



Pattern of ENT Emergencies in Tertiary Level Hospital

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Article information

Received: 11-11-2021

Accepted: 05-12-2021

Cite this article:

Islam MS, Islam MR, Siddique MA, Alam MR, Rahman MM, Afrin A, Islam MN, Ahasan SA, Munshi MDH. Pattern of ENT Emergencies in Tertiary Level Hospital. Sir Salimullah Med Coll J 2022; 30: 67-74

Key words:

Emergency, Epistaxis, Foreign body.

Abstract

Background: Emergencies in ENT practice has a wide spectrum and management of each condition requires specialized skills. Crucial decisions are necessary to save patients life in hurried situations.

Objectives: This study is carried out with an objective to find out pattern of ENT emergencies in tertiary level hospital.

Methods: This is a cross sectional study was done in two major tertiary level hospitals (Dhaka Medical College Hospital, Sir Salimullah Medical College Mitford Hospital) of Dhaka, Bangladesh. This study was conducted in a period of six months and took into account all inpatient and outpatient emergencies in this period. These included 496 patients either admitted as emergency or took emergency treatment without admission from department of ENT and Head-Neck surgery of two tertiary level hospitals.

Results: 496 patients of between age ranges 2 months-80 years with a mean age 26.3 years were included. Male female ratio was 1.9:1.55.65% patients are from rural area. The total throat related cases were maximum (40.52%) in comparison to ear (32.26%) and nose (27.22%). Inflammatory condition in pharynx (46.27%) is the most common among throat related emergencies, followed by foreign body in throat (32.26%). Fish bone impaction is the most common (33.36%) emergencies among foreign body in throat. Foreign body in throat was mostly seen in 0 to 10 age group. Acute upper respiratory tract infection is the highest (27.96%) among the pharyngeal emergencies. Laryngeal emergencies with stridor were most common (47.62%) among laryngeal, tracheal and bronchial emergencies other than foreign body. Among the otological emergencies external ear emergencies other than foreign body (40%) was most common. Vegetables foreign body in the ear was most common (40%) among the foreign body in ear. Foreign body in ear mostly found in 0 to 10 age group. Traumatic injury to external ear is the most common (18.75%) among external ear emergencies other than foreign body. Among the sinonasal emergencies epistaxis was most common (39.26%). Most of the cases were managed surgically (71.97%) 87.5% cases were recovered from emergencies with overall mortality of (1.21%).

Conclusion: Epistaxis emerged as the leading cause of ENT emergencies followed by foreign body in ENT region. Most of the ENT emergencies were managed surgically under local anaesthesia. So, presence of otolaryngological department in thana and district level hospital could avoid unnecessary referral.

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Introduction:

ENT emergencies cover a wide spectrum of conditions from life threatening airway obstruction to less urgent foreign body in the ear.¹ The horizon of Otolaryngology and Head-Neck surgery keeps expanding all around the globe. In addition to Ear Nose and Throat mouth cavity, neck, scalp must be within the spectrum of loco regional surgeon. Pleura to dura' is often quoted as being the surgical area that is within the remit of Otolaryngology and Head-Neck surgeon.²

The speciality of Otorhinolaryngology is the product of the twentieth century. Otolaryngology and Laryngology had quite different origins. The early otologist were surgeons and used the scalped trephine while the early Laryngologists are physicians.³

With the increasing incidence of road traffic accident, industrial disaster and insurgency the ENT as well as head neck emergencies are on a rise and thus posing a challenging problem to an attending junior doctor.⁴ Among the various diseases some of them are routine and others are 'emergency'. A good deal of clinical skill and judgments is required for diagnosis, evaluation, timely intervention and management of these cases.

