

Adult Onset Otitis Media with Effusion: Prevalence and Etiology

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Abstract

Background: Otitis media with effusion (OME) is a subtype of chronic otitis media. It is a common disease in children but may occur in adults due to various reasons.

Purpose: To determine the prevalence of pathological findings related to OME in adults.

Methods: This descriptive study was carried out in the otolaryngology department of Loghman Hakim hospital, Tehran, Iran, from March to August 2015. Thirty-one patients between 18-65 years old with symptomatic OME were selected. The underlying cause of OME was investigated using examination, audiometry test, endoscopy and biopsy.

Results: Thirteen patients (41.9%) had allergy, 35.4% patients had gastro-esophageal reflux. Fourteen cases (45.2%) had nasopharyngeal mass which almost 9% of patients were found neoplasm.

Conclusion: Adult onset OME can be an indicator of nasopharyngeal cancer and should be noticed as well as systematic approach in diagnostic procedure. However it is a clue for further studies to find out causal association in future.

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INTRODUCTION

The etiological factors associated with serous otitis media or otitis media with effusion (OME) are well described in children. The overall prevalence of OME in children between three months to twelve years old is 18.3% and the most common etiological agents are allergy and infectious (1). OME can occur in adults and contributing factors are previous middle ear surgery in the contra lateral ear, history of middle ear disease in childhood, chronic nasal symptoms of obstruction and nasal fullness, cigarette smoking and a family history of middle ear disease (2).

Patients with adult onset otitis media with effusion may be associated with a nasopharyngeal carcinoma (NPC) (3). This problem has been detected less in adults and only few studies have been published about prevalence and risk factors in this group of patients (1). Therefore, we decided to investigate the patients with adult onset of OME and to identify endoscopic and pathological findings.

PATIENTS and METHODS

In this cross sectional study, we evaluated patients with adult onset OME in otolaryngology and head and neck surgery department of Loghman Hakim hospital, Tehran, Iran, from March to August 2015. This study investigated 31 patients with symptoms of OME with an age between 18-65 years old while using conventional sampling. We excluded patients with perforation or neo-tympanic membrane, history of hemodialysis and non-physiological eustachian tube dysfunction.

The patients were confirmed with physical examination and audiometry test and underwent endoscopy of nasopharynx and sinuses. The detected mass lesions were biopsied and sent to pathology department for evaluating by an experienced pathologist.

Demographic and clinical data including age, pathological findings, air bone gap (ABG), type of tympanogram, history of reflux and allergy were collected in the specific form. We entered data in SPSS version 18 and computed mean and standard deviation for continuous

variables and frequency and percentage for qualitative variables. The Ethics Committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran, approved this study. All patients had verbal informed consent to participate in this study.

RESULTS

Among 31 patients participated in this study, 17 (54.8%) were male while 14 (45.2%) of patients were female. The mean age of participants was 42.32 (± 16.9). In this investigation 13 (41.9%) and 11 (35.4%) patients suffered from allergy and reflux respectively. The tympanogram findings were included: 3 (9.7%) type C2, 8 (25.8%) type C1 and 20 (64.5%) type B.

According to audiogram, patients categorized in 5 groups and the mean of ABG in majority of patients (38.7%) was 10 db (Table 1).

We conducted endoscopy of nasopharynx and sinuses. Only 45.2% (14/31) of patients were found in findings in the endoscopy. One of the most important pathological findings was a carcinoma lesion. Almost 9% of cases were associated with cancer that included adenocarcinoma, undifferentiated carcinoma and meningioma. The pathological findings were unknown in 54.8% of cases (Figure 1).

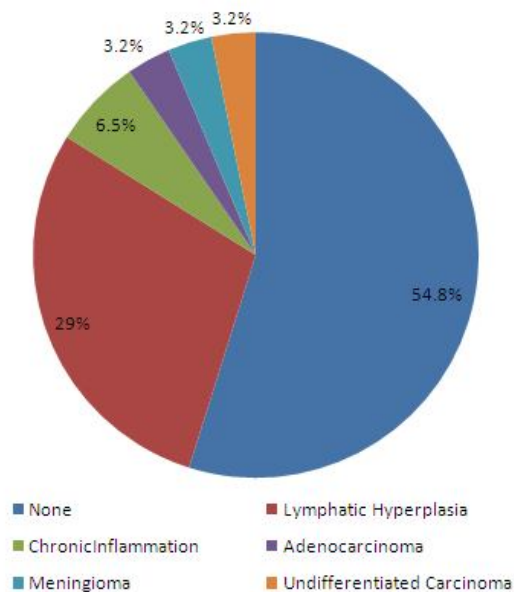


Figure 1: Frequency distribution of pathological findings in adult patients' otitis media with effusion

Table 1: Frequency of patients in each group of ABG

Air Bone Gap	Gender		Total
	Male	Female	
5	3 17.6%	0 .0%	3 9.7%
10	6 35.3%	6 42.9%	12 38.7%
15	5 29.4%	3 21.4%	8 25.8%
20	2 11.8%	4 28.6%	6 19.4%
25	1 5.9%	1 7.1%	2 6.5%

DISCUSSION

In this study, the patients were in the range of 18-65 years old. The chief complain was hearing loss that was confirmed with audiogram. The most common type of tympanometry was type B (64.5 %) and ABG 10 db had the highest distribution. The majority of the patients had a history of allergy. Our results were compatible with findings of Pelikan Z, which 185 cases with nasal allergy were investigated using rhinomanometry combined with tympanometry and pure-tone audiometry (PTA) in order to show audiometric changes in chronic secretory otitis media was related to nasal allergy (4).

