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Paediatric Otorhinolaryngological, Head and Neck Procedures in a Nigerian Tertiary Health Care Centre

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Abstract

Background: There is wide spectrum of paediatric otorhinolaryngology surgical conditions affecting children in developing countries. Paediatric otolaryngological surgical procedures represent a major part of all otolaryngology surgeries in developing countries.

This study aimed at determining the prevalence, sociodemographic features, types of ear, nose, throat, head and neck surgical procedures, outcomes and associated complications in our center.

Patients and Methods: This was a retrospective hospital based study of otorhinolaryngologic paediatric procedures. The study was carried out from August 2013 to July 2018.

Data for this study was obtained from the medical record department, ENT clinic operation booking register for both minor and major surgery and theatre operation register. Data obtained were collated, documented and statistically analyzed using SPSS version 18.0.

Results: Prevalence of paediatric otorhinolaryngology, head and neck procedures was 20.1%. Clinic and theatre procedures accounted for 86.7% and 13.3% respectively. Elective and emergency procedures constituted 81.8% and 18.2% respectively. There were 57.2% males with male to female ratio of 1.5:1. Otologic procedures accounted for 57.2% out of which otologic foreign body removal occurred in 20.2%. Sinonasal procedures occurred in 24.8% from which sinonasal foreign body removal occurred in 18.9%. Paediatric throat procedures occurred in 16.0% out of which adenoidectomy was performed in 6.8%. Head and neck procedures accounted for 1.9% and commonest of these was lymph nodes biopsy in 0.9%.

Minor procedures in 86.7% were commoner than major procedures in 7.2%. Commonest complication from paediatric otorhinolaryngology procedures was wound infection 4.0%.

Conclusion: Paediatric otolaryngology, head and neck surgical procedures are common encountered in our practice. The prevalence in this study was 20.1% with otological surgical procedures been the commonest. There are associated complications as well as greater level of our patient's satisfaction.

Keywords: Paediatric otolaryngology; Surgical procedure; Tertiary centre; Nigerian

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Introduction

Pathology in the ear, nose and throat among children are common otorhinolaryngology diseases encountered in ear, nose, throat, head and neck surgery [1,2]. Although this problem are common in children, it can affect any age group [1,3].

There is wide spectrum of paediatric otorhinolaryngology surgical conditions affecting children in developing countries. Paediatric otolaryngological surgeries represent a major part of all otolaryngology surgeries [4,5]. The paediatric otorhinolaryngological surgical pathology fall into four major diagnostic categories: Congenital anomalies, surgical infections, injuries and tumour. Congenital conditions include ear pinna anomalies, stenosed externa auditory canal and choanal atresia. Surgical infection such as adenotonsillar infection, rhinosinusitis, otitis media and neck space abscess [6]. Otorhinolarynlogical injuries include foreign body impaction, road traffic accident and burn [7]. Neoplastic disorders are childhood malignancy such as lymphoma.

There are various paediatric otorhinolaryngological surgical conditions worldwide [8-10]. The

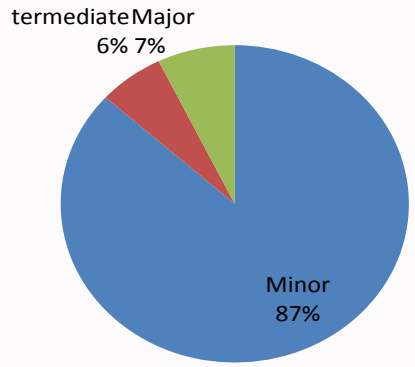

Figure 1: Types of procedures among patients.

