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Original Research Article

Obstructive Adenotonsillar Disease in Children: What are the Parental Concerns?

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Abstract

Given the variety and complexity of problems associated with enlarged adenoids and tonsils in children, it is often typical for parents or the entire family to be apprehensive or even overwhelmed. This study aims to find sleep-related concerns of parents of children with obstructive adenotonsillar disease in our environment. This was a descriptive cross sectional study of children with obstructive adenotonsillar disease at the ENT clinics of Aminu Kano Teaching Hospital, North-Western Nigeria. A total of 38 children were studied. The overall mean parental concern score was 4.42 ± 1.29 (95% CI, 3.95 – 4.89). The mean parental concern score for males was 4.13 ± 1.59 (95% CI, 3.28 – 4.97) and that for females was 4.73 ± 0.80 (95% CI, 4.29 – 5.18). There was no significant difference for parental concern between males and females (t = -1.36; P= 0.19). The mean parental concern score for children ≤5 years was 4.50 ± 1.47 (95% CI, 3.81 – 5.19) and for those > 5years was 4.14 ± 0.69 (95% CI, 3.50 – 4.78). There was no significant difference for parental concern between children ≤ 5 years and for those > 5years (t= 0.85; P= 0.40). With regards the other domains analyzed, this study found that parental concern scores correlated significantly only with sleep disorder scores (r = 0.59; P= 0.00). This study found that irrespective of their children's socio-demographic characteristics; parents were significantly concerned about this disorder especially as it relates to their sleep state.

Keywords: Adenotonsillar hypertrophy, Adenoids, Tonsils, Parental concern.

INTRODUCTION

Chronic nasal obstruction due to adenotonsillar hypertrophy is among the most common health problems affecting children and is the main cause of obstructive sleep apnea (Di Francesco et al., 2004).

Most enlarged tonsils and adenoids cause no symptoms. In some cases, however, they have been found to cause several morbidities in children such as sleep disorders, chronic ear infections, hearing loss, deformity in the dental arc and facial skeletons (Lapinska and Glo, 2016; Di Francesco et al., 2002). Furthermore, they are associated with developmental abnormalities, behavioral disorders, poor school performance, cor pulmonale and failure to thrive (Abdel-Aziz, 2011; Guilleminault and Pelayo, 1998; Wiatrak and Woolley, 1998).

Given the variety and complexity of problems associated with enlarged adenoidsand tonsils in children, it is often typical for parents or the entire family to

be apprehensive or even overwhelmed. In other words, they may be completely helpless watching their child distressed or uncomfortable particularly during sleep. Possible reasons for these worries include: parents not knowing what will happen next, relapses, noticeable injury or permanent disability (Anonymous, 2017). In fact, some parents are terrified that the condition may lead to the death of their child. In order to address these fears, logicallyit becomes imperative to ascertain the concerns of these parentswith regards obstructive adenotonsillar disease in our environment. Perhaps, this willassistin focusing health counselling so parentscan cope with the diverse health challenges associated with this condition. Previous studies were centered on other aspects of this disease; but there is still a paucity of research on sleep-related parental concerns regarding this condition in our environment.

This study aims to find sleep-related concerns of parents of children with obstructive adenotonsillar disease in our environment.

METHODOLOGY

This was a descriptive cross sectional study of children with obstructive adenotonsillar disease at the ENT clinics of Aminu Kano Teaching Hospital, North-Western Nigeria. Approval was obtained from the Institutional Review Board of the hospital and informed consent was obtained from the parents or guardian of the children.

Children were recruited into the study if they had moderate to severe obstruction of the nasopharyngeal airway by adenoids; based on subjective evaluation of their plain nasopharyngeal radiographs according to the Cohen and konak method (Cohen and Konak, 1985). The reference point for all assessment was 1cm below the upper end of the soft palate; but in children less than 3 years this was reduced to half a centimeter. Accordingly, if the width of the airway is equal or wider than the thickness of the soft palate, it is considered normal or mild obstruction. When the width of the airway is narrower than the thickness of the soft palate but still wider than half the thickness of the soft palate, the airway is considered moderately obstructed, and when the width of the airway is narrower than half the thickness of the soft palate, the airway is considered severely obstructed. Other children included were those with enlarged palatine tonsils (Brodsky's grade II or higher). Excluded were children with craniofacial abnormalities, neuro-logical disorders and those with cardiac or renal disorders.

Plain radiograph of the nasopharynx was obtained with the child in an upright position in the situation of the willing child, or held down and restricted by an assistant/parent/guardian (they were shielded from radiation exposure by wearing a lead jacket), and the head was fixed in a true lateral position in an uncooperative child. The tube–cassette distance was 180 cm and the exposure time varied between 0.4 and 0.6 s. The radiographs were subjectively evaluated using the same viewing box (Kenex–Electro medical HD, Essex, England).

An open access questionnaire developed by Serres et al. (2000) was adapted and administered to all parents/guardians of the children at the time of diagnosis to get information in the parental concern domain. However, those who do not understand English had the questions interpreted in their preferred languages. They graded their concerns for their children's sleep-related conditions on a 0 to 5 point scale (0 = no problem, 1 = almost never, 2 = sometimes, 3 = frequent, 4 = a lot, 5= it couldn't be worse) based on how severe they felt the symptoms affected their children.

Data acquired were entered into a specific form intended for this study. They were analyzed using the Statistical Package for Social Sciences computer software version 21. A low parental concern domain score indicates mild concern, while a high score indicates serious concerns. The associations between variables were assessed using the non-parametric Spearman's correlation coefficient. A significant correlation was considered to be 0.40 or greater. A P-value < 0.05 was considered to be statistically significant.