The most common ENT emergency requiring intervention is a foreign body in upper aero digestive tract, but other ENT conditions may require emergency surgery eg: severe epistaxis, post tonsillectomy hemorrhage, orbital complication of sinusitis, upper airway obstruction, acute mastoiditis and deep neck space infection.⁵

Although lodgment of a foreign body in the aero-digestive tract is a common accident that most ENT surgeons have to deal with, resulting in morbidity and mortality if urgent actions are not taken.^{4,8}

Children are inquisitive with tendencies to explore their body orifices. In the process they put the FB into the body orifices leading to subsequent swallow or inhalation. Children who are left alone and allowed to feed and possibly talk at the same time are also predisposed. The peak age of occurrence is six months to four years.^{4,9}

Foreign bodies are of grave concern to the surgeon as their removal not only demands a great skill but there is unpredictability in the degree of difficulty of the procedure.^{5,10}

Most of these patients are self-referred, many are referred by the OHNS, some are referred by general practitioners (GP), a few of them come from other hospitals and the rest are referred by

social workers, philanthropist, policeman.⁶

Trauma in the ENT, maxillofacial and Head-Neck region has always kept emergency ENT team on toes round the clock. For preserving life and minimizing disabling disfiguring sequelae trauma in these regions should be treated thoughtfully and sympathetically with intelligent plans as these may compromise the airway, cause head injury or injury to the cervical spine.^{7,8}

Upper aero digestive tract emergencies are commonly caused by foreign body in the larynx and esophagus and are notable causes of morbidity and mortality especially in children and elderly patients.⁹ Foreign body in the respiratory tract is fraught with respiratory obstruction and even death, rarely though, especially in infants and children, if not intervened in time.¹⁰

Considering the changing socio-economic pattern and rapid urbanization, trauma in ENT, maxillofacial and Head Neck region should be added to this list.¹¹ Cancer in the Head Neck region, strangulation, laryngeal and tracheal injuries are encountered demanding emergency tracheostomy. Many systemic diseases like acute leukemia, bleeding diathesis, diabetes mellitus, hypertension, hemorrhagic fever, septicemia, gullian-burre syndrome (GBS) may also present with ENT emergency condition.¹² Epistaxis remains a common otorinological emergency in most hospital emergency departments with varied manifestations.¹³

Accident with foreign bodies are common in pediatric population.¹⁴ More than 65% of visits of elderly presenting to ENT emergency department involve true emergencies.¹⁵ Ludwig's angina is known, yet a rear surgical emergency that is potentially life threatening unless early recognized and aggressively treated.¹⁶ Cut throat emergency in ENT is also common. Poor socio-economic status and poverty have been associated with high incidence of cut throat injuries.¹⁷ Patient of all age will be encountered but there is a significant age distribution for certain related emergencies. This study will reflect overall pattern of ENT emergencies, age and sex distributions, management pattern and outcome of treatment in tertiary level hospital.

Materials and Methods:

This study was a cross-sectional observational study was conducted at the Dept. of Otolaryngology and Head-Neck Surgery, Dhaka Medical College & Hospital, Sir Salimullah Medical College and

Mitford Hospital, Dhaka. The study was carried out from 24th April 2013 to 23th October 2013. (6 months). For better statistical analysis maximum numbers of samples were taken. All the patients with ENT Emergencies admitted or treated in these places of study during the study period constituted the study population. probability convenient and purposive sampling technique was used for collecting sample. A total number of 496 patients who matched the inclusion criteria were taken as sample. With proper ethical consideration after taking an informed consent all the selected patient was interviewed, examined and investigated. All the information and data were recorded and compiled in a structured data sheet. All the data was analyzed by a standard statistical methods and computer SPSS software.

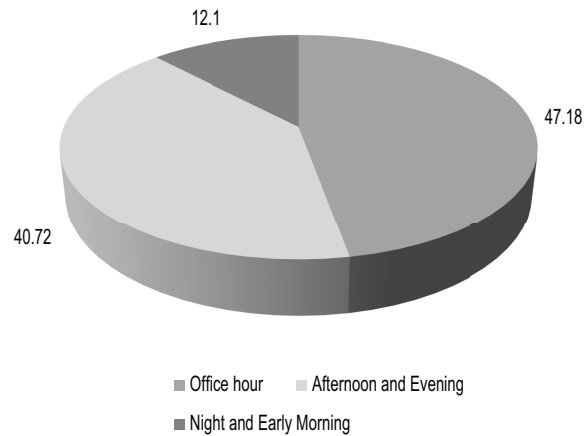


Fig.-1: Pie chart showing time of presentation of patient(n=496)

