

Otitis Media with Effusion

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ABSTRACT

The otitis media with effusion is not very common in adults. This study was carried out to find etiology of otitis media with effusion in adults. It was a prospective study carried out at Allied Hospital Faisalabad from Sep 2007 to Sep 2012. Total 50 patients 30 males (60%) and 20 females (40%) between 20 years to 60 years of age. The mean age was 30 years. In 35 patients (70%) glue ear was bilateral and in 15 patients (30%) it was unilateral. Tympanometry was performed in all the 50 patients which showed type-B tympanogram in all the 50 (100%) subjects. The most common etiological factor was upper respiratory tract infection (50%).

The most common presenting symptom was conductive deafness (100%). The most common sign was immobile tympanic membrane (60%). The severity of the hearing loss in majority of the cases was moderate (60%). The treatment modalities used in majority of patients were antibiotic (40%) followed by grommet insertion (30%). The otitis media with effusion in adults must be properly investigated to rule out any grave pathology in nasopharynx and to avoid further complications of otitis media with effusion such as adhesions, perforation etc. **Key Words:** Otitis Media with Effusion, Grommet, Tympanometry

INTRODUCTION

Otitis media with effusion is defined as chronic accumulation of mucus within the middle ear, and rarely this could involve the mastoid air cell system. This accumulation causes conductive hearing loss. The pseudostratified ciliated columnar epithelium of respiratory tract extends up the eustachian tube as far as the anterior part of the middle ear cavity. These cells are capable of producing mucous. There are also goblet cells seen in their midst. These cells are also capable of secreting mucous material. Otitis media with effusion is caused by inflammation of this epithelium in the eustachian tube and hypotympanum. In established cases of glue ear, the cuboidal epithelium of middle ear and mastoid air cells gets replaced by thickened pseudostratified columnar epithelium. The cilia of these cells have also been found to be ineffective in propelling the secretions into the nasopharynx. The sub mucosa is found to be

edematous, inflamed with dilated blood vessels with increased number of macrophages and plasma cells. The changes result in part from allergy or infection added by an element of eustachian tube dysfunction¹. Mastoid pneumatization and its size correlate with the causation of Otitis media with effusion. It was believed in the past that the fluid is sterile however it has been shown by various studies that up to 40% of samples tested turned out to be positive for microorganisms^{2,3,4,5}. The Otitis media with effusion may be acute, sub acute or chronic if the duration is less than 3 weeks then it is labeled as acute when the duration is more than 3 weeks but less 12 weeks then it is labeled as sub acute and when duration is greater than 12 weeks then chronic.

The various etiological factors responsible for causing Otitis media with effusion in adults are nasopharyngeal tumors^{6,7,8} unresolved acute otitis media, nasal allergy^{9,10} polyps^{11,12} eustachian tube dysfunction¹ cleft palate¹³ and barotrauma. The fluid on examination is thin and straw coloured. The symptoms include deafness, aural fullness³ in the ear, auto phony, tinnitus.

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The signs are dull drum, air bubbles behind the ear drum, air fluid level behind the ear drum, dilated vessels with pinkish drum, bluish drum, tuning fork tests show conductive hearing loss, retracted and immobile drum on pneumatoscopy. The persistent fluid in middle ear predisposes to formation of adhesions and tympanosclerosis. The diagnosis is confirmed by pure tone audiometry and tympanometry. The management comprises of treatment of otitis media with effusion and that of predisposing factor.

Table-1
Etiology of otitis media with effusion: N = 50

No	Etiology	Patients Number	%
1	Upper respiratory tract infection	25	50
2	Nasopharyngeal angiofibroma	03	06
3	Nasopharyngeal carcinoma	10	20
4	Nasal polyp	08	16
5	Unresolved acute suppurative otitis media	03	06
6	Barotrauma	01	02

Table-2
Presenting symptoms of otitis media with effusion N = 50

No	Symptoms	Patients Number	%
1	Deafness	50	100
2	Popping in ear	12	24
3	Feeling of blocked ear	30	60
4	Choppy feeling	40	80

Table-3
Signs of otitis media with effusion: N = 50

No	Sign	Patients Number	%
1	Dull drum	30	60
2	Dull drum with dilated vessels	20	40
3	Immobile drum	40	80
4	Air fluid level with bubbles	15	30
05	Retracted drum	20	40
06	Bluish drum	02	04

Table-4
Severity of conductive hearing loss: N = 50

No	Severity	Patients Number	%
1	Mild	08	16
2	Moderate	30	60
3	Severe	12	24

Table-5
Demographic data: N = 50

No	Sex	Patients Number	%
1	Male	30	60
2	Female	20	40

Table-6
Treatment plan: N=50

No	Treatment	Patients Number	%
1	Antibiotic	20	40
2	Treatment of predisposing factor	50	100
3	Grommet insertion	15	30
4	Absconded	05	10

The otitis media with effusion is treated by antibiotics and insertion of grommets. The role of decongestants, antihistamines¹⁴, monteleukast¹⁵ and steroids is controversial.

