



## SURGICAL AUDIT FOR A PERIOD OF ONE YEAR OF THE ENT DEPARTMENT OF CHACHA NEHRU BAL CHIKITSALAYA A TERTIARY PEDIATRIC HOSPITAL IN DELHI

### Paediatrics

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### ABSTRACT

**Aim and Objectives:** To compile the data of elective, emergency surgeries and procedures performed in the ENT department of Chacha Nehru Bal Chikitsalaya in the year 2017 and perform a surgical audit.

**Type of study:** Cross sectional.

**Duration:** Period of 1 year from 1st January, 2017 to 31st December, 2017.

**Study setting:** Department of otorhinolaryngology.

**Inclusion criteria:** All the patients who have undergone elective or emergency surgeries and all the clinical procedures performed in the out patient clinic with or without anesthesia.

**Method:** All the data was compiled from the primary source of information the record register of the operation theater and the clinic of otorhinolaryngology and the HIMS (health information management system) of Chacha Nehru Bal Chikitsalaya for the period between 1st January, 2017 to 31st December, 2017.

**Result:** Total of 1,16,601 cases examined in the year 2017 in the department of ENT. 1,141 procedures performed in the out patient clinic with or without local anesthesia during the period of 1 year with a total number of 298 elective and emergency surgeries/procedures performed. Syringing has been the most common procedure in the clinic .Adenoidectomy(17%) is the most common surgery performed followed by tonsillectomy(11%) and tongue tie release.(11%).The most common neck surgery performed is excision biopsy(9%) followed by tympanoplasty being the most common ear surgery(9%).

**Conclusion:** Pediatric otorhinolaryngology is a rapidly growing sub specialty. This surgical audit has helped us understand the variety of cases addressed in a pediatric ENT set up. This information also can be used to understand how to provide optimum health care facility epically catering to pediatric needs.

### KEYWORDS

surgical audit,pediatric,otorhinolaryngology

### INTRODUCTION:

Wide range of ear, nose, throat and head and neck conditions are presented at the otorhinolaryngology clinic. The pattern of these conditions varies from one demography to another and involves patients of all age groups.<sup>1</sup> Caring for children has been an integral part of otorhinolaryngology practice since the specialty began and pediatric patients are a vital and a rewarding part of their clinical workload. The spectrum of otorhinolaryngology disease in the pediatric population range from common disorders like adenotonsillar hypertrophy to notorious conditions like subglottic stenosis, foreign body in the aerodigestive tract to congenital disorders like choanal atresia and congenital deformities of face.Pediatric head and neck tumors are also not uncommon diagnosis in today's time. Variety of these conditions needs surgical care, in some situation, these morbidities lead to social embarrassment, occupational and economic losses to the community.<sup>2</sup>

Chacha Nehru Bal Chikitsalaya is a pediatric multispecialty hospital; with a bed strength of 221 providing comprehensive medical care for all pediatric related medical and surgical illnesses under one roof. It is located at Geeta colony, Delhi in an area of 1.6 hectare. This paper is an attempt to showcase all the variety of operated cases and procedures that have been performed in our department of ENT in the year 2017. To help administrators and policy makers in the community make adequate health planning tailored to the needs of children .There is dearth of literature on the pattern of ear, nose and throat diseases in the pediatric age group in a developing country like India ,therefore this study was designed to audit and create awareness of its importance in public health.

### MATERIAL AND METHODS:

This cross section study, was carried out in the department of ENT, Chacha Nehru Bal Chikitsalaya ,Geeta Colony, Delhi for a period of one year between 1<sup>st</sup> January and 31<sup>st</sup> December 2017.

The data was collected from the primary source of information the record register of the operation theater and the clinic of the ENT

department and the HIMS (health information management system). This department functions six days in a week, between 9 am to 4 pm from Monday to Friday and 9 am to 2 pm on Saturdays with Sunday being a holiday. One day is allotted for elective surgeries, with emergency services available on all days during the working hours.

Information regarding all the elective and emergency surgeries, major and minor procedures performed in the operation theater and the clinic are included in the study.

### RESULT:

Total of 1,16,601 cases were examined in the year 2017 in the department of ENT, almost 9,716 cases reviewed every month. 1,141 procedures performed in the out patient clinic with or without local anesthesia during the period of 1 year with a total number of 298 elective and emergency surgeries\procedures have been performed.

**Table 1.Procedures performed in the clinic.**

| Procedures performed in the clinic               | Number of procedures performed |
|--|--------------------------------|
| Abscess aspiration                               | 239                            |
| Incision and drainage                            | 84                             |
| Tongue tie release                               | 115                            |
| Punch Biopsy                                     | 4                              |
| Foreign body ear removal                         | 100                            |
| Foreign body nose removal                        | 87                             |
| Intralesion bleomycin – sclerosing therapy       | 38                             |
| Laceration repair                                | 5                              |
| Epistaxis management                             | 15                             |
| Examination under microscope+/-suction clearance | 26                             |
| Syringing  | 428                            |

Syringing has been the most common procedure in the clinic, followed by aspiration of abscesses. The third most common procedure performed is tongue tie release done under local anesthesia.

