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"A Clinical Study of Ent Emergencies in Patients Attending GGH, Kakinada"

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Abstract

Background

Emergency care is an integral part of any discipline of clinical medicine. ENT emergencies are common among all communities and their early diagnosis and management will help in reducing the morbidity and mortality. As the horizons of otorhinolaryngology are widening, management of patients with protocol based quality care becomes prime priority.

Otorhinolaryngologic emergencies included are 1.Foreign bodies of aero-digestive tract 2.Deep neck space infections 3.Stridor 4.Epistaxis 5.Laryngo-tracheal trauma.

Materials And Methods

In this study, 200 cases presenting to the Government General Hospital, Kakinada with symptoms and signs which were concerned with otorhinolaryngologic emergencies were taken into consideration over a period of one and half year from nov 2017 to nov 2019. Cases were studied with respect to their clinical profile, etiological factors, and the management of the ailments to decrease the morbidity and mortality. For the diagnosis, a thorough clinical examination, endoscopic examination, hematological and radiological investigations are necessary.

Results

Otorhinolaryngologic emergencies included are 1.Foreign bodies of aero-digestive tract 2.Deep neck space infections 3.Stridor 4.Epistaxis 5.Laryngo-tracheal trauma. Their incidence was as following Among these 200 cases of ENT emergencies, Foreign bodies of aero digestive tract constitute the most frequent (46.5%) emergency, followed by epistaxis (21.5%), stridor (16%), DNSI (12%) and LTT (4%) in the decreasing order.

Conclusion

Foreign bodies in the aero-digestive tract were the most common among the ENT emergencies causing morbidity and needed immediate intervention.

Keywords: *DNSI (Deep neck space infections),, LTT (Laryngotracheal trauma), ADFB (Aero digestive tract foreign bodies),FB (Foreign bodies)*

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I. Introduction

The head and neck is an anatomic crossroads of multiple functions critical to human wellbeing, including respiration, digestion, sensation, communication, and aesthetics. Diseases that acutely threaten these vital systems can have catastrophic consequences, including impairment of interpersonal interaction, disfigurement, and loss of life. As with any emergency situation, attention must be devoted to the priorities of management: airway, breathing, circulation, and disability in-order to decrease the morbidity and mortality encountered with these emergencies.

Emergency care is an integral part of any discipline of clinical medicine. ENT emergencies are common among all communities and their early diagnosis and management will help in reducing the morbidity and mortality. As the horizons of otorhinolaryngology are widening, management of patients with protocol based quality care becomes prime priority.

Otorhinolaryngologic emergencies included are 1.Foreign bodies of aero-digestive tract 2.Deep neck space infections 3.Stridor 4.Epistaxis 5.Laryngo-tracheal trauma.

II. Aims and Objectives

To get an overview of ENT emergencies encountered,to study the clinical profile of ENT emergencies and to outline the etiological factors, interventions and preventive measures to decrease morbidity and mortality.

III. Materials And Methods

Inclusion Criteria

In the present study 200 patients with ENT emergencies who were admitted and had undergone immediate intervention in the Department of Otorhinolaryngology, GGH, Kakinada from Nov 2017 to Nov 2019 were evaluated, clinical data collected and analyzed.

Method of Collection of Data

Study was done in patients admitted in the department of ENT,GGH Kakinada during the study period with signs and symptoms pertaining to otorhinolaryngologic emergencies requiring immediate intervention and admission

IV. Results

The study was conducted in 200 patients who attended to GGH, Kakinada with symptoms and signs of ENT emergencies requiring immediate intervention during the study period of Nov 2017 to Nov 2019, who had given consent for the studyOtorhinolaryngologic emergencies included are 1.Foreign bodies of aero-digestive tract 2.Deep neck space infections 3.Stridor 4.Epistaxis 5.Laryngo-tracheal trauma. Their incidence was as following.

Table 1: VARIOUS ENT EMERGENCIES AND THEIR OCCURANCE

S .no	Emergency	Number of cases	Percentage
1.	AERO DIGESTIVE TRACT FOREIGN BODIES	93	46.5%
2.	EPISTAXIS	43	21.5%
3.	STRIDOR	32	16%
4.	DNSI	24	12%
5.	LTT	8	4%
6.	TOTAL	200	100%

Among these 200 cases of ENT emergencies, Foreign bodies of aero digestive tract constitute the most frequent (46.5%) emergency, followed by epistaxis (21.5%), stridor (16%), DNSI (12%) and LTT (4%) in the decreasing order.

