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Original Article

Ear, Nose and Throat Section

Retrospective Analysis of Otorhinolaryngology Related Elective Surgeries Performed in a Tertiary Care Centre, North Kerala, India

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ABSTRACT

Introduction: Due to a better understanding of the disease process, surgical workshops, conferences, and better patient awareness, the trend of Ear Nose Throat (ENT) related surgeries has changed significantly over the years.

Aim: To analyse the profile of various ENT-related elective surgeries performed over three years in a tertiary care centre.

Materials and Methods: This retrospective observational study was conducted in the Department of ENT, in a tertiary care centre, North Kerala, India. Patients of both sexes and of all age groups who underwent elective ENT surgeries in the Department from January 2017- December 2019 were included in the study. Data analysis was done from 1/12/2020 to 1/6/2021 period. Emergency surgeries were excluded from the study. Data was collected from hospital records and analysed using appropriate statistical methods.

Results: A total of 2895 patients underwent various major and minor procedures in the period of January 2017 to December 2019 in the study institute. The majority of procedures were tympanomastoid surgeries (n=896, 30.94%), which were followed by sinonasal surgeries including advanced endoscopic surgeries (n=670, 23.14%), tonsilloadenoid surgeries (n=550, 18.98%) and excision of various solid and cystic lesions from head and neck region (n=310, 10.70%). The remaining number contributed by various other procedures like laryngeal surgeries (n=99, 3.4%) and other miscellaneous procedures (n=370, 12.78%) which include preauricular sinus excision, punch biopsies, tongue tie release, styloidectomy, excision of rhinosporidiosis from nose and nasopharynx, nasal bone fracture reduction and young's operation.

Conclusion: The most common elective procedures performed in the study period were tympanomastoid surgeries. In the present study, there was an increasing trend of all major and minor surgeries in the department in subsequent years.

Keywords: Ear, nose and throat related surgeries, Increasing trend, Infrastructure facility, Tympanomastoid surgeries

INTRODUCTION

Due to better understanding of the disease process, surgical workshops, conferences, and better patient awareness, the trend of Ear, Nose and Throat (ENT)-related surgeries has changed significantly over the years. There is a general trend of affordable patient population's preference to specialty ENT centres in recent years [1].

Otorhinolaryngology is one of the specialties which are an advancing in leaps and bounds over the past few decades. Different types of otorhinolaryngology related surgeries both major (such as tympanomastoid surgeries, sinonasal surgeries, head and neck surgeries, and removal of aerodigestive tract foreign bodies) and minor (such as diagnostic nasal endoscopies, otoendoscopies, surgeries for nasal trauma and biopsies) are performed by ENT surgeons daily. Although adenotonsillectomies were one of the most commonly performed ENT surgeries worldwide, various studies show that the rate of this procedure has sharply declined recently [2-6]. Some studies show that there is a declining trend in mastoid surgeries [7]. The increased performance of sinus surgeries in recent years might be because of a better understanding of anatomy and due to the evolution of newer techniques [8,9]. There is also an increased rate of skull base procedures performed by ENT surgeons because of a better understanding of endoscopic skull base anatomy and the availability of newer technology like navigation systems.

In this study, authors attempted to analyse the profile of various ENT-related elective surgeries performed over three years in a tertiary care centre, North Kerala, India. This kind of study will be useful for young ENT surgeons to choose their field of fellowship and also confirm whether the available infrastructural facilities are getting utilised effectively.

MATERIALS AND METHODS

This retrospective observational study was conducted in the Department of ENT, in a tertiary care centre in the government sector, North Kerala, India from January 2017 to December 2019. Data analysis was done from 1st December 2020 to 1st June 2021 period. Institutional Ethical Committee (Ref no-IEC/GMCM/54 dated 19/11/2020) approval was obtained.

Inclusion criteria: Patients of all age groups and of both sexes who underwent elective ENT surgeries (both major and minor) in the department were included in this study.

Exclusion criteria: Patients who underwent emergency surgeries were excluded from the study.

Major surgeries include tympanomastoid surgeries, sinonasal surgeries, tonsilloadenoid surgeries, laryngeal surgeries, excision of various solid and cystic lesions from head and neck region, styloidectomy and rhinosporidiosis mass excision from nose and nasopharynx. Minor surgeries include preauricular sinus excision, punch biopsy, tongue tie release, nasal bone fracture reduction, and young's operation.