Table I
Age distribution of patient(n=496)

| Age Distribution (years) | Sex | | No. of Patient (n=50) | Percentage (%) |
|--------------------------|------|--------|-----------------------|----------------|
| | Male | Female | | |
| 0-10 | 62 | 46 | 108 | 21.77 |
| 11-20 | 68 | 34 | 102 | 20.56 |
| 21-30 | 82 | 38 | 120 | 24.19 |
| 31-40 | 42 | 18 | 60 | 12.10 |
| 41-50 | 34 | 14 | 48 | 9.67 |
| 51-60 | 18 | 14 | 32 | 6.45 |
| 61-70 | 14 | 06 | 20 | 4.03 |
| 71+ | 04 | 02 | 06 | 1.21 |

Table II
Anatomical location of ENT Emergencies(n=496)

| Anatomical location | Number of cases | Percentage (%) |
|---------------------|-----------------|----------------|
| Throat | 201 | 40.52 |
| Ear | 160 | 32.26 |
| Nose | 135 | 27.22 |
| Total | 496 | 100 |

Table III
Types of foreign body in throat according to different age group (n=66)

| Type of FB | Age Group | | | | | | | | Total No.(%) |
|--------------------|-----------|---------|---------|---------|---------|---------|---------|---------|--------------|
| | 0-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71+ | |
| | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | No.(%) | |
| Fish bone | 2(14.3) | 4(44.4) | 6(54.5) | 5(50%) | 2(28.6) | 1(14.3) | 1(16.6) | 1(50.0) | 22(33.3) |
| Meat bone | 0(0) | 1(11.1) | 3(27.3) | 2(20) | 1(14.3) | 2(28.6) | 1(16.6) | 0(0) | 10(15.2) |
| Coin | 12(85.7) | 4(44.4) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 16(24.2) |
| Denture | 0(0) | 0(0) | 0(0) | 1(10) | 3(42.9) | 3(42.9) | 4(66.6) | 1(50.0) | 12(18.2) |
| Laryngotracheal FB | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) |
| Broncheal FB | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) | 0(0) |
| No foreign body | 0(0) | 0(0) | 2(18.2) | 2(20) | 1(14.3) | 1(14.3) | 0(0) | 0(0) | 6(9.1) |
| Total | 14(100) | 9(100) | 11(100) | 10(100) | 7(100) | 7(100) | 6(100) | 2(100) | 66(100) |

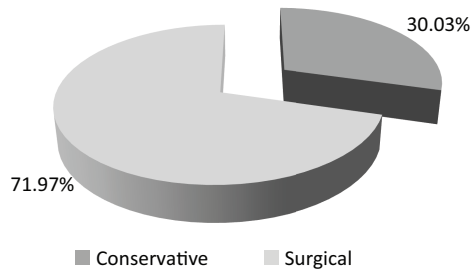


Fig.-2: Management pattern of ENT Emergencies: (n=496)

Table IV
Pattern of Anesthesia (n=347)

| Anesthesia pattern | Number | Percentage (%) |
|--------------------|--------|----------------|
| Local anesthesia | 221 | 63.69 |
| General anesthesia | 62 | 17.87 |
| Without anesthesia | 64 | 18.44 |

Table V
Outcome of treatment (n=496)

| Outcome of Treatment | Number | Percentage |
|----------------------------|--------|------------|
| Recovery | 434 | 87.5 |
| Transfer to another unit | 16 | 3.23 |
| Transfer to other hospital | 06 | 1.21 |
| DORB | 25 | 5.04 |
| Absconded | 09 | 1.81 |
| Death | 06 | 1.21 |

Discussion:

In this study 496 patients made up of 324 males and 172 females were included in this study. These patients were taken from department of ENT and Head-Neck Surgery of two tertiary level hospital (Dhaka Medical College & Hospital, Sir Salimullah Medical Collage & Mitford Hospital, Dhaka). These patients either admitted as emergency or took emergency treatment without admission. Study was done during period of 24th April, 2013 to 23th October 2013. This study was conducted to find overall pattern of ENT emergencies in tertiary level hospital because there is hardly any study of the overall pattern of ENT emergencies in our country^{2,30,31} and only in a few in other countries.^{1,12,18,27,29,32} On the other hand socioeconomic condition, health service, referral

system of other countries are quite different from our country.

