Pattern of ENT Emergencies in Tertiary Level Hospital

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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. 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 otoaryngological department in thana and district level hospital could avoid unnecessary referral.

Key words: Emergency, Epistaxis, Foreign body.

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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. 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.

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

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. 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.

Although lodgment of a foreign body in the aerodigestive tract is a common accident that most ENT surgeons have to deal with, resulting in morbidity and mortality if urgent actions are not taken.

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.

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.

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.

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.

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. 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.

Considering the changing socio-economic pattern and rapid urbanization, trauma in ENT, maxillofacial and Head Neck region should be added to this list. 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. Epistaxis remains a common otorhinological emergency in most hospital emergency departments with varied manifestations.

Accident with foreign bodies are common in pediatric population. More than 65% of visits of elderly presenting to ENT emergency department involve true emergencies. Ludwig’s angina is known, yet a rear surgical emergency that is potentially life threatening unless early recognized and aggressively treated. Cut throat emergency in ENT is also common. Poor socio-economic status and poverty have been associated with high incidence of cut throat injuries. 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.

### Table I
**Age distribution of patient**\( n=496 \)

| Age Distribution (years) | Sex | No. of Patient (n=50) | Percentage (%) |
|--------------------------|-----|-----------------------|-----------------|
| 0-10                     | Male 62 | 46                      | 108             | 21.77 |
|                          | Female 68 | 34                      | 102             | 20.56 |
| 11-20                    | Male 82  | 38                      | 120             | 24.19 |
|                          | Female 42 | 18                      | 60              | 12.10 |
| 21-30                    | Male 82  | 34                      | 48              | 9.67  |
|                          | Female 18 | 14                      | 32              | 6.45  |
| 31-40                    | Male 14  | 06                      | 20              | 4.03  |
|                          | Female 04 | 02                      | 06              | 1.21  |
| 61-70                    | Male 14  | 06                      | 20              | 4.03  |
|                          | Female 04 | 02                      | 06              | 1.21  |
| 71+                      | Male 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         | 0-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71+ |
|-------------------|------|-------|-------|-------|-------|-------|-------|-----|
| 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) |
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   | 6      | 1.21       |
| DORB                         | 25     | 5.04       |
| Absconded                    | 9      | 1.81       |
| Death                        | 6      | 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 the Department of ENT and Head-Neck Surgery of two tertiary level hospitals (Dhaka Medical College & Hospital, Sir Salimullah Medical College & 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 23rd 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 and only in a few in other countries. On the other hand, the 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 and one in Ghana. They found an 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 1.1:1. This reflects 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. 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. 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%). 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 adult irrespective of age and sex of the patient. History of fish bone impaction is resent 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 oesphagial foreign body need urgent oesphagoscopy and removal under general anesthesia. Oesphagoscopy is difficult and fatal accidents can occur by slightest trauma due to thinness of the oesphagial wall.40

Among the Pharyngeal emergency, inflammatory condition in pharynx was the most common emergency. We found acute tonsillitis and acute 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 italic 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 and surprisingly, these also correlates with the study done in India, Ghana and Spain.

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. This also described in different text and journals even from very ancient period. 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%. The causes of mortality well correspond with the common causes of death in ENT emergencies.

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.

References:
1. Srikumar S, Aneesh KMK, Thompson AK, Pothula VP, Kumar BN. Improving management of ENT emergencies in a DGH. Lancet. 2001; (358):173-180.
2. Islam MM, Dev H, Chowdhury ZH, Mahamood SS. Pattern of ENT emergencies in tertiary referral hospital of Sylhet. Jalalabad medical Journal 2005; 2(2):51-7.
3. Weir N. Introduction, Otolaryngology-An illustrated History. Hutter worth & co Ltd.1990:1-9.
4. Shah S, Chanda S, Mondol PK, Das S, Misha S, Rashid MA et al. Emergency Otorhinolaryngological cases in medical college, Kolkata-a statistical analysis. Indian journal of otolaryngology and head-neck surgery 2005; 57(3):219-25.
5. Bleach NR, Mady SMH, Williamson PA. Ann R Goll Surg Engl 1994; 76:335-8.
6. Huang SE and et al. An epidemiological study of Otolaryngologic emergency diseases. chung-Hua-Hsuesh-Tsa-Chis-Taipei 1991,Dec;48(6):456-461.
7. Core Curriculum Syllabus: Emergencies in Otolaryngology and Head-Neck Surgery. Baylor college of Medicine 2005.
8. Perkin CS, Juniper RP. Maxillofacial injuries. In: Russel RCG, Williams NS, Bulstrode CJK, eds. Bailey & Love’s Short Practice of Surgery.24th Edition. London: Arnold publication; 2004:664-73.
9. Onotai LO, Ibekewe MU. A survey of Upper Aerodigestive tract emergencies seen in a Nigerian Tertiary Hospital. International journal of Medicine and medical sciences 2012; 2167-0447; 2(4):092-096.

