and ultimately patient's hospital stay can be lowered down.

Conflict of Interests: None to declare

Disclosure: None to declare

Funding Source: None to declare

References

1. Choi KJ, Kahmke RR, Crowson MG, Puscas L, Scher RL, Cohen SM. Trends in Otolaryngology Consultation Patterns at an Academic Quaternary Care Center. JAMA Otolaryngol Head Neck Surg 2017;143:472-7. doi: 10.1001/jamaoto.2016.4056.
2. Koh CE, Walker SR. Vascular surgery consults: a significant workload. ANZ J Surg 2007;77:352-4. doi: 10.1111/j.1445-2197.2007.04058.x.
3. O'Malley NT, O'Daly B, Harty JA, Quinlan W. Inpatient consultations to an orthopaedic service: the hidden workload. Ir J Med Sci 2011;180:855-8. doi: 10.1007/s11845-011-0729-x.
4. Smith KA, Hinther AV, Brookes J, Matthews TW, Dort JC. An Evaluation of On-Call Otolaryngology Consultations: Assessing an Increasing Workload. Ann Otol Rhinol Laryngol 2018;127:450-5. doi: 10.1177/0003489418776670.
5. Garneau JC, Wasserman I, Konuthula N, Malkin BD. Referral patterns from emergency department to otolaryngology clinic. Laryngoscope 2018;128:1062-7. doi: 10.1002/lary.26868.
6. Yang KK, Lam SS, Low JM, Ong ME. Managing emergency department crowding through improved triaging and resource allocation. Oper Res Health Care 2016;10:13-22. Doi: 10.1016/j.orhc.2016.05.001
7. Mengin AC, Kayser C, Tuzin N, Perruisseau-Carrier J, Charpiot A, Berna F, et al. Mindfulness Improves Otolaryngology Residents' Performance in a Simulated Bad-News Consultation: A Pilot Study. J Surg Educ 2021;78:1357-65. doi: 10.1016/j.jsurg.2020.11.009.
8. Hu A, Sardesai MG, Meyer TK. A need for otolaryngology education among primary care providers. Med Educ Online 2012;17:e17350. doi: 10.3402/meo.v17i0.17350.
9. Griffiths E. Incidence of ENT problems in general practice. J R Soc Med 1979;72:740-2.
10. Hannaford PC, Simpson JA, Bisset AF, Davis A, McKerrow W, Mills R. The prevalence of ear, nose and throat problems in the community: results from a national cross-sectional postal survey in Scotland. Fam Pract 2005;22:227-33. doi: 10.1093/fampra/cmi004.
11. Ansari RA. Evaluation of clinical profile of patients visited in ENT department. J Adv Med Dent Scie Res 2019;7:68-71. Doi: 10.21276/jamdsr
12. Shomorony A, Chern A, Long SM, Feit NZ, Ballakur SS, Gadjiko M, et al. Essential inpatient otolaryngology: what COVID-19 has revealed. Eur Arch Otorhinolaryngol 2021:1-10. doi: 10.1007/s00405-021-06963-7. [ahead of print]

13. Dinsdale E, Hannigan A, O'Connor R, O'Doherty J, Glynn L, Casey M, et al. Communication between primary and secondary care: deficits and danger. Fam Pract 2020;37:63-8. doi: 10.1093/fampra/cmz037.
14. Dimitrov L, Unadkat S, Khanna A, Rennie C, Saleh H. ENT training amongst general practitioners: results from a questionnaire. J Laryngol Otol 2020:1-7. doi: 10.1017/S0022215120000201. [ahead of print]
15. Šurda P, Barac A, Deghani PM, Jacques T, Langdon C, Pimentel J, et al. Training in ENT; a comprehensive review of existing evidence. Rhinol Online 2018;1:77-84. Doi: 10.4193/RHINOL/18.027
16. Kazmi Z, Khan K, Ather MH. The Hidden Work of Urology Residents - A Cross-Sectional Study. Cureus 2020;12:e10668. doi: 10.7759/cureus.10668.
17. Sullivan JF, Forde JC, Creagh TA, Donovan MG, Eng MP, Hickey DP, et al. A review of inpatient urology consultations in an Irish tertiary referral centre. Surgeon 2013;11:300-3. doi: 10.1016/j.surge.2013.06.003.
18. Toh HJ, Lim ZY, Yap P, Tang T. Factors associated with prolonged length of stay in older patients. Singapore Med J 2017;58:134-8. doi: 10.11622/smedj.2016158.
19. Hall R, Belson D, Murali P, Dessouky M. Modeling patient flows through the healthcare system. In: Hall RW, eds. Patient flow: Reducing delay in healthcare delivery. New York, USA: Springer Science + Business Media, LLC, 2006; pp 1-44.
20. Sher E, Nicholas B. Trends in otolaryngology consult volume at an academic institution from 2014 to 2018. Laryngoscope Investig Otolaryngol 2020;5:813-8. doi: 10.1002/lio2.422.