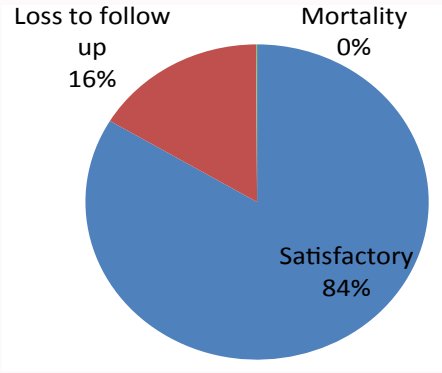

Figure 2: Outcomes of procedures among patients.

prevalence and distribution varies in different regions of the world. These conditions determine and accounted for different paediatric surgical admissions and paediatric outpatient clinic procedures and visits [8]. There may be associated significant mortality and morbidity associated with poor surgical care. Paediatric otorhinolaryngological surgical care should be considered as an essential component of child health programmes in developing populations [11-13].

Little information is available about the paediatric otorhinolaryngological surgical diseases that affect children living in developing countries. Data are also scarce on the spectrum of paediatric otorhinolaryngological surgical disorders, the mortality and morbidity associated with lack of timely appropriate surgical services, and the burden of paediatric otorhinolaryngological surgical disorders on the health systems. There should be setting of priorities for improving paediatric otorhinolaryngological surgical care in developing countries of the world.

This study aimed at determining the prevalence, sociodemographic features, types of ear, nose, throat, head and neck procedures, outcomes and associated complications of the procedures in Ekiti state university teaching hospital, Ado Ekiti, Nigeria.

Materials and Methods

This study was a retrospective hospital based study of otorhinolaryngologic paediatric patients who had otorhinolaryngological procedures. The study was carried out over a period of five years (August 2013 to July 2018). This study was carried out in the Ear, Nose, and Throat (ENT). Department of Ekiti State University Teaching Hospital (EKSUTH), Ado Ekiti, Nigeria.

Data for this study was obtained from the medical record department, ENT clinic operation booking register for both minor and major surgery and theatre operation register. The case notes of all the paediatric patients who had otorhinolaryngological procedures done over the study period were retrieved from the medical record department. Socio- demographic features such as age, gender, parental occupation, parental social habit and domicile were obtained from the patient's case note. Data on patient's conditions such as clinical features, diagnosis, and indication for procedures, and type of procedures, complications, and patient's satisfaction with the outcome of the procedures were obtained and documented. Inclusion criteria were all the pediatric patients that had otorhinolaryngological procedures in the department during the study period.

Exclusion criteria were those patients who were not operated. Also patients with incomplete clinical data on this study or those with missing case notes. All the data obtained were collated, documented and statistically analyzed using SPSS version 18.0. The data were then expressed by descriptive statistics in percentage, frequency tables and charts.

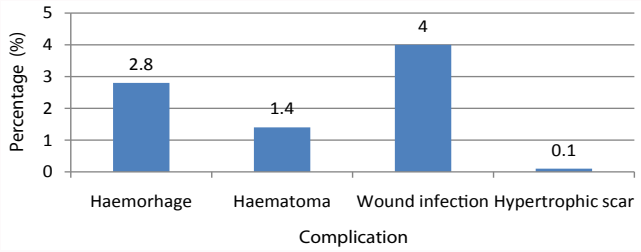

Figure 3: Associated complications among patients.

Table 1: Age group distribution of the patients.

Age Group (years)	Number	Percentage (%)
1 year to 5 years	359	46.4
6 years to 10 years	211	27.3
11 years to 15 years	132	17
16 years to 18 years	72	9.3
Total	774	100

Results

Total number of paediatric patients seen during the study period was 3853 out of which a total of 774 had procedures done given prevalence of 20.1%. Clinic and theatre procedures accounted for 671 (86.7%) and 103 (13.3%) respectively. Elective and emergency procedures also accounted for 633 (81.8%) and 141 (18.2%) respectively. In this study, age group 1 year to 5 years has the highest number of surgeries in 359 (46.4%) while age group 16 years to 18 years has the lowest number of surgeries in 72 (9.3%). Table 1 revealed age group distribution of the patients.