10. Ghosh P. Foreign body in Ear, Nose and Throat (prediction and Management). IJO and HNS 1999; August: 2-5.

11. Juniper RP. Maxillofacial Injuries. In: Russel RCG, William NS, Bulstrode CJK, eds. Bailey & Love's Short Practice Of Surgery; 23rd Edition. London: Arnold Publication; 2000:599-607.

12. Beasley N, Honda A, Jones A, Turner K. Surgical emergencies: Ear, Nose & throat emergencies. BMJ Careers 2004:121-27.

13. Iseh KR, Mahammad Z. Pattern of Epistaxis in Sokoto, Nigeria: A review of 72 cases. Annals of African Medicine 2008; 7(3):107-11.

14. Nogo A, Ng KC, Sim TP. Otorhinolaryngeal foreign bodies in children presenting to the emergency department. Singapur Med J 2005; 46(4):172-78.

15. Dagan E, Wolf M, Migiro VL. Why do Geriatric patients attend otolaryngology emergency room? IMAJ 2012,October;14:369-36.

16. Hasan W, Leonard D, Russell J. Ludwig's angina-a controversial surgical emergency; how do we do it. International Journal of otolaryngology 2011:231-816.

17. Onotai LO, Ibekewe U. The pattern of cut throat injuries in the University of Port-Harcourt Teaching Hospital, Port-Harcourt Teaching Hospital, Portharcourt. Niger J. Med 2010; jul-sep; 19(3):264-6.

18. Kitcher ED, Jangu A, Baidoo K. Emargency Ear, Nose & throat admission at Korle-Bu Teaching Hospital. Ghana Med J 2007 March; 41(1):9-11.

19. Lopez AM, Garcia SA, Herranz GJ, Lopez BG, Martinez VJ. Appropriateness emergency hospital admission at an ORL survives of a third level hospital. Acta OtoRinolaringol Eap 1993,Jan-Feb;44(1):31-4.

20. Timsit CA, Bouchene K, Olfatpour B, Herman P, Tran BHP. Epidemiology and clinical finding in 20,563 patients attending the Lariboisiere Hospital ENT adult Emergency clinic. Ann otolaryngol Chir Cervicofac 2001,Sep;118(4):215-24.

21. Gallo A, Moi R, Minni A, Simonelli M, DeVincentiis M. Otolaryngology Emergency Unit care: the experience of a large university hospital in Italy. Ear Nose Throat J 2000,Mar; 79(3):155-8,160.

22. Wheatley AH, Temple RH, Camilleri AE, Jones PH. ENT open access clinic: an audit of a new service. J Laryngol Otol 1999 July;113(7):657-60.

23. Perez OJ, Rivasre EJ, Leache PJ, Fernandez LR, Marin GJ, Sevil NJ, Mateo BA. An outpatient study in ENT(Otorhinolaryngology) emergencies at a general hospital. Acta Otorrinolaringol ESP 1995, Jul-Aug;49(4):298-304.

24. Herve JF, Wiorowski M, Chultz PS, Chambers O, Lannoy L, Rakotobe H. ENT Resident activity in the Strasbourg Hospital ENT Emergency Clinic.[online]. http://www.em-consulte.com/article/78231/alertePM (accessed september 2013).

25. Pal'chun VT, Kuneklekaia NL, Kislova NM. Emergency diseases of the Larynx and Pharynx (comperative statistics). Vestn Otorinolaringol 1999;(1):35-8.

26. Barman D, Maridal S, Gosewami S, Hembram R. Three year audit of the emergency patients in the department of ENT of a rural medical collage J. Indian Med Assoc 2012 Jan;110(6):370-4.

27. Pino RV, Rojas UE, Keitugwa YT, Alcaraz F, Trinidad RG et al. Descriptive study of 21804 ENT emergencies in a tertiary level hospital. An Otorrinlaringol Ibero Am 2003;30(3):237-45.

28. O'Driscoll K, Donnelly MJ, Moshane DP, Burns H. An audit of the ENT casualty service at the Royal Victoria Eye and Ear Hospital. IrJ Med Sci 1993 Nov;162(11): 462-5.

