

Full Length Research Paper

Routine histopathologic evaluation of adenoidectomy/or tonsillectomy specimens in Nigerian children: how relevant?

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ABSTRACT

The policy in most centers is that all tissue specimens must undergo routine histopathology evaluation even for common surgeries like adenotonsillectomy operations. This study critically reviews the indications for adenotonsillectomy operations and their histopathology results in order to ascertain the relevance of compulsory routine histopathologic evaluations. A ten year retrospective study of all pediatric cases that had adenotonsillar surgeries in the Ear, Nose and Throat (ENT) surgery department of University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt and Rex Medical center Port Harcourt within the period of January 2001 to December 2010. The ward and theatre registers, histopathology laboratory records and the patients' case files were the source of data. There were 500 adenoidectomy/and or tonsillectomy operations done within this period of study. Only 480 records were available for analysis. There were 270 males (56.25%) and 210 females (43.74%) giving a ratio of 1.3:1. Age range was 0-15 years. The age range 4-7 years had the highest occurrence 240 (50.00%) while 12-15 years was the least affected 20 (4.17%). Adenotonsillectomy was the commonest operation 353 (73.54%). The commonest indication for surgery was obstructive hypertrophy 310 (64.58%). Histopathology reports revealed lymphoid hyperplasia as the commonest finding. There were no malignancy, granulomatous diseases and any other unusual pathology seen in any of the specimen. The results of this study and the review of the works done by other researchers show clearly that routine histopathologic evaluation of all adenotonsillectomy tissues in children should not be made compulsory in all cases since most of the reports so far revealed that it was not cost effective.

Keywords: Adenoidectomy, tonsillectomy, Histopathology, Lymphoid hyperplasia, Children, Nigeria.

INTRODUCTION

Adenoid and tonsillar diseases are amongst the commonest ear, nose and throat (ENT) diseases encountered in clinical practice especially in children (Bluestone, 1992). Adenoidectomy and tonsillectomy are two different operations but are sometimes combined because their indications though different may coexist (Blum and Neel, 1983). In times past, infections and inflammations were the commonest indications.

However, with the advent of antibiotics there became a changing trend in the indications (Deutsch, 1996; Britt et al., 2009) Obstructive symptoms following hypertrophy emerge as the commonest indication (Mattila et al., 2001, Afolabi et al., 2009, Bhattacharyya, 2010). Adenotonsillectomy as a form of treatment for children with obstructive sleep apnea (OSA) is well documented in literature (Shintani et al., 1998).

Histopathologic evaluation of all surgical specimens is a standard procedure in most institutions worldwide. This is either to analyze suspicious material or for medico-legal purposes as proof of its removal (Felix et al., 2006). It was advocated by Starry in his earlier study (Starry,

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Table 1: Age Distribution

Age (years)	Number of cases	percentage (%)
0-3 years	180	37.50
4-7	240	50.00
8-11	40	8.33
12-15	20	4.17
Total	480	100

Table 2: Age Distribution of operation types

Age	Adenotonsillectomy	Tonsillectomy	Adenoidectomy
0-3yrs	130	-	50
4-7	180	20	40
8-11	28	10	2
12-15	15	5	-
Total	353	35	92

1939) while Weibel was of the opinion that histopathologic evaluation of the tonsils should be done in all adult patients particularly those over 40 years of age. However, it could be omitted in some patients particularly in children (Weibel, 1965).

Furthermore, our literature search on the subject matter revealed paucity of published works regarding the risks of malignancy in pediatric patients who underwent routine adenotonsillectomy in our environment. Besides, histopathologic evaluation increases the cost of healthcare service delivery particularly in developing countries where direct payment is the predominant method of healthcare financing and out of pocket expenses is usually high (Walshe and Smith, 2006). This paper therefore critically reviews the relevance of carrying out routine histopathologic evaluation of adenotonsillar specimens following all adenotonsillectomy operations in Nigerian children.

PATIENTS AND METHOD

A ten year retrospective review of pediatric patients that had adenoidectomy and / or tonsillectomy operations in the ENT Surgery department of UPTH, Port Harcourt and Rex Medical center in Port Harcourt within the period of January 2001 to December 2010. The ward and theatre registers, histopathology laboratory records and the patients' case files were the source of data. Demographic parameters, indications for the surgeries, type of surgery and the histopathology reports of the specimens were examined. Descriptive data was illustrated using simple statistical tables and percentages while categorical data

like mean and standard deviation were calculated using SPSS for window 15.

RESULTS

There were 500 Adenotonsillectomy/tonsillectomy operations done within the period of study. 480 records were available and were analyzed. There were 270 males and 210 females giving a male: female ratio of 1.3:1, the age ranged from 0 to 15 years with a mean of 5.65 (SD \pm 3.46) years. The age range 4-7 years had the highest incidence 240 (50.00%) while the age range 12-15 years was the least affected 20 (4.17%) (Table 1). Adenotonsillectomy was the commonest operation 353 (73.54%) we encountered (Table 2). The commonest indication for surgery was obstructive sleep apnoea due to hypertrophy of adenoid and tonsils 310 (64.58%) (Table 3). The commonest histopathology report was lymphoid hyperplasia. There was no malignancy or any unusual pathology found in our study (Table 4).

DISCUSSION

In our study obstructive hypertrophy was the commonest indication. Indications for adenoidectomy and/or tonsillectomy in recent times are more of obstructive hypertrophy. Our finding agrees with other studies (Somefun et al., 2000; Darrow and Siemens, 2002).

