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Original Article

CLINICAL PRESENTATION AND TREATEMNT OUTCOME IN CASES OF ADENOIDAL HYPERTROPHY IN CHILDREN

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ABSTRACT:

Objective: To determine the various clinical presentation by which the children with suspected adenoidal hypertrophy attended OPD of Paediatric & Otorhinolaryngology departments and outcome after surgical procedure.

Material and methods: This is a prospective study which was conducted at Karachi Medical and Dental College and Abbasi Shaheed Hospital, from January 2007 to December 2009. During this period those patients who presented with adenoidal hypertrophy symptoms & managed surgically, were followed for a period of six months to determine the clinical outcome and any complication.

Result: A total of 54 children were included in this study with suspected adenoidal hypertrophy symptoms, in which 37 (68.51%) were male & 17(31.49%) were female. The maximum incidence was noted between the ages of 5-6 years. The frequent symptoms noted due to blockage of the nose, 38 cases (70.37%). Most of them present with mouth breathing, snoring, sleep apnea, loss of smell and taste. The clinical outcome was satisfactory in most of the cases with some minor postoperative complications.

Key Words: Mouth breathing, snoring, sleep apnea, adenoidal hypertrophy.

INTRODUCTION:

Adenoid (Nasopharyngeal tonsils) is a mass of lymphoid tissue situated at the junction of roof & posterior wall of the nasopharynx where nose blends into the mouth. Adenoidal hypertrophy is commonly seen in children, young adults and patients who are positive for human immunodeficiency virus (HIV), though in latter group, lymphoma must be considered in the differential diagnosis[1]. Adenoidal hypertrophy is common in childhood and most cases require no specific treatment and will resolve with age. Most of the severe cases are usually associated with certain disease groups, for example sickle cell anemia and HIV. Adenoids, when enlarge partially or totally obstruct the nasal respiration which causing snoring, hyponasal speech, recurrent infection, forcing the child to breath through mouth and halitosis [2]. Enlargement of the adenoids results in recurrent acute otitis media and otitis media with effusion (Glue ear). Adenoids hypertrophy also causes sleep apnea which leads to hypoxemia, hypercapnia and state of arousal, which result in impaired development of the nervous system[3]. Adenoids facies develops due to large adenoids and is defined as "long face and open mouth posture. Chronic airway obstruction is believed to affect the facial growth characteristics[4]. It has been demonstrated by radiological technique and by pressure studies[5, 6]. Severe cases may present with right heart failure and cor-pumonale if recognized late. Polysomnography may help in diagnosis of obstructive episodes during sleep. Polycythemia, respiratory acidosis, metabolic alkalosis support the diagnosis of sleep apnea. The right ventricular hypertrophy on E.C.G. and ventricular dysfunction on echocardiography are diagnostic of sleep apnoea leading to cor-pumonale. These symptoms can be prevented by early removal of the hypertrophic adenoids. Mangat, Orr and Smith showed obstructed apnea during sleep

should be cured by adenoidectomy[7]. Improvement in obstructed apnea and oxygen saturation [8, 9,] and significant benefit of the resolution of middle ear effusion in children[10] were seen after adenoidectomy. Adenoidectomy is indicated in blockage of nose, chronic and recurrent fluid or infections of the middle ears and chronic or recurrent sinus infection.[11]. The postoperative complications are immediate and late. The bleeding may occur in early or late post operative period when crust is separated. The swelling of tongue which may lead to acute airway obstruction may occur in the first few hours of adenoidectomy. Dehydration due to odynophagia may occur in first operative week, rare complications are velopharyngeal insufficiency, naso-pharyngeal or oro-pharyngeal insufficiency, naso-pharyngeal and oro-pharyngeal stenosis and psychological problem.

MATERIAL AND METHODS:

It is the prospective study of 71 patients who presented with symptoms of adenoidal hypertrophy in E.N.T and Pediatric department Karachi Medical and Dental College and Abbasi Shaheed Hospital, from January 2007 to December 2009. During this period fifty consecutive patients who were presented with adenoidal hypertrophy symptoms, diagnosed clinically, properly investigate & managed surgically treatment, were followed for a period of six months to determine the clinical outcome and any complication. The data was collected as per the specially designed performa. All the patients were subjected to the investigation protocol as mentioned in the performa. The exclusion criteria were:

All those cases who had suspicion of bleeding disorder on history & clinical examination.

Cases with proven upper RTI or systemic disease like TB.

RESULTS:

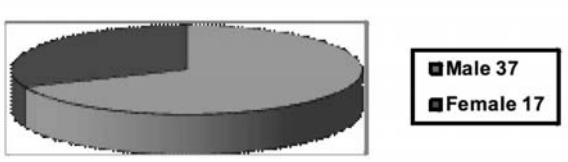
The study was conducted according to fore-mentioned materials and method.

Out of 54 patient37 (68.51%) were male and17 (31.48%) were female. The male female ratio was 2.2:1. The highest incidence was seen between 5-6 years of age,18 patients (31.5%) followed by 15 patients (27.7%) between 7-8 years of age. The common symptoms were due to nasal obstruction which result in mouth breathing, snoring and disturbed sleep in 38 cases (70.37). The other symptom was the effects on hearing in which Otitis media with effusion, Eustachian tube dysfunction were seen in 16 cases (29.62%).Post operative complications, were noted only in two cases, one case presented with early bleeding and one with difficulty in swallowing. The symptoms were relieved in most of the cases except in 6 patients. Nasal problems were not relieved in 02 patients (3.7%) and hearing was not improved in 04 cases (7.4%).