STATISTICAL ANALYSIS

Data were collected from hospital records, entered in Microsoft excel software, and analysed using Statistical Package for the Social Sciences (SPSS) software trial version to find the percentage of each procedure out of the total procedures.

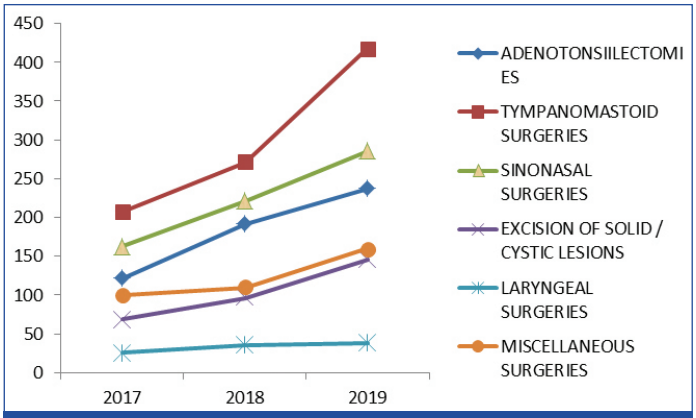
RESULTS

Total 2895 patients underwent various major and minor procedures in the study period. Out of 2895 patients 1852 (63.9%) were females and 1043 (36.02%) were males with male to female ratio of 1:1.78.

Total number of procedures done in 2017, 2018 and 2019 were 687, 924 and 1284, respectively. Majority of procedures were tympanomastoid surgeries (n=896, 30.94%) which was followed by sinonasal surgeries including advanced endoscopic surgeries (n=670, 23.14%), tonsilloadenoid surgeries (n=550, 18.98%) and excision of various solid and cystic lesions from head and neck region (n=310, 10.70%) [Table/Fig-1]. The number of procedures done in subsequent years was found to be in an increasing trend [Table/Fig-2].

Surgeries performed	2017	2018	2019	Total
Tympanomastoid surgeries	207 (7.15%)	271 (9.36%)	418 (14.43%)	896 (30.94%)
Sinonasal surgeries	163 (5.63%)	221 (7.64%)	286 (9.87%)	670 (23.14%)
Tonsilloadenoid surgeries	122 (4.21%)	191 (6.59%)	237 (8.18%)	550 (18.98%)
Excision of solid/ cystic lesion from head and neck region	69 (2.38%)	96 (3.31%)	145 (5%)	310 (10.70%)
Laryngeal surgeries	26 (0.89%)	35 (1.20%)	38 (1.31%)	99 (3.4%)
Miscellaneous surgeries	100 (3.45%)	110 (3.80%)	160 (5.52%)	370 (12.78%)
Punch biopsy	28 (0.97%)	28 (0.97%)	48 (1.65%)	104 (3.60%)
Preauricular sinus excision	7 (0.24%)	11 (0.38%)	13 (0.45%)	31 (1.07%)
Tongue tie release	48 (1.66%)	43 (1.48%)	58 (2%)	149 (5.14%)
Nasal bone fracture reduction	8 (0.27%)	16 (0.55%)	28 (0.97%)	52 (1.80%)
Rhinosporidiosis mass excision	9 (0.31%)	11 (0.38%)	12 (0.41%)	32 (1.10%)
Styloidectomy	0	1 (0.03%)	0	1 (0.03%)
Young's operation	0	0	1 (0.03%)	1 (0.03)
Total	687 (23.73%)	924 (31.92%)	1284 (44.35%)	2895

[Table/Fig-1]: Year-wise distribution of various surgeries.
Results were presented as n (%)



[Table/Fig-2]: Line graph showing the trend of different surgeries over three years period (X-axis represents- number of years and Y-axis represents- number of patients).

Various tympanomastoid surgeries performed, of which 457 (15.78%) were tympanoplasty, 345 (11.92%) were cortical mastoidectomy with tympanoplasty, 46 (1.59%) were modified radical mastoidectomy, 23 (0.79%) were stapedotomy and 25 (0.86%) were myringotomy with grommet insertion.