**Table 2. Endoscopies performed under local or general anaesthesia.**

| Endoscopy                  | Number of procedures |
|----------------------------|----------------------|
| Bronchoscopy               | 1                    |
| Rigid Oesophagoscopy       | 9                    |
| Diagnostic nasal endoscopy | 43                   |
| Otoendoscopy               | 10                   |
| 70 Degree laryngoscopy     | 31                   |
| Fiberoptic laryngoscopy    | 7                    |

Diagnostic nasal endoscopy, 70 degree laryngoscopy and otoendoscopy are performed under local anaesthesia. While fiberoptic laryngoscopy, bronchoscopy, and Rigid oesophagoscopy performed under general anaesthesia.

**Table 3. Intraoral surgeries performed.**

| Intraoral surgeries                 | Number of surgeries |
|-------------------------------------|---------------------|
| Adenoidectomy                       | 34                  |
| Tonsillectomy                       | 23                  |
| Tongue lesion excision              | 4                   |
| Ranula excision                     | 3                   |
| Tongue tie release                  | 22                  |
| Cleft palate repair                 | 4                   |
| Mucous retention cyst excision      | 5                   |
| Palate and tongue laceration repair | 3                   |
| Cosmetic lip surgeries              | 3                   |

Most common intraoral surgery performed has been adenoidectomy followed by tonsillectomy and tongue tie release.

**Table 4. Neck surgeries performed.**

| Neck surgeries             | Number of surgeries |
|----------------------------|---------------------|
| Branchial sinus excision   | 6                   |
| Excision biopsy            | 18                  |
| Tracheostomy               | 3                   |
| Cystic hygroma excision    | 1                   |
| Thyroglossal cyst excision | 4                   |

Neck surgeries make up a major part of the elective surgeries performed, with excision biopsies being the most common of them.

**Table 5. Otolological procedures performed.**

| Ear surgeries                     | Number of surgeries |
|-----------------------------------|---------------------|
| Myringotomy +/- grommet insertion | 6                   |
| Pre auricular sinus excision      | 9                   |
| Tympanoplasty                     | 19                  |
| Mastoid exploration               | 9                   |
| Cosmetic ear surgeries            | 6                   |
| Foreign body ear                  | 2                   |

Chronic suppurative otitis media with central perforation is a common condition seen in pediatric otorhinolaryngology, most common ear surgery performed has been tympanoplasty.

**Table 6. Nasal surgeries performed.**

| Nasal surgeries           | Number of surgeries |
|---------------------------|---------------------|
| FESS                      | 4                   |
| Limited septoplasty       | 3                   |
| Septal abscess drainage   | 1                   |
| Foreign body nose removal | 5                   |

Nasal surgeries are not often performed in children; most common nasal procedure performed under general anaesthesia has been foreign body removal.

## DISCUSSION:

This cross section study, is an attempt to determine the variety of otorhinolaryngology surgeries and procedures performed by the department of ENT of Chacha Nehru Bal Chikitsalaya, a pediatric multi specialty hospital in Delhi for a period between January, 1<sup>st</sup> 2017 and December, 31<sup>st</sup> 2017. Safety for children is a top priority in any children's hospital, however safety is most important during surgery. Ensuring adequate general health of the patient before surgery helps minimize risk of serious health complication. Our department follows a strict protocol where the patient is subjected to pre anaesthetic approval three times before the surgery. On obtaining the first pre anaesthetic approval the patient is given a date for surgery. Re evaluation of the general status performed five days prior to the surgery

and the final evaluation performed one day before the surgery.

In our surgical audit of one year we examined, diagnosed and managed 1,16,601 patients of which 298 elective and emergency surgeries have been performed under General anaesthesia and 1,141 procedures performed in the department clinic. The most common procedure performed is syringing for impacted wax removal (38%). Impacted wax is a major health problem worldwide affecting about 6% of the general population, it also is a main cause of primary care consultation in the clinic. Our data compiled is much in line with the study of Adebiji et al.<sup>3</sup>

Aspiration of head and neck abscess is (21%) of total procedures, due to low socio economic status, poor general hygiene and ignorant and uneducated parents the patient often present with full blown abscess and need immediate attention. Foreign body in the ear and nose are time and again encountered in the otorhinolaryngology clinic, most common foreign bodies removed at our institute are, erasers, pulses and pearls rarely foreign bodies like battery are also encountered. Adequate history, prompt diagnosis, timely intervention and surgical skill and understanding the nature of the foreign body is the key to prevent complications in cases of critical foreign bodies.<sup>4</sup> Foreign body clinic. The spectra of objects inserted into the ear are similar to that found in other similar studies.<sup>5</sup> Impacted foreign bodies in the ear and nose and or with previous failed attempt(s) of removal is performed under sedation.<sup>6</sup>

Being a pediatric specialty many cases of tongue tie are encountered. Frenulotomy is a procedure that can be accomplished with or without local anaesthesia as the discomfort associated with the release of thin and membranous frenulum is brief and minor.<sup>7</sup> At our institute we follow the protocol of placing pellets soaked in 4% xylocaine in the floor of mouth for 5 minutes before the procedure, followed by spraying the floor of the mouth with one puff of 10% Xylocaine just before performing frenulotomy. This helps manage pain and alleviate parental concerns. Tongue tie release make up 10% of the procedures performed in our clinic.

