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Adenoid hypertrophy in adults, a rare cause of nasal obstruction: an evaluation of 12 cases

Ahmad Nasrat Al-Juboori

Head and Neck Surgeon, Ibn Sina College of Medicine, Al- Iraqia University, Baghdad, Iraq

Email address

ahmednas2005@yahoo.com, aljubooriahmad@gmail.com

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Abstract

Background: Adenoid hypertrophy (AH) is often underestimated in adults with nasal obstruction. **Objective:** The aim of this study is to evaluate the clinical significance of AH as a cause of nasal obstruction in adults. **Materials and Methods:** Case series study of adult patients (6550 patients) suffered from nasal obstruction, 12 of them found to have AH during the period from February 2003 to August 2012. The diagnosis was made in different ways; some were diagnosed preliminary by history and clinical examination, nasolaryngoscopy, and radiography, in others the diagnosis was done by accidental finding during operations for septal and sinuses pathology. The above groups of patients adenoidectomy were performed. The remaining patient, excisional biopsy was done for a postnasal space mass diagnosed provisionally as angiofibroma. Follow up continued for one year after surgery. **Results:** Out of 12 patients aged between 18-36 years with AH, four patients were diagnosed preoperatively, another seven patients were diagnosed during operations for septal and sinuses pathology. The AH represented 0.18% of the causes of nasal obstruction in adults. Allergic manifestations occurred in two thirds of the studied patients. **Conclusion:** From this study it is concluded that AH should be considered in the differential diagnosis of adults suffering from nasal obstruction.

1. Introduction

Hypertrophy of pharyngeal tonsil and palatine tonsils is the most common cause of nasal obstruction in children. When the obstruction of the nasopharynx causes recurrent infections of upper respiratory tract, chronic secretory otitis media or sleep apnoea, then adenoidectomy with or without tonsillectomy is indicated [1]. Histopathological features of adenoidal lymphoid tissue are dissimilar in the adult as compared to children: numerous lymph follicles with prominent germinal centers represent the chief finding in childhood adenoids, whereas adult adenoids show chronic inflammatory cell infiltration and secondary changes (e.g. squamous metaplasia).

There is no doubt that large adenoids can partially or totally obstruct nasal respiration [2]. Adenoids are present at birth, continue throughout childhood and atrophy at puberty, although persistence into adult life is not uncommon [3]. It appears that it can remain hypertrophied and become symptomatic in adulthood [4]. In general, the normal adenoids attain their maximum size between the ages of 3 and 7 years and then regress. It is certainly possible that recurrent acute infections are the

sole cause of abnormally large adenoids, although it has been suggested that allergic episodes also result in adenoidal enlargement [2]. Adenoid hypertrophy (AH) is often underestimated in adults with nasal obstruction. The presence of purulent nasal discharge should stimulate the caring physician to do nasal endoscopy for proper diagnosis [5].

The aim of the present study is to evaluate the clinical significance of AH as a cause of nasal obstruction in adults.

2. Materials and Methods

This study was done during the period from February 2003 to August 2012 in Al-Ramadi and Al-Fallujah Teaching Hospitals in Al-Anbar Governorate, Iraq. The diagnosis was made in different ways; a group of patients were diagnosed preliminary (preoperative). The patients were evaluated with respect to age, sex, complaints, allergy, pattern of nasal obstruction (continuous versus intermittent and unilateral versus bilateral). Symptoms such as nasal discharge, postnasal drip, headache, and facial pain were investigated in relation to the presence or absence of adenoid hypertrophy. Nasal findings such as the presence of intranasal polyps and potency of the osteomeatal complex were also reviewed. Computed tomography of the nasopharynx, and nasal endoscopy were performed. Two of those patients had an associated otitis media with effusion proved by tympanometry. In another group of patients, the diagnosis was discovered accidentally during operations for septal and sinuses pathology. Here the AH was detected when there was persistence of nasal obstruction, during operation, even after correction of septal deviation or reduction of turbinate size by turbinectomy. Adenoidectomy was performed under general anesthesia for both groups of patients. The tissues obtained were subjected to a histopathological study revealing lymphoid tissue hyperplasia which supported the diagnosis. In the remaining patient, the diagnosis was done after excisional biopsy of postnasal space mass provisionally diagnosed as angiofibroma by magnetic resonance imaging and computed tomography of the nasopharynx. The approach to the post-nasal space was both trans-nasal and trans-oral approaches. The mass was excised totally and subjected to histopathological study which proved the diagnosis. This study was approved by ethics committee of the hospital and informed consent had been taken from each patient.

Skin test for allergic rhinitis was performed to all patients, other tests for allergic diseases was not available in our hospital. Follow up persisted for one year later after adenoidectomy.

3. Results

A total number of 12 patients with AH aged between 18-36years old; the mean age with standard deviation was 21 years \pm 2.4 years, male: female ratio was 2: 1 as shown in table 1.

Table 1: Age and sex distribution.

Age (years)	Male	Female
18- 20	4	1
21-30	3	2
> 30	1	1
Total	8	4

The symptoms of those 12 patients were variable and more than one symptom was present in the same patients especially those who presented other pathologies in the septum and sinuses. The main symptom was snoring, nasal discharge, headache and or facial pain, hearing impairment, sneezing, itching and impairment of smell, as shown in table 2.

Table 2: The symptoms of the adult patients with adenoid hypertrophy. (No. 12)

Symptoms	Number	Percentage
Snoring	12	100
Nasal discharge	9	75
Headache and or facial pain	7	58.33
Hearing impairment	2	16.66
Sneezing	2	16.66
Itching	2	16.66
Impairment of smell	1	8.33

N.B. more than on symptoms presented in the same patient.