29. Kumar S, Gulati A. Pedicatric Emergencies in otolaryngology in a Metropolitancity. Indian Pediatrics 1999; 36:1256-1258.

30. Shaheen MM. Pattern of ENT Emergencies in Chittagong Medical Collage Hospital-One year retrospective study [Dissertation],Dhaka:BCPS.2001.

31. Khan MAM. An Overview of ENT emergency in Dhaka Medical Collage Hospital-One year retrospective study. [Dissertation],BCPS.2004.

32. Winters M. Evidence based Diagnosis and Management of ENT emergencies. Medscape Emergency Medicine; 2007.

33. Statistical year book of Bangladesh 2005, Bangladesh Bureau of Statistics; 2005:24.

34. Cancura W. Otorhinolaryngoscopic emergency in Practice. Wein Med Wochenschar (German) 1982; 132:357-9

35. Chiu HS, Chung CH. Management of foreignbodies in throat: an emergency department’s perspective. Hongkong J. Emerg. med 2002; 9:126-130.

36. Furtado PL, Nakamishi M, Rezenden GL, Granjeiro RC, DeOliveira TS. Clinic-epidemiological analysis of an otorhinolaryngology emergency unitcare in a tertiary hospital. Brazil J Otorhinolaringol 2011; 77(4):426-431.

37. Vasilieiu I, Giannopoulos A, Klonaris C, Vlasis K, Marinos S, Koutsonasios I et al. The potential role of primary care in the management of common ear, nose or throat disorders presenting to the emergency department in Greece. Qual Prim Care. 2009.17(2): 145-8.

38. Huanq SE, Hung HY, Wang JH, Jou WB, Lin WS. An epidemiological study of otorhinolaryngologic emergency diseases. Zonqhua Yi Xue Za Zhi (Taipei) 1991; 47(4):456-61.

39. Lannigon FI, Newbegin CI, Terry RM. An unusual subcutaneous neck lump. J Laryngol Otol 1985; 102: 385-6.

40. Jackson C, Jackson CL. Foreign bodies in air and food passages: In Broncho esophagology: W.B.Saunders & CO:Philadelphia & London;1950:13-34.
41. Hathiram TB, Grewal DS, Pathan SK, Chandrakiran C, Gaikwad N, Joshi V et al. Unusual cases of Foreign bodies in Air passage in children. Indian J Otolaryngol Head Neck Surg 1999; 9-14.

42. Palchum VT, Kunnels KNL, Kislova NM. Emergency diseases of the Ear (Comprehensive statistical data). Vestn Otorhinolaryngol 1998; 6:4-10.

43. Pestalozza G, Romagnidi M, Tessitore E. Incidence and risk factors of acute otitis media and otitis media with effusion in children of different age group. Adv Otolaryngol 1988; 40:47-56.

44. Toner IG, Kerr AG. Ear trauma, Otology, Scott Browns text book of otolaryngology. Butter worth-Heinemann; 1997. P:1-13.

45. Shaheen OH. Epistaxis, The Nose and Sinuses. In Scott Browns text book of otolaryngology. 4th edition: 1974. P:147-62.

46. Montes J. History of otolaryngology. Available from: http://www.uthsusa.edu/oto/oto%20history.html (accessed September 2013).

47. History of otolaryngology Medicine and Surgery. Available at: http://www.mcw.edu/otolaryngology/historyofotolaryngology.htm. (accessed September 2013).

48. Panduranga K, Karan MB, Thomas P, Abhijith K. Foreign bodies in the aerodigestive tract—a clinical study of cases in the coastal belt of South India. Am J Otolaryngol. 2006 Nov-Dec; 27(6):373-7.

49. Okafor BC. Foreign bodies in the pharynx and oesophagus. Niger Med J. 1979; 9(3):321-5.

50. Ballenger S. Otorhinolaryngology Head & Neck Surgery, 16th Edition. Jane Y Yang, Bronchoscopy and oesophagology. 1553.

51. Jackson. Foreign bodies in the trachea, bronchi and oesophagus. The aid of oesophagoscopy, bronchoscopy, and magnetism in their extraction Volume 15, Issue 4, pages 257–281, April 1905.

52. Banerjee S. Concept of foreign body—it’s past and present. Indian J Otolaryngol Head Neck Surg 1999 Aug; 51(Suppl 1):23-30.

53. Bruce W Jafek. Fiber optic endoscopy. English Textbook of Otorhinolaryngology. Lippincott-Raven, Philadelphia, New York, 1996, Chapter-47.