AERO-DIGESTIVE TRACT FOREIGN BODIES :

Various types of ADFBs including chicken bones, fish bones, coins, meat, pins in the digestive tract and vegetative FBs like peanuts in the airway were encountered in this study. According to this study, incidence of foreign bodies in the airway were relatively uncommon accounting for only 1.07% among all the aero-digestive FBs.

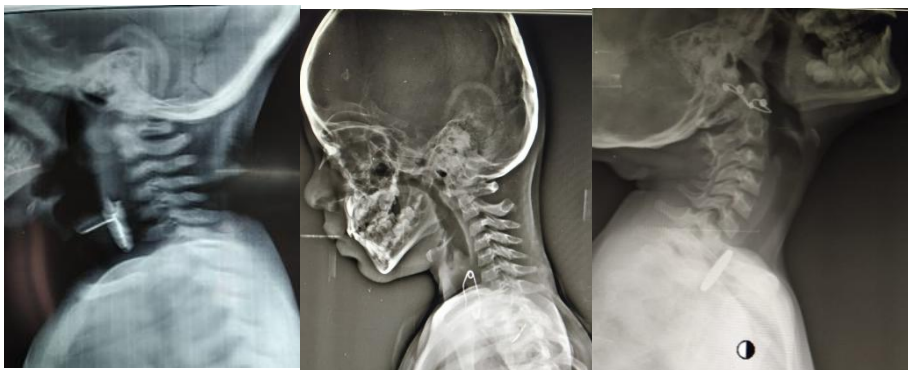

TABLE NO.2: AERO-DIGESTIVE TRACT FB TYPES

S.NO	TYPE OF FB	NUMBER	ADULTS	CHILDREN	TOTAL PERCENTAGE
1.	CHICKEN BONE	48	47	1	51.6%
2.	COINS	19	0	19	20.4%
3.	FISH BONE	12	8	4	12.9%

4.	MEAT	4	4	0	4.3%
5.	PINS	2	0	2	2.13%
6.	LTFB	1	0	1	1.07%
7.	NO FB	7	7	0	7.5%

Chicken bones are the most frequent (51.6%) foreign bodies in upper digestive tract, followed by coins (20.4%), fish bones (12.9%), meat (4.3%) and pins (2.13%). No foreign body was identified radiologically in 7 (7.5%) patients despite of positive history of foreign body ingestion.Patients presented with ADFBs were of age ranging from 2 to 80 years. Most people were of 31-40 years.Out of 93 patients with ADFBs, males(59.13%) were more than females(40.87%).Out of 93 cases of ADFBs, 85(91.3%) cases were intervened(84 cases-esophagoscopy and 1 case laryngoscopy) and FB retrieved in 83(89.2%) cases. Out of 8 cases of FB which were managed with observation alone, 4 cases of FB coin have spontaneous passage and 4 cases with positive FB ingestion history and non visualization of FB radiologically showed improvement in symptoms and signs in 24 hours.Out of 93 cases of ADFBs, only one case(1.07%) of FB chicken bone in a down's syndrome patient who had come after 10 days of FB ingestion had developed mediastinitis in the postoperative period due to esophageal perforation and died inspite of treatment giving the mortality rate of 1.07%.

EPISTAXIS :

AGE DISTIBUTION :
43 cases of epistaxis were of age ranging from 4 to 63 years. 31-40 years age group has highest incidence(27.9%) among all.

TABLE NO.3: AGE DISTRIBUTION OF EPISTAXIS

S.NO	AGE GROUP	NUMBER OF CASES	PERCENTAGE
1.	0-10	8	18.6%
2.	11-20	5	11.6%
3.	21-30	9	20.9%
4.	31-40	12	27.9%
5.	41-50	4	9.3%
6.	51-60	4	9.3%
7.	61-70	1	2.3%
	TOTAL	43	100%

Out of 43 cases, 29 cases(67.5%) were males and 14 cases (32.5%) were females showing male predominance.

AETIOLOGY:
Anterior epistaxis was more common than posterior epistaxis. Various causes of epistaxis were listed below. Out of 43 cases of epistaxis, idiopathic epistaxis was the most common (15 cases) followed by traumatic epistaxis(11 cases).