DISCUSSION:

The adenoid is a single clump of tissue in the back of the nose[11]. The adenoids are mostly composed of lymphoid tissue, which is found throughout the gastrointestinal tract and on the base of the tongue. When they are enlarged causes blockage of the nose, chronic and recurrent fluid collection or infections of the middle ears, chronic or recurrent sinus infections[11]. Adenoid hypertrophy is a problem of more than 1/3rd of the children[12]. In this study, 71 children presented with symptoms of adenoidal hypertrophy & 54 were included, majorities were male 37 children (68.51%). The male female ratio was 2.17:1. Similar study showed male were 64.7% as compare to female 35.3%[13]. The majority of the

PIE CHART 1
MALE FEMALE RATIO



BAR CHART
AGE INCIDENCE

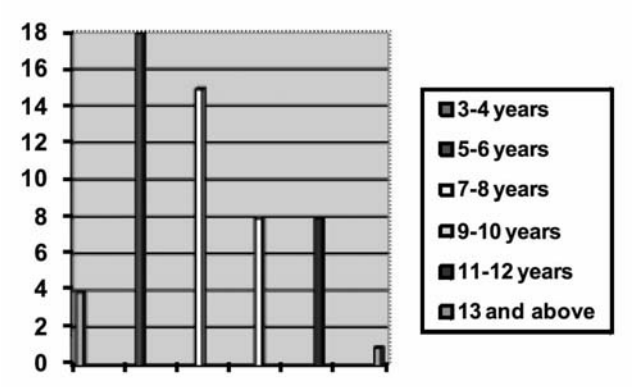


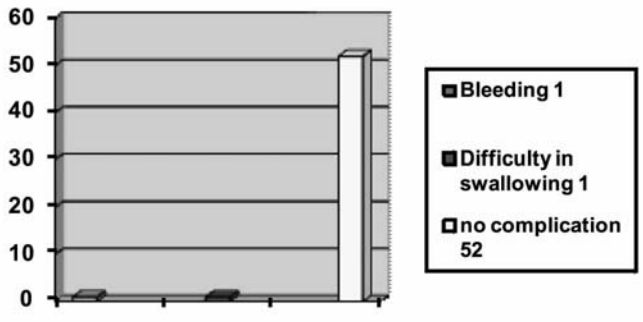
TABLE 01
SYMPTOMS

Symptoms	No. of patients	Percentage
Nasal obstruction ● Mouth breathing ● Snoring ● Disturbed sleep	38	70.37%
Effects on hearing ● Otitis media with effusion ● Eustachian tube dysfunction	16	29.62%

TABLE 02
SYMPTOMS NOT RELEIVED

Symptoms	No. of patients	Percentage
Nasal obstruction ● Mouth breathing ● Snoring ● Disturbed sleep	02	3.7%
Effects on hearing ● Otitis media with effusion ● Eustachian tube dysfunction	04	7.4%

POST OPERATIVE COMPLICATIONS



Study period January 2007 to December 2009

Total no: 54

Sex		
Male: 37 (68.51%)		Female 17(31.48%)
Ratio: 2.17:1		
Age incidence:		
3-4 years;	4	7.4%
5-6 years	18	31.5%
7-8 years	15	27.7%
9-10 years	8	14.8%
11-12 years	8	14.8%
13 and above	1	1.85%

TABLE
SYMPTOMS

Symptoms	No. of patients	Percentage
Nasal obstruction • Mouth breathing • Snoring • Disturbed sleep	38	70.37%
Effects on hearing • Otitis media with effusion • Eustachian tube dysfunction	16	29.62%

children were between the 5-6 years of age 15 cases (31.5%). The common symptom was present due to nasal obstruction, which causes mouth breathing, snoring and disturbed sleep in 38 children (70.37%). One study showed, 87% of mouth breather had hypertrophied adenoids[14]. Obstructive sleep apnea syndrome is a condition frequently encountered in children. Its pathophysiology is related to decreased ventilation despite respiratory effort, leading to episodes of hypopnea and apnea[15]. The prevalence of pediatric obstructive sleep apnea syndrome has been estimated to be between 1% to 3% in preschool and school aged children[16]. Sleep disordered breathing exist as a continuum of severity, ranging from partial upper airway obstruction producing primary snoring (3-12%) through intermediate conditions (i.e. upper airway resistance syndrome and obstructive hypoventilation), to continuous episodes of complete airway obstruction or obstructive sleep apnoea (0.7-3%) [17]. Adenoid also affects the hearing and this may be due to Otitis media with effusion, Eustachian tube dysfunction and recurrent acute otitis media. 12 children (29.62) were presented with decreased hearing. There are two mechanisms by which the adenoids may interfere in the hearing, 1) physical obstruction of the Eustachian tube, 2) reservoir of pathogenic bacteria harbored in the adenoid tissue, which predisposes the patient to repeated episodes of infection[18,19,].

After adenoidectomy 02 (3.7%) patients were not relieved from nasal obstruction and 04 patients (7.4%) still had hearing problem, which relieved after other surgical intervention. Therefore, in some cases, adenoidectomy may have a role in the clinical management of otitis media with effusion[19]. There are three possible explanations for this: 1) The adenoid was not the responsible for the symptoms, 2) Post operative scarring, particularly of the Eustachian openings nullifies any benefits and 3) Lymphoid tissue left in the nasopharynx following incomplete adenoidectomy results in symptoms[20]. Complication of adenoidectomy is rare and usually minor[11]. Only 02 patients had developed complication but minor type, bleeding and difficulty in swallowing, which resolve after conservative treatment.

CONCLUSION:

Adenoidal hypertrophy is not a very uncommon problem in pediatric population & should be considered as an important underlying cause in children presenting with snoring, sleep apnoea, adenoid facies & recurrent otitis media & hearing impairment. Early diagnosis & surgical treatment give good clinical outcome with control of symptoms & prevention of irreversible cardiac defects like cor-pumonale.

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