Antrochoanal Polyp—A Cause of Obstructive Sleep Apnoea in Children

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Obstructive sleep apnoea syndrome is a well established entity which has received much attention in the recent past. In children the commonest cause of sleep apnoea is adenotonsillar hypertrophy. We report two cases of antrochoanal polyp in children who presented with symptoms consistent with sleep apnoea. Pre-operative polysomnography was performed in these cases which confirmed the diagnosis of sleep apnoea. Under general anaesthesia both children underwent polypectomy with middle meatal antrostomy. Post operatively the patients were put on steroid nasal spray for 2 weeks. Repeat polysomnography performed four weeks following surgery revealed reversal of disturbed sleep patterns.

Key Words

(Antrochoanal Polyp, obstructive sleep apnoea, children)

INTRODUCTION

In its simplest term apnoea is defined as a cessation of respiration. Obstructive sleep apnoea in children refers to a clinical entity wherein apneic/hypopneic episodes occur as a result of complete or partial upper airway obstruction during sleep. It has been observed that the adult criteria for obstructive sleep apnoea is not tenable in children. The commonest cause of obstructive apnoea in children is adenotonsillar hypertrophy¹. Other uncommon causes for the development of obstructive sleep pattern in children include craniofacial abnormalities, cleft palate surgery, deviated nasal septum and antrochoanal polyp² should also be kept in mind. We present two cases of antrochoanal polyp in

children who presented with symptoms of sleep apnoea which was confirmed by overnight polysomnography.

CASE No. 1

A 13 years old boy presented with complaints of right sided nasal obstruction chronic nasal discharge, snoring and mouth breathing. On further probing the child's parents gave history of the child having difficulty in breathing at night with apneic attacks, daytime somnolence and poor school performance. General physical examination revealed the child was pale and thinly built. Anterior rhinoscopy revealed a pale polypoidal mass in the right nasal cavity. Throat examination revealed a pinkish mass hanging down from nasopharynx and almost filling the oropharynx. X-ray paranasal sinus and nasopharynx revealed haziness of the right maxillary sinus with a mass filling the entire nasopharynx thereby compromised upper airway with evidence of right maxillary sinusitis. Pre-operative overnight polysomnography revealed frequent apneic episodes associated with desaturation, brief arousals from sleep and snoring (Table-I). The patient was operated under general anaesthesia. Polypectomy alongwith middle meatal antrostomy was performed. Post operative period was uneventful and the patient was put on steroid nasal spray for 2 weeks after surgery. There was improvement of all symptoms and post-operative polysomnography performed four weeks after surgery showed reversal of preoperative findings.

CASE No. 2

A 12 years old girl presented with complaints of

nasal obstruction, recurrent nasal discharges, difficulty in breathing, more so during the night with apneic attacks, loud snoring, chronic mouth breathing and difficulty in swallowing. The parents gave history of her poor school performance and irritability. Anterior rhinoscopy

and reversal of the objective signs was documented in the post-operative polysomnography.

COMMENTS

Although obstructive sleep apnoea is a well

Table-I

	Before Surgery	After Surgery
a) Respiratory disturbance index (Apnea+Hypopnea index)	55.3	1.8
b) No. of obstructive apneic episodes	91	0
c) Max. length i.e. duration of apnea	34.5 sec.	0 sec.
d) Worst oxygen saturation	51%	96%
e) Percentage of total sleep time with snoring	13.0%	2.4%

Table-II

	Pre -operative	Post-operative
a) Respiratory disturbance index	10.4	0.0
b) No. of obstructive apneic episodes	35	0
c) Max. length i.e. duration of apnea	21 sec.	0 sec.
d) Worst O ₂ saturation	86%	95%
e) Percentage of TST with snoring	16.5%	0.8%

revealed a pale polypoidal mass in the right nasal cavity with deviation of the septum. Oral cavity examination showed a pinkish smooth polypoidal mass hanging into the oropharynx pushing the palate downwards and anteriorly. X-ray nasopharynx-lateral view showed compromised upper airway. Pre-operative polysomnography revealed apneic episodes with frequent arousals from sleep, hypoxemia and snoring (Table-II). Polypectomy was done under general anaesthesia. Subjectively all the symptoms improved immediately after operation

Fig-1

Showing Polyp hanging in Oropharynx

recognized entity in children, yet the diagnostic criteria in children vary from that in adults. The

Fig-2

Axial CT Showing Polyp filling Nasal cavity and Nasopharynx

usual cut off RDI (apnoea index of 5 or greater) as also the duration of apnoea periods of more

Fig-3
Showing the specimen

than 10 second is not always mandatory to label a child as suffering from sleep apnoea. On the other hand change in sleep pattern like frequent short arousal, decreased oxygen saturation and daytime symptom of in adequate sleep are strongly indicative of obstructive sleep apnoea.

Apart from adenotonsillar hypertrophy other lesser common lesions like antrochoanal polyp¹ nasopharyngeal nasopharyngeal cysts and encephaloceles³ have also been known to cause sleep apnoea. Antrochoanal polyp usually presents with nasal obstruction, mouth breathing and rarely dysphagia and dyspnoea⁵ and may even require emergency tracheostomy to relieve obstruction⁴. However in our cases the symptoms of sleep apnoea were observed as documented by the overnight polysomnography and these symptoms were reversed following surgery as seen in the repeat polysomnographic study. In the light of our observation we feel that antrochoanal polyp should be added to the list of nasopharyngeal lesions producing sleep apnoea.

References

1. Broadsky L.; Adler E.; Stanievich J. F. (1989) : *Naso and oropharyngeal dimensions in children with obstructive sleep apnoea. International Journal of Paediatric Otolaryngology*; 17 : 1-11.
2. Rodgers, G. K.; Khan, K. H. and Dahl R. E. (1991) : *Antral Choanal Polyp presenting as Obstructive Sleep Apnoea Syndrome. Arch Otolaryngol Head Neck Surg* ; 117: 914-916.
3. Kenna MA. (1985) : *Trans sphenoidal encephalocele. Ann Otol Rhinol Laryngol*; 94 : 520-522.
4. Grewel DS.; Sharma BK. (1984) : *Dyspnoea and dysphagia in a child due to an antrochoanal polyp. Auris Nasus Laryngis*; 11 : 25-28.
5. Bawa G.S and Marwah AR. (1975) : *A Giant Antrochoanal Polyp. A rare indication for emergency tracheostomy. Indian Journal of Otolaryngology*; 27: 211.