TABLE NO.4: ETIOLOGICAL FACTORS OF EPISTAXIS

S.NO	ETIOLOGY	NUMBER OF CASES	PERCENTAGE
1.	IDIOPATHIC	15	34.8
2.	TRAUMA	11	25.5
3.	HYPERTENSION	6	13.9
4.	SECONDARY TO DNS	3	7%
5.	RHINOLITH	3	7%
6.	INVERTED PAPILLOMA	2	4.65%
7.	HEMANGIOMA	2	4.65%
8.	JNA	1	2.32%
	TOTAL	43	100%

ANATOMICAL LOCATION:
Among all the 43 cases of epistaxis, exact bleeding site was not identified in 14 (32.55%) cases. Bleeding site was identified most commonly(23.25%) over the anterior septum, followed by little's area (13.95%), posterior lateral wall (11.62%), floor (6.97%), anterior lateral wall and posterior septum (4.65%) each and nasopharynx(2.3%).

TABLE NO.5: SITE OF BLEEDING IN EPISTAXIS

S.NO	BLEEDING SITE	NUMBER OF CASES	PERCENTAGE
1.	ANTERIOR SEPTUM	10	23.25%
2.	ANTERIOR LATERAL WALL	2	4.65%
3.	LITTLE'S AREA	6	13.95%
4.	FLOOR	3	6.97%
5.	POSTERIOR SEPTUM	2	4.65%
6.	POSTERIOR LATERAL WALL	5	11.62%
7.	UNDETERMINED	14	32.55%
8.	NASOPHARYNX	1	2.3%
9.	PNS	0	0%
	TOTAL	43	100%

Out of 43 cases of epistaxis, anterior nasal packing was done in 28(65.11%) cases. Both anterior and posterior was required in 9(20.9%) cases, septal correction, tumor excision and rhinolith removal in 3(6.97%)cases each. Cauterization was done in 2 (4.65%) cases and nasal bone # reduction in 1(2.32%) case.

TABLE NO.6: TREATMENT MODALITIES OF EPISTAXIS

S.NO	TREATMENT MODALITY	NUMBER OF CASE	PERCENTAGE
1	ANTERIOR NASAL PACKING	28	65.11%
2	POSTERIOR + ANTERIOR	9	20.9
3	SEPTAL CORRECTION	3	6.97
4	TUMOR EXCISION	3	6.97
5	ENDOSCOPIC REMOVAL OF RHINOLITH	3	6.97
6	CAUTERIZATION	2	4.65
7	# NASAL BONE CORRECTION	1	2.32
8	HIPPOCRATIC TECHNIQUE	4	9.3%
9	LIGATION OF BLEEDING VESSEL	0	0

All the cases of epistaxis were alleviated of their complaints and epistaxis was successfully controlled. No mortality was encountered.

STRIDOR:

Out of 200 cases, 32 cases were of stridor accounting for 16% of the total ENT emergencies.Among all the age groups, stridor was most common in patients above 50 years(68.75%) in this study.

TABLE NO.7: AGE DISTRIBUTION OF STRIDOR

S.NO	AGE GROUP	NO. of CASES	PERCENTAGE
1	0-25	1	3.12
2	26-50	9	28.12
3	≥51	22	68.75
	TOTAL	32	100%

Among 32 cases of stridor, 21 cases (65.62%) were males and 11 (34.38%) were females showing male predominance.Laryngeal growth was the most common etiological factor causing stridor in this study group accounting for 68.75%.

TABLE NO.8: ETIOLOGY OF STRIDOR

S.NO	ETIOLOGY	NO.OF CASES	PERCENTAGE
1	GROWTH LARYNX	22	68.75%
2	GROWTH HYPOPHARYNX WITH VF FIXATION	5	15.62%
3	B/L ABDUCTOR PALSY	4	12.5%
4	FB LARYNX	1	3.12%
	TOTAL	32	100%

All the 32 cases with stridor underwent emergency tracheostomy to secure the airway. Out of 32 cases, 9 cases were decanulated successfully.

The mortality rate in stridor patients was 6.25%(2 cases). Both the cases were died of trachea-innominate fistula causing massive haemorrhage and hypovolemic shock.

DEEP NECK SPACE INFECTIONS :

Among the 24 cases of DNSI, ludwig's angina was the most common(41.66%) DNSI followed by submandibular abscess(33.33%), quinsy(16.66%) and retropharyngeal abscess(8.33%).