The average age in this study was 26.3 years which correlates with three such studies done in Bangladesh^{2, 30, 31} and one in Ghana.¹⁸ They found average age was 27.8 years, 27.8 years, 26.8 years and 25.5 years respectively. The male female ratio was 1.9:1 whereas overall male female ratio in Bangladesh is 1.1:1³³. This reflect men's higher involvement in movement, violence, RTA and inflammatory diseases. This is also reality that woman's complaints are often ignored and men are more privileged in seeking medical service. This explained such male predominance is this study.

The overall rural and urban population ratio in Bangladesh is 79.9:20.1.³³ In our study the urban people is about 55.65% and rural people is about 44.35%. As these two tertiary level hospitals are situated in urban area, urban people have easy accessibility in comparison to rural people.

In our study most patient is from middle socio economical class (51.91%), followed by lower socio economical class (39.31%). This reflect that higher socio economical class people has easy accessibility to private hospital and clinic compared to lower- and middle-class people.

In Bangladesh scenario foreign body impaction in ENT region is common emergency. In western setup most serious emergency cases may result from shortness of breath and bleeding.³⁴ History and clinical examination are required for diagnosis of foreign body in ENT region. Sometimes radiography and imaging are required to diagnose deep seated foreign body in pharynx, oesophagus and larynx. Repeat X-ray was needed immediately before surgery if general anesthesia if planned for foreign body removal. General anesthesia was required in children for foreign body removal and also for pharyngeal, oesophageal and bronchial foreign body.

In our study throat related emergencies were maximum (40.52%) followed by Ear (32.26%) and nose (27.22%) related emergencies. A study done in rural medical college of India where otological cases were maximum (42.41%) in comparison to nose (28.98%) and throat (28.60%).²⁶ This is because otological cases are common in rural area

where people bathing in ponds and river water. On the other hand, our study was conducted in tertiary level hospital situated in Dhaka city where throat related emergencies are most.

In our study inflammatory conditions in throat is the most common among throat related emergencies followed by foreign body in ear. These correlates with the study done in India where they found inflammatory condition and foreign body impaction are main emergencies in throat.²⁶

Fish bone impaction is the most common emergency among foreign body in the throat. In our study fish bone impaction in throat was 7.2% among different types of foreign body in throat which correlates with the study done in India.⁴ A study done in Hongkong where they found fish bone impaction was 79.8% among the foreign body in throat which correlates with our study.³⁵ In Bangladesh most of the people are fish lover and that is why fish bone impaction in aero-digestive tract is the most common emergency in our study. Fish bone impaction commonly occurs in adult³⁹ irrespective of age and sex of the patient. History of fish bone impaction is recent onset but sometimes they present with old retained foreign body with complication. Sometimes fish bone impaction was not found in spite of detailed clinical examination and even X-ray can't find the foreign body.

Coin impaction in throat is another common ENT emergency and they are found mainly in children. In our study meat bone impaction was 7.69%, coin impaction was 12.30% and denture in esophagus was 8.46% among the foreign body in throat which correlates with the study done in India.⁴ All oesophageal foreign body need urgent oesophagoscopy and removal under general anesthesia. Oesophagoscopy is difficult and fatal accidents can occur by slightest trauma due to thinness of the oesophageal wall.⁴⁰

Among the Pharyngeal emergency, inflammatory condition in pharynx was the most common emergency. We found acute tonsillitis and acute pharyngitis is the highest (26.09%) among the pharyngeal emergencies. In Brazil some researchers found tonsillar infection/inflammations as the commonest etiological factor of upper aero digestive tract emergencies.³⁶

Besides in a study done in Greece acute tonsillitis and pharyngitis were the commonest cause of upper aero digestive tract emergencies.³⁷ Furthermore another study reported that inflammation/infective causes were placed in the 3rd position.³⁸ However, these researchers studied otolaryngological emergencies which encompass aerodigestive emergencies.