RESULTS

The total number of children studied was 38 and their clinical and demographic characteristics are shown in Table 1. The overall mean parental concern score was 4.42 ± 1.29 (95% CI, 3.95 – 4.89). The mean parental concern score for males was 4.13 ± 1.59 (95% CI, 3.28 – 4.97) and that for females was 4.73 ± 0.80 (95% CI, 4.29 – 5.18). There was no significant difference for parental concern between males and females ($t = -1.36$; $P = 0.19$). The mean parental concern score for children $\leq$5 years was 4.50 ± 1.47 (95% CI, 3.81 – 5.19) and for those > 5years was 4.14 ± 0.69 (95% CI, 3.50 – 4.78). There was no significant difference for parental concern between children $\leq$ 5 years and for those > 5years($t = 0.85$; $P = 0.40$).Regarding the duration of symptoms, the mean parental concern for duration of symptoms$\leq$1 year was 4.76 ± 0.97 (95% CI, 4.27 – 5.26) and forduration> 1year was 4.00 ± 1.52 (95% CI, 3.12 – 4.88) and there was no significant difference between the mean duration of symptoms in the 2 groups ($t = 1.38$; $P = 0.20$).

Table 2 shows the correlation scores for parental concern and other domains analyzed in this study.

Table 1. Clinical and demographic characteristics of 38 children in the study.

Characteristics	Number (n)	Percentage (%)
Gender		
Male	20[a]	52.60
Female	18[b]	47.40
Age (years)		
Range	1 – 10	
Mean	3.67 (SD = 2.45; 95%CI, 2.87 – 4.47)	
Duration of disease (years)		
Range	0.2 – 4	
Mean	1.17 (SD = 0.84; 95%CI, 0.89 – 1.44	

[a,b] No significant difference (X^2 = 0.11; P= 0.75)
SD= standard deviation, CI= confidence interval

Table 2. Correlation scores for parental concern and other domains in the study

Domain	Parental concern	P-value
	Correlation coefficient (r)	
Physical distress	0.32	0.08
Sleep disorder	0.59	0.00*
Speech and swallow	0.08	0.68
Emotional distress	0.25	0.18
Limited activity	-0.10	0.62

*statistically significant

DISCUSSION

Enlarged palatine and pharyngeal tonsils are very common conditions encountered by physicians world-wide. They have been associated with sleep apnea, recurrent ear infections, developmental abnormalities, behavioral disorders, poor school performance, cor pulmonale and cranio-facial abnormalities (Lapinska and Glo, 2016; Di Francesco et al., 2002). Moreover, obstructive sleep apnea also associated with this condition has been linked to depression, mood changes, problems with quality of life and self-esteem, hyperactivity, and behavioral problems.[2] Other neuropsychological consequences include poor school performance and learning or memory impairments (Halbower and Mahone, 2006). Generally, however, it can be argued that the greatest concern of any disease refers to its physical consequences on an individual.Even though the literature is replete with many studies on various aspects of adenotonsillar disease, however, MEDLINE literature search revealed only few studies that addressed parental concerns this condition.

In this study, the mean age of the children was found to be 3.67 years at presentation at the ENT clinic. In line with this finding, some other authors in their series found majority of patients with enlarged adenoids and tonsil were between 3 and 4years of age (Chinawa et al., 2015). This phenomenon may be due to the fact that the tonsils and adenoids are known to be very small at birth: progressively enlarge over the first to fourth year of life as a result of increased immunologic activity (Wiatrak and Woolley, 1998). In addition, VilellaBde et al. (2006) in their work found that the nasopharyngeal airspace is narrower in the age group 4–5 years; with a subsequent increase afterwards. Also, they found the adenoidal size to be larger in the age group 4–5 years.

The overall mean parental concern score in this study was found to be high (4.42); in other words, it was found that they worry a lot about their children's condition. Moreover, their concerns were found to be irrespective of

the patient's gender, age and duration of symptoms. The present findings, corroborates that of other authors who stated that it is quite normal for a parent to feel overwhelmed or even helpless seeing their child in pain or uncomfortable or even in the hospital (Anonymous, 2017). Remarkably, the new NHS guideline in Britain now recommends that medical staff must listen to parents concerns, even if tests show no cause for alarm. In fact, the NHS report says that parents' concerns should carry more weight than these test scores (National Health Service, 2017). However, what are the possible reasons for such high level on parental concern? Prominent among them include: not knowing what will happen next, apprehension to medical equipment, fear of their children dying, side-effects or complications of treatment, concerns about relapse, a noticeable injury or children being permanently disabled, weight loss or gain, scars, use of wheelchair or knowing other children in the hospital who have died (Anonymous, 2017).

With regards the other domains analyzed, this study found that parental concern scores correlated significantly only with sleep disorder scores ($r = 0.59$; $P = 0.00$). This finding is in accordance with the findings of Di Francesco et al. (2004), who reported similar observation in a quality of life study in children with adenotonsillar enlargement. It is conceivable, however, that the concomitant cessation of breath that occurs in some of these children with sleep apnea could have presented a terrifying scenario to parents and guardians. Moreover, the characteristic loud snoring in some of these children might have caused a lot of concern and sleeplessness amongst parents and other family members alike.

CONCLUSION

In conclusion, this study found that irrespective of their children's socio-demographic characteristics; parents were significantly concerned about this disorder especially as it relates to their sleep state. As a consequence, it is recommended that these concerns should be considered by clinicians in order to ensure a comprehensive management of children with this condition.

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