TABLE NO.9: TYPES OF DNSI

S.NO	TYPE OF DNSI	NUMBER OF CASES	PERCENTAGE
1	LUDWIG'S ANGINA	10	41.66%
2	SUBMANDIBULAR ABSCESS	8	33.33%
3	PERITONSILLAR ABSCESS	4	16.66%
4	RETROPHARYNGEAL ABSCESS	2	8.33%
	TOTAL	24	100%

Above 50 years was the most frequently affected age group in this study accounting for 62.5% of all the cases.Among these 24 patients of DNSI, 14(58.33 %) of them were males and 10(41.66%) 0f them were females showing male predominance.

Odontogenic infections were the major cause of DNSI in this study group and accounted for the occurrence of 75% cases.

TABLE NO.10 : PREDISPOSING FACTORS FOR DNSI

S.NO	PREDISPOSING FACTOR	NUMBER OF CASES	PERCENTAGE
1.	ODONTOGENIC (CARIES TOOTH/ TOOTH EXTRACTION)	18	75%
2	PHARYNGEAL INFECTION	4	16.66%
3	UNKNOWN	2	8.33%
	TOTAL	24	100%

In majority of cases (70.83%), incision and drainage was done and 3 cases(12.5%) only IV antibiotics were given. 2 cases out of 24 cases required intubation and 2 cases required tracheostomy due to respiratory distress.Out of 24 cases of DNSI , 22 cases were completely recovered and got discharged but 2 cases were dead due to septicaemia depicting mortality rate of 8.33 % among DNSI cases.

LARYNGO-TRACHEAL TRAUMA:

LTT was most common in the age group of 26-40 years in this study group accounting for 75% of the cases.Among the 8 cases of LTT, 7(87.5%) cases were males and 1(12.5%) case was female showing male predominance in its occurrence.External trauma was the cause in 7 out of 8 cases in this study.External trauma can be a penetrating or blunt injury. In this study, penetrating injury was there in 5(71.43%) out of 7 cases and blunt injury in remaining 2(28.57%) cases.Injury with a sharp object like knife was the most common(50%) mode of injury in this study, followed by RTA (25%) and bull gore and prolonged intubation (12.5%).

TABLE NO. 11: MODE OF INJURY IN LTT

S.NO	MODE OF INJURY	NO.OF CASES	PERCENTAGE
1	ROAD TRAFFIC ACCIDENT	2	25%
2	SHARP OBJECTS (KNIFE)	4	50%
3	BULL GORE	1	12.5%
4	PROLONGED INTUBATION	1	12.5%

Out of this 8 cases of LTT, 6(75%) cases required tracheostomy for maintenance of airway and 2(25%) cases were given supportive care and monitored.

TABLE NO.12 : TREATMENT MODALITIES OF LTT

S.NO	TREATMENT MODALITY	NO.OF CASES	PERCENTAGE
1	TRACHEOSTOMY+PMR	3	37.5%
2	TRACHEOSTOMY+OBSERVATION	2	25%
3	TRACHEOSTOMY+RECONSTRUCTION	1	12.5%
4	SUPPORTIVE Rx+OBSERVATION	2	25%

Out of 8 cases of LTT, 7 cases were survived and 1 case died inspite of securing airway, due to extensive neck injury extending to vascular structures causing massive haemorrhage and shock with a mortality rate of 12.5%.

V. Discussion

Emergency service is an integral part and the indicator of the quality of health care system. ENT emergencies are specialized job and special instruments are needed. With increasing incidence of RTAs, non-communicable diseases and occupational health hazards, there is a substantial rise in the ENT and HNS emergencies with greater morbidity and mortality. So, there is a need for specialized emergency services round the clock in every teaching hospital and it should be considered as one of the essential components in post graduate curriculum.

Present study was done over a period of 18 months from January 2017 to June 2018 in 200 patients presented with symptoms and signs pertaining to ENT emergencies who needed immediate intervention. This study was done to evaluate how frequently various ENT emergencies are occurring, their etiological factors and the improvement in the morbidity and mortality with timely intervention in the study population.

The incidences of various emergencies differ from one region to other depending on the socio-economic status, food habits and literacy of the study population which decides the presentation of patient to the hospital seeking medical attention since the onset of signs and symptoms and dictates the morbidity and mortality in them.

