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Clinical profile of patients with secretory otitis media

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ABSTRACT

Background: Most affected by secretory otitis media are children who more often than not do often know that something is wrong with their ears. It is the most common hearing disorder in children starting mostly before school age. Affected ears harbor middle ear effusion which causes hearing, loss, but usually no other otologic symptoms.

Methods: The fifty cases were chosen in different age group and sex, based on their symptoms, and confirmed by otoscopic finding and pure tone audiometry. And these were further studied in detail as per the proforma enclosed.

Results: On otoscopic examination the predominant sign was the prominence of handle of malleus and short process, flashing movement of the tympanic membrane. The tympanic membrane was found as full, lusterless and amber coloured.

Conclusions: Secretory otitis media can be diagnosed clinically to the accuracy of 90%.

Keywords: Secretory otitis media, Middle ear pathology, Clinical profile

INTRODUCTION

The normal ear has a thin drum, often semi-transparent, showing at times though it is the yellowish grey colour of the promotrium. Not infrequently, the incudostapedial region is also seen. Blood vessels are sparse; when present they are rather thin.

In the presence of a tympanic mucoid effusion, the drum loses all or most of its semitransparency and acquires a grey whitish full, dull colour and a thick texture. Frequently there are prominent blood vessels mostly at the annular circumference, where the blood vessels can be seen extending to the nearby external canal. This description is typical for the majority mucoid effusions.¹ At times, yellow regions or spots are seen within the drum mostly slightly posteriosuperior to the umbo. These spots are pathognomonic for mucus, which through the drum looks yellow, and they have chicken fat like texture. In the presence of a frank serous fluid (about 10% children majority of adult), the drum often retains

some its transparency. At times a fluid can be seen and more often, several air bubbles appear, irregularly located, although the antero-superior region is a favourable location for the bubble.²

If the effusion persists for years or has recurred many times, the drum may begin to sink. In fresh cases, where this is not seen, here some as suggested by the definition in its quiescent phase secretory otitis media has none of the signs and symptoms. When latent in infants and young children it may present with impaired speech and language development. There may be behavioural difficulties and scholastic retardation only young children complain of having difficulty.^{3,4}

Most affected by secretory otitis media are children who more often than not do often know that something is wrong with their ears. It is the most common hearing disorder in children starting mostly before school age. Affected ears harbour middle ear effusion which causes hearing, loss, but usually no other otologic symptoms. As

to the hearing loss, the patients are often too young to know the difference, they do not know what they are missing, what they are supposed or not supposed to hear. Adults who are affected are, on the other hand often very apprehensive and complain of hearing loss in terms which exaggerate the actual amount of missing decibels. Adults usually complain about a "blocking sensation" and loss frequently, may describe a feeling of "fluid" shifting place in the ear. The hearing may fluctuate with head movement, and the amount of hearing loss experienced by particular patients may vary in weekly examination. The distribution curve of hearing loss is bell shaped some ears show no hearing loss with an effusion, while other show a fifty or more dB loss. The average loss is about 28 dB. True vertigo resulted in adults.⁵

The children's with secretory otitis media complaining of vertigo so far not reported. The mechanism of this vertigo is unknown. Secretory otitis media is usually a bilateral condition in (84%) children, while in adult's mostly only one ear.

Secretory otitis media in children is usually diagnosed as a consequence of the mothers or teacher suspicion of hearing loss in the children, the idea that something may be wrong with the child having is often entertained months after the child seen to be in attentive lazy or even a bit retarded.

Mass audiometric and specially tympanometric screening of school children may pick out many with secretory otitis media, however most of these are children whose hearing loss is of minor clinical importance.

METHODS

Fifty cases of suspected secretory otitis media under the age group of 13 years were selected for clinical pathological evaluation and management. These fifty cases were chosen in different age group and sex, based on their symptoms, and confirmed by otoscopic finding and puretone audiometry. And these were further studied in detail as per the proforma enclosed.

Once the diagnosis was confirmed by puretone audiometry as a secretory otitis media, the fluid aspiration was done and sent for culture sensitivity x-ray mastoid was taken in all cases.

Ten patients were put on medical line of treatment consisting of, antibiotics, antihistaminics, steroid, nasal decongestant and ambroxol hydrochloride. These patients were followed up at weekly interval for one month. The refractory cases were taken for myringotomy, grommet insertion, and adenoidectomy (childrens) in one sitting. These cases were followed up at monthly interval for one year. In few of the cases X-ray PNS and proof puncture was also done, in five cases of the total number of cases needed cortical mastoidectomy, because on examination there were signs of mastoiditis i.e. mastoid tenderness etc.

Study setting

This study was carried out for a period of 12 months at a tertiary care hospital. Inclusion criteria were children of age less than 13 years and children complaining features of otitis media.

Exclusion criteria were children who were seriously ill at the time of data collection and subjects who did not give their consent.

Statistical analysis

The data was entered in Microsoft excel and was analyzed using SPSS. Mean, standard deviation, and proportion were used to describe the data.