Sinonasal surgeries performed were septal correction (n=375, 12.98%), septal correction with Functional Endoscopic Sinus Surgery (FESS) (n=49, 1.69%), FESS without septal correction (n=191, 6.60%), and Endoscopic Dacryocystorhinostomy (DCR) (n=53, 1.83%). Advanced endoscopic surgeries included skull base repair (n=1, 0.034%) and endoscopic medial maxillectomy (n=1, 0.034%).

Total 550 patients underwent tonsilloadenoid surgeries. Out of this 54 was tonsillectomy (1.86%), 227 was adenoidectomy (7.84%), and 269 was adenotonsillectomy (9.29%). Various laryngeal surgeries performed include direct laryngoscopy and biopsy in 65 (2.24%) patients and microlaryngeal surgeries in 34 (1.17%) patients.

Excision of solid and cystic lesions from head and neck region includes mucous retention cyst (n=102, 3.5%), cervical lymph node (n=78, 2.6%), lipoma (n=48, 1.6%), sebaceous cyst (n=64, 2.2%), superficial parotidectomy (n=10, 0.35%), submandibular gland excision (n=4, 0.13%) and sistrunk operation (n=4, 0.13).

DISCUSSION

The institute is a tertiary care centre in the government sector located in North Kerala, India. Authors are performing various major and minor surgeries in the department for the last seven years. For the last three years, authors have observed that there was a trend of increasing preference of the general population in the area to the study centre for various ENT-related procedures; even though there are specialty ENT centres in the surrounding area. This is probably because of the availability of better infrastructural facilities in the department and also because of the unaffordability of the treatment cost in specialty ENT centres of the private sector to general population.

During the three years study period, authors performed a total of 2895 elective surgical procedures which include both major and minor surgeries. Out of this most commonly performed surgery was tympanoplasty (27.7% of total procedures). Of which 15.78% of the total procedures was tympanoplasty alone, 11.92% of the total procedure was cortical mastoidectomy with tympanoplasty. In a study performed by Singh VP and Kalra SP tympanoplasty was one of the most commonly performed procedures [10]. In a study performed by Eskander A et al., they found tympanomastoid surgeries are in a decreasing trend [11]. In the present study, tympanomastoid surgeries were in increasing trend, probably due to increasing patient load and surgical workload in the department.

The second most common surgeries performed were sinonasal surgeries. Out of this septal correction was most common which was followed by FESS. In a study conducted by Anekpo CC and Okpara TC the most common sinonasal surgeries performed was nasal polypectomy (2.7%) which is followed by septoplasty (1.3%) and foreign body removal from nasal cavity (1.3%) [12]. In the present study, authors did not include aerodigestive tract foreign body removal as a study subject, as it is an emergency procedure.

In a study performed by Douglas CM et al., in the Scottish population found that the rate of adenotonsillectomies was on decreasing trend [13]. But in a study performed by Erickson BK et al., found an increasing trend of adenotonsillectomies [14]. In the present study, tonsilloadenoid surgeries were the third most common procedures performed and there is an increasing trend of these procedures every year which could be a reflection of the increase in the number of total procedures done every year.

Koirala KP in his study of 945 patients found an increase in the number of excision of various solid and cystic lesions from head and neck region during the study period [1]. In the present study also, an increase in trend of these procedures during the study period. This might be because of fear of cancer in these type of lesions and better patient awareness regarding head and neck malignancies. This may be tempting patients to seek treatment at the earliest.

Voice disorders that affect adults and children have different causes and sometimes not properly recognised by indirect laryngoscopy and video laryngoscopy. In these cases, they may require microlaryngoscopic examination and biopsy of suspicious lesion and areas like hidden areas of larynx [15].

Limitation(s)

The present study included profile of only various elective surgeries performed during the study period. The influence of improvement in the infrastructural facilities on the outcome of these procedures was not accessed in this study.

CONCLUSION(S)

There is an increasing trend of all major and minor surgeries in the department in subsequent years. The most common elective procedures performed in the study period were tympanomastoid surgeries which were followed by sinonasal surgeries and tonsilloadenoid surgeries. The increase in the number procedures might be due to better awareness of population regarding disease process and improvement of the infrastructural facilities in the department for dealing with more complicated cases.

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