According to this study, foreign bodies in the aero-digestive tract were the most common emergencies that are attending to casuality requiring immediate intervention. Epistaxis was the 2nd most common emergency followed by stridor, DNSI and laryngo-tracheal trauma in the descending order.

AERO-DIGESTIVE FOREIGN BODIES

In this study population, ADFBs were the most common emergency that attended casuality seeking medical attention and intervention.chicken bone was the most common FB in the upper digestive tract in adults,coins were the most common FB in the paediatric age group.In this study, 0-5 years was the most common age group in children presenting with FBs with a peak at 3 years and another peak at 5 years due their innate property to explore the world by putting objects in their mouth, crying/playing during eating and anatomical factors e.g. absent of molar teeth, inadequate control of deglutition. 31- 40 years is the most common age group in adults and in the age group of above 60 years due to edentulous mouth, neurological difficulties in deglutition and inco-ordinated swallowing with increasing age.Rigid endoscopy and forceps removal of FB is the standard treatment of foreign body removal in aero-digestive tract.In the present study, patients presenting to casuality with foreign bodies in the airway were very uncommon accounting only for 1.07% of all the ADFB cases, which is in contradiction to all the studies that were done previously on ADFBs..

EPISTAXIS

Epistaxis was the 2nd most commonly occurred ENT emergency in the present study accounting for 21.5% of all the cases. In the present study, among all the 43 cases of epistaxis, exact bleeding site was not identified in 14 (32.55%) cases. Bleeding site was identified most commonly(23.25%) over the anterior septum, followed by little's area (13.95%), posterior lateral wall (11.62%), floor (6.97%), anterior lateral wall and posterior septum (4.65%) each and nasopharynx(2.3%).Anterior epistaxis was more common than posterior epistaxis according to the present study. Anterior nasal packing was the most commonly(65.11%) employed method to halt epistaxis.

STRIDOR

In this study, stridor is more common among ≥51 years age group and more common among males(65.62%) when compared to females(34.38).Laryngeal growth was the most common etiological factor causing stridor in this study group accounting for 68.75%.All the 32 cases with stridor underwent emergency tracheostomy to secure the airway. Out of 32 cases, 9 cases were decanulated successfully.

DEEP NECK SPACE INFECTIONS

In the present study, among the 24 cases of DNSI, ludwig's angina was the most common(41.66%) DNSI followed by submandibular abscess(33.33%), quinsy(16.66%) and retropharyngeal abscess(8.33%).In the present study, odontogenic cause was the most common predisposing factor accounting for 75% cases.Among the 24 cases of DNSI, I & D was done in 17 (70.83%) cases, 3(12.5%) cases were given I.V antibiotics alone and 2(8.33%) cases required tracheostomy to maintain airway.

LATYNGO-TRACHEAL TRAUMA

According to the present study, the mean age for the occurance of laryngo-tracheal trauma is 34.25 Yrs.The cause of LTT can be either penetrating or blunt trauma. Penetrating trauma is the cause of injury in 71.43% and blunt trauma in 28.57%.Injury with a sharp object like knife was the most common(50%) mode of injury in this study, followed by RTA (25%) and bull gore and prolonged intubation (12.5%).Out of this 8 cases of LTT, 6(75%) cases required tracheostomy for maintenance of airway and 2(25%) cases were given supportive care and monitored.

VI. Conclusion

From the above studies and the present study, the below conclusions were drawn

1. Foreign bodies in the aero-digestive tract were the most common among the ENT emergencies causing morbidity and needed immediate intervention.
2. ENT emergencies were more among males when compared to females both in pediatric and adult age group.
3. Morbidity and mortality is decreased with early and planned intervention .
4. Close monitoring of children with an eye on their activities decreases incidence of ADFBs in pediatric age group.
5. Avoiding nose picking, forceful nose blowing, keeping hypertension under control and managing bleeding and clotting disorders help to decrease the mortality due to epistaxis.
6. Any change in voice or shortness of breath persisting inspite of conservative measures should be addressed immediately to rule out laryngeal or hypopharyngeal growths, FBs and V.F paralysis and early intervention can save the patient from morbidity and mortality due to stridor.
7. Dental hygiene and care to dental caries can help to decrease incidence of DNSIs as most common etiological factor being the odontogenic infections.
8. Following safety measures while driving and in machinery works, proper airway management in unconscious patients is needed to avoid laryngotracheal trauma.

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