RESULTS

It was observed that many of the cases belong to poor socioeconomic status (60-40%). The various symptoms presented by these fifty patients are shown in the table IV A and B. As per this table the predominant symptoms was fullness in the ear in 60% and hard of hearing in 23%. It was noted in our study that there was female preponderance.

Table 1: Distribution based on age.

Age group (in years)	No. of cases	Percentage (%)
0-4	04	08
5-7	05	10
8-9	31	62
10-13	10	20
Total	50	100

Table 2: Age incidence according to Jacob Sade in 212 cases.

Age group (in years)	No. of cases	Percentage (%)
4-5	03	1.41
6-7	03	1.41
7-9	160	75.49
10-13	46	21.69

Table 3: Distribution based on gender.

Sex	No. of cases	Percentage (%)
Male	24	48
Female	26	52
Total	50	100

On otoscopic examination the predominant sign was the prominence of handle of malleus and short process, flashing movement of the tympanic membrane and the tympanic membrane was found to be full, lustreless and amber coloured.

Table 4: Distribution based on symptoms.

Symptoms	No. of cases	Percentage (%)
Fullness in the ear	30	60%
Hard of hearing	12	24%
Tinnitus	05	10%
Bubbling	03	6.67%
Total	50	100%

Table 5: Distribution based on signs.

Signs	No. of cases	Percentage (%)
Dull, lustreless amber coloured tympanic membrane	18	36
Prominent handle of malleus	15	30
I Prominent short process	10	20
Air bubble	03	06
Hashing movement	04	08
Total	50	100

DISCUSSION

Secretory otitis media is commonest cause of hearing difficulty encountered by the otologist. It is characterised by accumulation of fluid (serous or mucoid) in the middle ear cavity, due to alteration in mucociliary systems within middle ear and eustachian tube and inadequate treatment by antibiotics. Otolologists all over the world have attempted to solve the problems encountered in secretory otitis media and to provide the best treatment (hearing improvement). It was observed that the commonest age group suffering from secretory otitis media were in the age group of 7-9 years. According to other studies it was 3 years.^{6,7} This high age indicate the late presentation of the patients to the hospital due to their ignorance and poverty and low socio economic conditions in this area and lack of regular screening in the school children as they do in the western countries.

In our study it is observed that the secretory otitis media is common in female children compared to male children (52%-48%). This may be due to carelessness towards the female children in our country. Also heavy works to the children can cause low body immunity and susceptibility to the disease. Generally children in our country will get very low protein diet, and develop repeated upper respiratory tract infection. These factors may suggest possible increase in female children. A study has shown that male children have more common than female children due to male preponderance of childhood infection and Boys have less well pneumatized air cells system which may be a consequence of tubal dysfunction and more marked middle ear pathology, supporting the environmental rather than the hereditary theory of mastoid pneumatization.⁸

This fact is clearly reflected in the present study where most of cases (70%) belong to the poor category, (16%) belongs to middle class and remaining (14%) belongs to upper class. This poor socio economic status may play a role in the aetiology of the disease directly as well as indirectly.

It is observed in our study that *Streptococcus pneumoniae* (66%), *Haemophilus influenza* (40%) are the major organisms responsible for the disease. Hemlin et al suggested that increased number of pathogens in the nasopharynx resembling those found in the middle ear, and they are *Streptococcus pneumoniae*, *Haemophilus influenza*, *Moxarella catarrholis* and *Streptococcus pyogens*. Another study showed positive bacterial culture in upto 50% of middle ear effusion. Bacteria found were similar to those cultured in cases of acute suppurative otitis media.⁹

The commonest symptoms in order of frequency were fullness in the ear (66%), hard of hearing (24%), tinnitus (10%), bubbling sound (6.67%) in almost all the cases. In present study 60% illness in the ears was explainable on the basis of otoscopic examination by showing fluid in the middle ear cavity. Hard of hearing explained with the help of PTA and tuning fork test which shown as 20-40 db HL. Tinnitus may be due to pressure effect in middle ear cavity. A previous study shown mean of 20 dbHL.¹⁰ Signs in order of frequency were dull lusterless amber coloured tympanic membrane (36%). Prominent handle of malleus (30%), prominence short process (20%), air bubbles (6%) and flashing movement (8%) are the findings observed with the help of otoscopic with halogen bulb and by use of an operating microscope with magnification. Mobility at tympanic membrane was assessed by Siegle's pneumonic spectrum.

Two cases are studied with the help of impedance audiometry and showed flat traces with a well-defined maximum compliance. This study was supported by other studies and showed that 2% of children with bilateral hearing loss of 25 dB or more.¹¹

CONCLUSION

In the present study the commonest age group suffering from secretory otitis media were 7-9 years with female preponderance. 70% of the cases belong to poor socioeconomic status. It was found that *Streptococcus pneumoniae* (66%), *Haemophilus influenza* (40%) are the major organisms responsible for the disease. The most common symptoms observed were fullness of ear and hard of hearing.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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