There were 443 (57.2%) males and 331 (42.8%) females with male to female ratio of 1.5:1. Urban dwellers in 467 (60.3%) were commoner than rural dwellers in 307 (39.7%). Commonest parents education level was 283 (36.6%) secondary followed by 274 (35.4%) post secondary. Common parental occupation were civil servants, industrial worker, and business in 152 (19.6%), 142 (18.3%) and 141 (18.2%) respectively.

Otologic procedures accounted for 443 (57.2%) of the total paediatric otorhinolaryngology procedures (Table 2). Otologic

Table 2: Sociodemographic features of patients with otorhinolaryngology surgical procedures (N=774).

Sociodemographic Features	Number	Percentage (%)
Sex		
Male	443	57.2
Female	331	42.8
Residential		
Urban	467	60.3
Rural	307	39.7
Parents Education Level		
No formal education	106	13.7
Primary	111	14.3
Secondary	283	36.6
Post secondary	274	35.4
Parents Occupation		
Civil servants	152	19.6
Business	141	18.2
Driver	106	13.7
Industrial worker	142	18.3
Farming	124	16
Artisans	112	14.5

Table 3: Otologic procedures among patients.

Otologic Procedures	Number	Percentage (%)
Foreign body removal	156	20.2
Aural toilet/dressing	112	14.5
Ear syringing	109	14.1
Aural polypectomy	26	3.4
Mastoid abscess I and D	7	0.9
Preauricular sinus I and D	4	0.5
Preauricular sinus excision	11	1.4
Mastoidectomy	4	0.5
Auricular cyst excision	6	0.8
Auriculoplasty	8	1
	443	57.2

foreign body removal is the commonest followed by aural toilet/dressing and ear syringing in 156 (20.2%), 112 (14.5%) and 109 (14.1%) respectively. Table 3 demonstrated otologic procedures among patients.

In this study, sinonasal procedures occurred in 192 (24.8%). Common paediatric sinonasal procedures were 146 (18.9%) sinonasal foreign bodie's removals, 11 (1.4%) antral washouts (lavage) and 10 (1.3%) nasal packing. Table 4 demonstrated sinonasal procedures among patients. The paediatric throat procedures in this study occurred in 124 (16.0%). Pattern of throat procedures in this study occurred in 53 (6.8%) adenoidectomy, 42 (5.4%) tonsillectomy and 23 (3.0%) foreign body removal. Table 5 showed throat procedures among patients.

Furthermore, other head and neck procedures accounted for 15 (1.9%). Commonest of these was lymph nodes biopsy in 7 (0.9%). Others were thyroglossal cyst excision, tracheostomy and

Table 4: Sinonasal procedures among patients.

Sinonasal Procedures	Number	Percentage (%)
Foreign body removal	146	18.9
Antral washout (lavage)	11	1.4
Nasal Septal abscess I and D	6	0.8
Nasal cautheterization	7	0.9
Nasal packing	10	1.3
Intranasal polypectomy	2	0.3
Partial turbinectomy	2	0.3
Intranasal antrostomy	7	0.9
External fronto-ethmoidectomy	1	0.1
	192	24.8

Table 5: Throat procedures among patients.

Throat Procedures	Number	Percentage (%)
Foreign body removal	23	3
Adenoidectomy	53	6.8
Tonsillectomy	42	5.4
Peritonsillar abscess I and D	3	0.4
Parapharyngeal abscess I and D	1	0.1
Retropharyngeal abscess I and D	2	0.3
	124	16

Table 6: Head and neck procedures among patients.

Head and Neck Procedures	Number	Percentage (%)
Parotidectomy	1	0.1
Submandibular salivary gland excision	2	0.3
Lymph nodes biopsy	7	0.9
Thyroglossal cyst excision	3	0.4
Tracheostomy	2	0.3
	15	1.9

Submandibular salivary gland excision in 3 (0.4%), 2 (0.3%) and 2 (0.3%) respectively. Table 6 illustrated head and neck procedures among patients.