Five patients had nasal septal deviation (41.6%). The time of diagnosis and the number of the patients were shown in table 3. Four patients were diagnosed preoperatively, and that diagnosis was proved by histopathology. Seven patients diagnosed accidentally during operations for septal and sinuses pathology. One patient was diagnosed after excisional biopsy. This patient had a history of adenoidectomy since childhood. When we made an allergic reaction test for all adenoid cases, we found that, 67% of cases were experienced a positive allergic reaction, while only 33% were not experienced it. The obtained value of the test (Z Kolmogorov-Smirnov was 1.446) allowed to confirm this differences (P =0.031).

Table 3: The time of diagnosis and the number of adult patients with adenoid hypertrophy.

The time of diagnosis of adult adenoid hypertrophy	Number	percentage
Preoperative	4	33.33
Operative	7	58.33
Postoperative	1	8.33
Total	12	100

The results of follow up after one year revealed no recurrence of nasal obstruction in all of the patients. During the period of the study, the total number of adult patients with various types of nasal obstruction amounted to 6550 patients. This means that the AH represented 0.18% of the causes of nasal obstruction in adults, see table 4.

Table 4: The number of adult patients suffered from adenoid hypertrophy with nasal obstruction as compared to the total number of patients with nasal obstruction from February 2003 to August 2012.

Etiology of nasal obstruction in adults	No. of patients	percentage
Not due to adenoid hypertrophy	6538	99.72
Due to Adenoid hypertrophy	12	0.18
Total	6550	100

4. Discussion

Although adenoidal tissue undergoes regression toward the adolescent period, it may represent the chief cause of nasal obstruction in adults [4], [6], [7]. Some adults have different sizes of adenoidal hypertrophy. This hypertrophy is different with children under the pathologic microscope. Operative treatment, especially the nasal endoscopic adenoidectomy and microwave treatment is a safe and effective method [8].

Although adenoidal tissue normally undergoes involution during late childhood period, it may persist into adult life and become a cause of nasal obstruction as seen in the cases studied here. In adults, it may be overlooked because of incomplete nasopharyngeal examination or due to overlapped by accompanying rhinological disorders [9].

Hamdan *et.al.* stated that AH is often underestimated in adults with nasal obstruction [5], because AH usually is a disease of children and it is overlooked by underlying sinus and nasal pathology. The presence of purulent nasal discharge should stimulate the caring physician to do nasal endoscopy for proper diagnosis. Protasevich *et.al.* diagnosed AH in 127 patients aged between 15-48 years, the large number probably attributed to the long period of the study or due to age range (less than 18 years) [10]. In a prospective study of hundred adult patients (18-38 years) with nasal obstruction in Jeddah, Saudi Arabia, seven cases of adenoid enlargement were diagnosed [11]. Kamel and Ishaka in Egypt reported 35 cases of enlarged adenoids with ages ranging between 20 and 42 years [12]. In the Indian subcontinent Anwar ul Haq from Pakistan reported a case of a 22 year soldier with an enlarged adenoid mass [13]. These reports are indicative that persistence of adenoid tissue up to adulthood is not uncommon. The likely etiology of persistence of adenoids in adulthood needs to be investigated.

Adenoids in the adults have some special clinical features. They frequently arise in the presence of nasal pathology (septal defect and turbinate hypertrophy) [10], [14]. This fact was present in 58.3% of patients studied, who were diagnosed accidentally during operations for septal and sinuses pathology. Septal deviation happened in 25% of the patients with AH in adults [15], which was 41.6% in our series.

Surgical removal of choanal adenoids was undertaken by

some surgeon in all cases endoscopically. Some other surgical procedures like straightening of a deviated septum or reduction of a hypertrophied turbinate were undertaken in some indicated cases. Most of the cases experienced complete relief from obstruction and return of a patent nasal airway, and improvement of associated complaints such as dry mouth and persistent cough [14].

Adenoids in adults can simulate nasopharyngeal tumors [10]. Frenkiel *et.al.* confirmed the diagnosis of hypertrophied adenoids in 12 adults investigated for nasopharyngeal mass [4]. Magnetic resonance imaging (MRI) was superior to computed tomography (CT) in distinguishing tumor from soft tissues [16]. Dillon *et.al.* showed that MRI clearly differentiated mucosal and lymphoid tissues (adenoids) from others (10 of the 12 abnormal patients) [16]. In one of the patients studied, MRI and CT suspected that the mass was angiofibroma. It seemed that both MRI and CT diagnosed the mass as angiofibroma and that meant that MRI was not superior to CT in differentiation of soft tissue masses in the post-nasal space.

There is a clear relationship between enlarged adenoids and allergic rhinitis [17], [18]. Two- third of the patients studied had allergic rhinitis diagnosed by history and skin test, but other tests that identify allergic rhinitis were not available, although it has been suggested that allergic episodes also result in adenoidal enlargement [2]. Adenoids rarely regrow enough to cause symptoms of nasal obstruction after adenoidectomy. Buchinsky *et.al.* reported 26% of the patients who underwent adenoidectomy had nasal airway obstruction symptoms at follow-up due to regrowth of the adenoids [19]. In the present study, there was a single patient (8.3%) who had history of adenoidectomy before.

5. Conclusion

Although adenoidal tissue normally undergoes atrophy during late childhood period, it may persist into adult life and become a cause of nasal obstruction. In adults, it may be overlooked because of incomplete nasopharyngeal examination or due to overshadowing by accompanying septal and sinuses disorders.

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