Pathological analysis of surgical specimen helps to guide patient care and treatment. In our institution just like other institutions worldwide, histopathology exa-

Table 3: Indications for surgery

Indication	Number of cases	Percentage (%)
Obstructive sleep apnoea due to hypertrophy	310	64.58
Recurrent tonsillitis	90	18.75
Peritonsillar abscess	5	1.04
Recurrent ear infection	75	15.63
Total	480	100

Table 4: Histopathology Reports

Operation type	number	Histopathology report	number
Adenotonsillectomy	353	Lymphoid hyperplasia	300
		Chronic inflammation	53
Tonsillectomy	35	Chronic inflammation	35
Adenoidectomy	92	Lymphoid hyperplasia	92

mination is performed on all surgical specimens. (Sodagar and Mohallatee, 1972; Ikram, 2000). Recent studies on routine histopathology of palatine tonsils show that this evaluation in common cases may be unnecessary (Alvi and Vartanian, 1998; Randall et al., 2007).

Moreover, pathological analysis of all routine tonsillectomy and adenotonsillectomy specimens does not often alter the clinical course of management in children, yet it is performed so as not to miss an unexpected pathology especially malignancy (Sodagar and Mohallatee, 1972; Daneshbod et al., 1980). In our study, majority of the cases had histopathology report of lymphoid hyperplasia constituting 392 (81.7%) while the rest was chronic inflammation; there was no evidence of malignancy or any unusual pathology seen in the tissues.

Weibel reported 0.064% of unusual pathology while Daneshbod et al., had 0.013% in their study in Iran (Weibel, 1965; Daneshbod et al., 1980). Younis et al., in their review of 2,099 paediatric cases did not find any unexpected pathology (Younis et al., 2001). This agrees with some earlier studies (Ridgway et al., 1987; Williams and Brown, 2003). The reported incidence of unexpected malignancy in adenotonsillar operations in children was between 0-0.18% (Williams and Brown 2003; Garavello et al., 2004). Daneshbod et al., in their study of 15,120 patients reported only one case of unexpected malignancy (Daneshbod et al., 1980), while Garavello et al., studied 1,123 paediatric patients and found only two cases of malignancy (Garavello et al., 2004). In the cases researchers found malignancies, they have preoperatively suspected those cases from patient's history and clinical findings (Randall et al., 2007; Nelson et al., 2011).

Beaty and colleagues (Beaty et al., 1998) analyzed 476 tonsillectomies and came up with proposed risk factors for tonsillar malignancy such as a previous history of head and neck malignancy, unilateral tonsillomegaly or tonsillar asymmetry, visible lesion on the surface of the tonsil suspicious of malignancy, unexplained weight loss or constitutional symptoms and neck nodes/masses (Beaty et al., 1988). These risk factors have helped clinicians in identifying patients that may likely have premalignant and malignant conditions (Younis et al., 2001). Consequently, most researchers no longer recommend histopathology examination for all cases of adenotonsillar hypertrophy (Van and Prescott, 2009; Faramarzi et al., 2009).

The estimated cost of each histopathology examination for palatine tonsils in some developing countries varies between \$13(₦2000) and \$130(₦20, 000) (Adeyemo et al., 2011). In most of the countries in the sub-Saharan region of Africa where poverty plaques the society, majority of the population cannot afford to spend one US dollar in a day (FAO, 2006), the additional charge of histopathologic evaluation following common adenotonsillectomy operations due to hypertrophy of the adenoid and tonsils only drastically increases the cost of healthcare service delivery to the population (Adeyemo et al., 2011).

In a survey carried out among members of American Society of Paediatric Otolaryngologists regarding what to do with adenotonsillectomy specimens, out of 65 respondents, 44% was against routine histopathologic evaluation. The major reason for the change in the practice was attributed to cost effective healthcare service delivery to the patients (Dohar and Bonilla, 1996).

Five years later a similar survey among members of the

American Academy of Otorhinolaryngology head and neck surgery showed a declining preference for routine histopathologic evaluation of adenotonsillar specimens (Strong et al., 2001).

Even though, there were reports of occult malignancies and granulomatous diseases such as tuberculosis and syphilis being found in otherwise benign appearing tonsils in the past, a review of literature showed extremely low incidence of unexpected pathology in the paediatric age group. Histopathologic evaluation should be exclusive to selected cases of patients with co-morbidity like acquired immune deficiency syndrome (AIDS), those with a previous history of transplant surgery and those with symptoms and signs suggestive of possible malignancy (Dohar and Bonilla, 1996; Younis et al., 2001; Erdag et al., 2005; Nelson et al., 2011). None of our patients have history suggestive of premalignant conditions or granulomatous diseases.

The major reason for some surgeons not requesting for routine histopathologic evaluation of adenotonsillar tissues in the paediatric age group was that it does not alter the clinical course of management of the patients whose indication for surgery was mainly due to adenotonsillomegally causing airway obstruction (Williams and Brown, 2003). No doubt, there is a need for judicious use of one's available scarce resources especially in the sub-Saharan region of Africa. It is therefore important to always give good reasons for requesting for routine histopathologic evaluation of adenotonsillar tissues in children irrespective of the indication for the surgery because a child with adenotonsillar enlargement causing airway obstruction in addition, may have clinical history that could suggest malignancy or any other unusual adenotonsillar pathologies.

CONCLUSION

The results of this study and the review of the works done by other researchers have clearly shown that the incidence of unexpected adenotonsillar pathology in children was either absent or very low. Therefore, it can be restricted only to those few patients with preoperative features suggestive of malignancy or in cases where an unusual pathology is being suspected. Above all, routine histopathologic evaluation of all adenotonsillectomy tissues is not cost effective because majority of the histopathology reports do not enhance the quality of healthcare service delivery to the patients.

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