Minor procedures in 671 (86.7%) was the commonest types of paediatric otorhinolaryngology surgical procedures. This is followed by major procedures in 56 (7.2%) and intermediate procedures in 47 (6.1%). Figure 1 demonstrated types of procedures among patients.

Majority of the patients (parents and guardian) in 647 (83.6%) were satisfied with the procedures. There were 126 (16.3%) loss to follow up and 1(0.1%) mortality in the patients. Figure 2 showed outcome of procedures among patients. In this study, commonest associated complications with the paediatric otorhinolaryngology procedures were wound infection in 31 (4.0%). This was followed by haemorrhage in 22 (2.8%) and Haematoma in 11 (1.4%). Figure 3 illustrated associated complications among patients.

Discussion

Different types of paediatric otolaryngological, head and neck surgical procedures were carried out in our ear, nose and throat department. Prevalence of paediatric otorhinolaryngology procedures in this study is very low. This observed procedures were determined by presented pathology, severity of the pathology,

patients financial constraints, available surgical equipment and other barriers to otorhinolaryngological procedures [14,15]. Paediatric otorhinolaryngological procedures were performed in all age groups with highest prevalence in children age group 1 year to 5 years. This may be due to high rates of inserting objects into the head and neck orifices and high rate of infections in this age group. This findings is similar to report from study done in Nigeria [16,17]. Other high sociodemographic features were male and urban dwellers in this study.

In this study, common paediatric sinonasal procedures were foreign body removal, nasal packing and antral washout (lavage). In this study, both minor and major surgical procedures were combined. Other study revealed higher prevalence of Intranasal polypectomy, Intranasal antrostomy as the most common sinonasal procedures [17].

Foreign body removal, aural toilet/dressing, ear syringing and aural polypectomy were common otologic procedures encountered in our department. This may be due to high prevalence rates of under school age group. This age has high rates of aural foreign body impaction and otologic infection. This findings is similar to report from other study [18,19].

Adenoidectomy, tonsillectomy and foreign body removal were the major throat procedures performed in this study. This is because children are more prone to upper aerodigestive infection leading to tonsillitis, obstructive tonsils and adenoid [16,20]. Due to late presentation to the specialist commonest mode of management are surgical procedures inform of adenotonsillectomy and extraction of foreign bodies from the throat [7,21]. Most common head and neck paediatric otorhinolaryngological procedures in this study were lymph nodes biopsy and thyroglossal cyst excision. The less common procedures in this study were tracheostomy and Submandibular salivary gland excision. Tracheostomy was commonly performed procedures in other series and secondary [7,22].

Several types of minor and outpatient clinic procedures were the commonest form of paediatric otorhinolaryngological procedures in this study. This is followed by intermediate and major surgical procedures. This could be as a result of the commonest paediatric pathology like trauma, foreign body impaction and inflammation in this study. Some paediatric otorhinolaryngological, head and neck surgical procedures poses challenges leading to untoward outcomes. The commonly associated complications of paediatric otorhinolaryngological procedures in our study were wound infection, haemorrhage and Haematoma. Unlike in other studies, complications like cardiac arrest and death were not recorded in this study when compared to other parts of our country [23,24].

The outcome of the majority of the paediatric otorhinolaryngological surgical procedures in this study was satisfactory despite the setbacks we encountered during our management. This is followed by loss to follow up among the patients.

Conclusion

The procedures span from minor outpatient clinic procedures to major surgical procedures. Paediatric otolaryngology, head and neck surgical procedures are common encountered in our practice. The prevalence in this study was 20.1% with otological surgical procedures been the commonest. There are associated complications as well as greater level of patient's satisfaction. There is need for the policy makers in government to improve the funding of the hospitals so as to procure modern day equipment that will meet the present day challenges.

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