The recurrent cases of otitis media with effusion are treated by cortical mastoidectomy and grommet insertion¹⁶. CO (2) laser myringotomy is a useful treatment modality for otitis media with effusion in adults¹⁷.

DISCUSSION

The otitis media with effusion is frequently seen in adults. The etiological factors are usually different from those in infants and children. Usually it is blamed that a nasopharyngeal pathology is responsible for otitis media with effusion in adults. In adults the most common cause for otitis media with effusion was upper respiratory tract infection^{18,19} as compared with adenoids which are most commonly blamed to be responsible for otitis media with effusion in children. The clinical presentation in adults is conductive

deafness in addition to predisposing factor but in children the deafness is noticed by the parents and teachers or the deafness is picked up during screening. The signs in the ear are same as those of adults but examination of nasopharynx is much easier in adults which most of the time shows etiological factor responsible as compared with children due to smaller size of nasopharynx and lack of cooperation. There are different etiological factors such as nasopharyngeal carcinoma, nasopharyngeal angiofibroma, nasal polyps in adults which are not seen in children with otitis media with effusion. The treatment of otitis media with effusion in adults is the same as in children that is myringotomy with and without grommet insertion and treatment of the predisposing factor.

CONCLUSION

The otitis media with effusion in adults is not very rare and such patients must be properly investigated to rule out any grave pathology in the nasopharynx such as Nasopharyngeal carcinoma.

REFERENCES

1. Tan She, Zhan Y, Yin She, Tang Az. Analysis of sniffing test in otitis media with effusion 2012; 47: 311-3.
2. Daniel M, Imtiaz-Umer S, Fergie N, Birch all JP, Bays ton R. Bacterial involvement in otitis media with effusion. Into J Pediatric Otorhinolaryngology. 2012 Jul 19.
3. Ayden E, Tartan E, Yokel. Concurrent assay for four bacterial species including *alloiococcus* otitis's in middle ear, nasopharynx and tonsils of children with otitis media with effusion: a preliminary report. Clin Ext Otorhinolaryngology. 2012; 5: 81-5.
4. Park CW, Chung JH, Min HJ, Kim KR, Tae K, Cho SH, Lee SH. *Helicobacter pylori* in middle ear of children with otitis media with effusion. Chin Med J (Engle). 2011; 124: 4275-8.
5. Fancy T, Mather's PH, Ramadan HH. Otitis media with effusion: a possible role for *Helicobacter pylori*? Otolaryngology Head Neck Surg. 2009; 140: 256-8.
6. Ho KY, Lee KW, Chai CY, Kuok WR, Wang HM, Chine CY. Early recognition of nasopharyngeal cancer in adults with only otitis media with effusion. J Otolaryngology Head Neck Surg. 2008; 37: 362-5.
7. Morazán Y, Chew YK, Chirr A, Brito-Mutunayagam S. Nasopharyngeal carcinoma: recognizing it early in children with otitis media with effusion. Med J Malaysia. 2008; 63: 261-2.
8. Sadr AH, Sanity KA, Prior M. Isolated otitis media with effusion in adults: is biopsy of the postnasal space required? Ear Arch Otorhinolaryngology. 2009; 266: 1667-8.
9. Pelican Z. Audiometric changes in chronic secretory otitis media due to nasal allergy. Otol Neurotol. 2009; 30: 868-75.
10. Lack G, Caulfield H, Penagos M. The link between otitis media with effusion and allergy: a potential role for intranasal corticosteroids. Pediatric Allergy Immunol. 2011; 22: 258-66.
11. Chaudhry S, Ahmad Z, Khan FB, Afzal M. Frequency of otitis media in patients of nasal polypi. J Ayub Med Coll Abbottabad. 2010; 22: 83-5.
12. Parietti-Winkler C, Baumann C, Gallet P, Gauchard G, Jankowski R. Otitis media with effusion as a marker of the inflammatory process associated to nasal polyposis. Rhinology. 2009; 47: 396-9.
13. Flynn T, Möller C, Lohmander A, Magnusson L. Hearing and otitis media with effusion in young adults with cleft lip and palate. Acta Otolaryngol. 2012 Jun 5.
14. Griffin G, Flynn CA. Antihistamines and/or decongestants for otitis media with effusion (OME) in children. Cochrane Database Syst Rev. 2011; 7: CD003423.
15. Schoem SR, Willard A, Combs JT. A prospective, randomized, placebo-controlled, double-blind study of montelukast's effect on persistent middle ear effusion. Ear Nose Throat J. 2010; 89: 434-7.
16. Long X, Feng X, Zhang T, Xie M. Mastoidectomy and ventilation tube placement

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- for refractory secretory otitis media 2011; 25: 590-2.
17. Chang CW, Yang YW, Fu CY, Shiao AS. Differences between children and adults with otitis media with effusion treated with CO (2) laser myringotomy. J Chin Med Assoc. 2012; 75: 29-35.
 18. Marks N, Mills F. A controlled trial of cotrimoxazole therapy in secretory Otitis media. Journal of Laryngology and otology 95,1003-10
 19. Zaidi SH. Repeated URTI and mastoid pneumatization. PJO, 1991;7:17-19

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