Upper respiratory tract obstruction due to laryngeal and pharyngeal malignancy needs immediate tracheostomy. Sudden apnoea may occur during tracheostomy and patient may die during the procedure. Tracheobronchial foreign body is one of the major causes of morbidity and mortality in pediatric age group.⁴¹ Many patients with laryngeal foreign body are extremely dyspnoeic.⁴⁰

In our study otological emergency was 32.26%. In one Russian study these constituted of 28% of the total hospitalized ENT patients.⁴² In our study earache is the most common clinical presentation. CSOM with acute exacerbation (active stage) was most common ear related emergency. In a study done in India where most common ear emergencies were earache due to impacted wax, ASOM, foreign body ear and trauma/injury.²⁶ One Italian study reported that ASOM comprised of one third of problem seen in pediatric practice during first five years of life.⁴³ Other common ear related emergency in our study were impacted wax and associated otitis externa.

Among foreign body in ear vegetables foreign body was most common. They are usually found in children below the age of ten years. Foreign body was mostly found in right ear as most of the children are right-handed.

Traumatic injury to external ear is the most common among the external ear emergency other than foreign body. This reflects increase violence in society and increase incidence of RTA and other accidents.⁴⁴ Ear trauma is one of the components of head injury and bleeding from ear is the presenting features of most cases.

Among sinonasal emergency epistaxis was the most common in our study. The prevalence of epistaxis in random sample of population was found in one study to be between 10% and 12%.⁴⁵

Most of the patients with ENT emergencies were managed surgically and mostly under L/A (63.69%)

and without anesthesia (18.44%), only a few (17.87%) needed G/A. This reflects an observation that most of them could be managed in Thana and District hospitals if trained manpower is available in those hospitals. Similar observation found in three such study done in Bangladesh^{2,30,31} and surprisingly, these also correlates with the study done in India, Ghana and Spain.^{27,18,29}

In our study, 87.5% patients were discharged on recovery and/or emergency services were given without admission. 12% of patient need multidisciplinary action and 3.23% patients transferred to other discipline. Multidisciplinary management was done in collaboration with mostly dental surgeons, neurosurgeons and ophthalmologist. Other study done in Bangladesh which correlates with this finding.^{2, 30, 31} This also described in different text and journals even from very ancient period.^{27,46,47} Transfer to other hospitals were mainly due to impaction of FBs in tracheobronchial tree. A number of patients left the hospital on risk bond. This is because some patients preferred private hospital to government hospital. This may be related to overcrowding of government hospitals, overestimation of service of private hospitals, the financial and social status of the patients. Only a few patients mostly police cases left the hospital unnoticed. Mortality rate was 1.21% which correlates with the study done in Africa where mortality of admitted ENT emergencies were 2.7%.¹⁸ The causes of mortality well correspond with the common causes of death in ENT emergencies.^{18,27,29,30,31}

So, pattern of ENT emergencies in these three tertiary level hospitals mimic the related studies and literatures throughout the world. Little dissimilarity and their causal factors are explained from our country's perspective.

Conclusion:

This study brings into light the pattern of ENT emergencies in two important tertiary level hospitals of Dhaka city but may not necessarily be representative of the whole country. Young males are the most common victims. Common presenting time is mostly in office hours. Urban people are most common victims. Most of the patients are from middle socio-economical class. Throat related emergencies were maximum followed by ear and sinonasal emergencies. Epistaxis emerged as the

leading cause of ENT emergencies followed by foreign body in ENT region. Among the throat related emergencies, pharyngeal emergencies (inflammatory and injury) other than foreign body was most common. Among ear related emergencies, diseases of external ear other than foreign body was most common. Epistaxis was most common sino-nasal emergencies. Most of the ENT emergencies were managed surgically under local anesthesia and without anesthesia. So, presence of otolaryngological department in thana and district level hospital could avoid unnecessary referral, patient's suffering, mortality, morbidity etc. A substantial number of ENT emergencies require multidisciplinary management mostly with dental surgeon, neurosurgeon and thoracic surgeon. A few mortality and referral to other hospital could be avoided if proper paediatric instruments and thoracic surgeon were available in tertiary level hospital.

It helps us to know the management qualities of ENT emergencies in these two tertiary level hospitals of Dhaka city but can't be representative of whole country. So, broad-based, elaborate, countrywide study will be needed for more precise and comprehensive results.

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