Endoscopies are a helpful diagnostic tool also aids in documentation and teaching purposes. It also helps for parental counseling regarding the aetiology and customizing the follow up review.<sup>8</sup> Nasal endoscopies help with assessing the sinonasal anatomy and nasal pathology. To come to a conclusive diagnosis, in our experience the 70 degree telescope is a preferred diagnostic tool than the indirect laryngoscopy mirror as indirect laryngoscopy is a cumbersome and not a children friendly procedure. We have a well equipped endoscopy lab and have performed forty three diagnostic nasal endoscopies (42%) and thirty seven, 70 degree laryngoscopy (31%) and ten otoendoscopies (10%) under local anaesthesia.

The use of fiberoptic laryngoscopy is slowly gaining acceptance especially in children with problems of upper airway. We at our institute have performed fiberoptic laryngoscopies to rule out conditions like laryngeal web, stenosis, post intubation granuloma's, laryngeal papillomas and voice disorders that are not responding to conservative management. One bronchoscopy has been performed for removal of foreign body metal pin in the bronchus. Out of nine rigid oesophagoscopy performed for foreign body removal the most common foreign body removed has been coin. Button battery, metallic car wheels and metallic earrings are the rare foreign body oesophagus managed.

Most of the surgeries performed under the umbrella of general otorhinolaryngology practice are taken care of at our institute. Tonsillectomy with or without adenoidectomy is one of the most common surgical procedures performed in pediatric age group. The number of surgeries performed has declined by 50% from 1.4 million in 1959 to 2 lakh per year till date.<sup>7</sup> Tonsillectomy is a procedure that also leads to reduction of economic burden on the health care system of any country because of less use of antibiotics and health recourses. Thirty four adenoidectomies (17%) and twenty three tonsillectomies (11%) have been done in our institute. Tongue tie release is performed as a day care surgery with twenty two surgeries (11%) done under general anaesthesia. The advantage of having a day care surgery is, reduction of risk of infection and that of financial burden is of a significant advantage.<sup>10</sup> Excision of ranula (1%), cleft palate repair (2%), palate laceration repair (1%), cosmetic lip surgeries (1%) are other intra oral surgeries performed.

Enlarged lymphnodes in the posterior triangle of neck and jugulo digastric region is not uncommon in children. Indication for surgical biopsy is based on clinical suspicion and when deemed appropriate. Often there is a long waiting period for biopsies and diagnosis of neck masses, among the eighteen cases of excision biopsies (9%) performed significant number of patients, underwent biopsy showing non specific lymphadenopathy. In few cases surgical biopsy is needed to confirm the diagnosis and identify the subtype of lymphoma.<sup>11</sup> Branchial arch anomalies represent 20% of cervical neck masses in children which result from obliteration of branchial clefts with formation of cyst fistula and sinus tracts.<sup>12</sup> In our study six branchial sinus excisions (3%), four thyroglossal cyst excision (2%) and one excision of cystic hygroma has been performed.

Hearing disorders are a big burden of cases in our clinic. Hippocrates in his time observed that ear infection may be the cause of death especially in young children. In our study we have noticed that majority of the patients with otitis media with effusion respond well to medical management. However; myringotomy with or without grommet are 3% of cases performed. Acute suppurative otitis media is well studied in lower socio economic communities and remain a big health issue and needs immediate attention, any delay in treatment prolongs the period of infection and can lead to development of hearing loss and may need surgical interventions like Tympanoplasties (9%) and mastoid exploration (4%) that are the most common otological surgery performed in our institute.

Pediatric septoplasty has always been a controversial procedure since the 1950's due to concerns over adverse effect on facial and nasal growth. However in appropriately selected pediatric patients septoplasty can be safely performed.<sup>13</sup> We have performed three FESS and four septoplasties in a period of one year of our study.

This surgical audit has helped us review our work, understand the diversity of surgeries performed at our institute and contribute to literature and also aid in parent and public education.

#### CONCLUSION:

The scope of pediatric otorhinolaryngology is very much in the ascendancy. Building an intelligent healthcare infrastructure specially catering to pediatric necessities is the foundation for enhancing patient experience and hospital efficiency. The requisite surgical and clinical skills are a sine qua non for one to become a formidable pediatric otorhinolaryngologist. Specially designed training program are needed to enhance the expertise of surgeons in this field. Harmonious working of doctors of different sub specialties, nursing and technical staff help achieve favorable results and adequate patient care. Illness in children causes an enormous impact on the entire family; honest direct and compassionate parental counseling is the key to help reduce their psychological burden.

Recurrence of disease, rate of surgical and anaesthetic complications and failure of surgeries are seen more in children as compared to adults. Hence, pediatric otorhinolaryngologist need to act as feisty advocates for children.

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