In a study by Shimotakhara SG, et al., etiological factors of serous otitis media were evaluated and their results were similar to our study (2).

Furthermore, other study was performed on 53 patients with OME. Yung MW, et al. study reported the presence of underlying pathology in nasopharynx that could be related to recurrence of OME following ventilation tube extrusion (5).

Ho KY and his colleagues have investigated 87 adults with OME. In their study, the common causes of OME were found upper respiratory infection (23.0%), chronic sinusitis (17.3%) and allergic rhinitis (18.4%) also were reported that 5% of patients had nasopharyngeal carcinoma. Whereas, we found 3.2% in adenocarcinoma as well as in undifferentiated carcinoma (6).

In other study by Finkelstein Y et al. investigated 167 patients with OME in which, NPC were found in 8(4.8%) of patients (7). John H and his colleagues studied the association between NPC and OME and they confirmed this association in 33% of their population study (8).

Some studies indicated that OME in adult can also be an indicator of NPC or likely a presence of a mass lesion (9, 10). In this regard, not only investigation of nasal challenges with allergy is very important, but also cancer problem should be evaluated and rolled out as well.

The rhinomanometry combined with tympanometry, PTA and endoscopy of nasopharynx and sinuses are the methods of diagnostic supplement in most patients and an incisional or excisional biopsy should be considered in differentiated diagnosis of mass lesions. Adult-onset OME is not an uncommon disease but risk of NPC is found in 0.4% of asymptomatic cases (8). In OME without mass lesion, the biopsy is not necessary, but close follow up and repeat nasendoscopy is highly recommended (10).

Since the Sinusitis and allergy are the common causal factors of adult-onset OME, computed tomography and rhinomanometry combined with tympanometry are important diagnostic tools in this condition, whereas we did not conduct it in our cases, because the using of endoscopy of nasopharynx is sufficient and cost effective. According to the small sample size in this study and also in order to determine causal association, we suggest a study with robust design for the future.

CONCLUSION

OME in adults may be related to allergy, gastroesophageal reflux disease (GERD) and nasopharyngeal pathology. Allergy and GERD are common and carcinoma is uncommon.

However, diagnosis of NPC is critical among adults who appeared to suffer only from OME and this is accurately determined by biopsy. Therefore, a systematic approach will help us to rule out carcinoma of nasopharynx in these patients.

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CONFLICT of INTEREST

The authors declare no conflict of interest.

REFERENCES

1. Adhikari T, Chew Y, Zulkiflee A, Chong A, Prepageran N. Prevalence and Risk Factors Associated With Otitis Media with Effusion in Children Visiting Tertiary Care Centre in Malaysia. *The International Medical Journal of Malaysia*. 2012;11(1).
2. Shimotakahara S, Ruby R, Lampe H. Otitis media with effusion in the adult. *The Journal of otolaryngology*. 1989;18(3):85-9.
3. Dang PT, Gubbels SP. Is nasopharyngoscopy necessary in adult-onset otitis media with effusion? *The Laryngoscope*. 2013;123(9):2081-2.
4. Pelikan Z. Audiometric changes in chronic secretory otitis media due to nasal allergy. *Otology & Neurotology*. 2009;30(7):868-75.
5. Yung M, Arasaratnam R. Adult-onset otitis media with effusion: results following ventilation tube insertion. *The Journal of Laryngology & Otology*. 2001;115(11):874-8.
6. Ho K-Y, Lee K-W, Chai C-Y, Kuo W-R, Wang H-M, Chien C-Y. Early recognition of nasopharyngeal cancer in adults with only otitis media with effusion. *Journal of otolaryngology-head & neck surgery= Le Journal d'oto-rhino-laryngologie et de chirurgie cervico-faciale*. 2008;37(3):362-5.
7. Finkelstein Y, Ophir D, Talmi YP, Shabtai A, Strauss M, Zohar Y. Adult-onset otitis media with effusion. *Archives of Otolaryngology-Head & Neck Surgery*. 1994;120(5):517-27.
8. DEMPSTER JH, Simpson D. Nasopharyngeal neoplasms and their association with adult onset otitis media with effusion. *Clinical Otolaryngology & Allied Sciences*. 1988;13(5):363-5.
9. Gaze M, Keay D, Smith I, Hardcastle P. Routine nasopharyngeal biopsy in adult secretory otitis media. *Clinical Otolaryngology & Allied Sciences*. 1992;17(2):183-4.
10. Glynn F, Keogh I, Ali TA, Timon C, Donnelly M. Routine nasopharyngeal biopsy in adults presenting with isolated serous otitis media: is it justified? *The Journal of Laryngology & Otology*. 2006;120(06):439-41.

