Int.J.Curr.Microbiol.App.Sci (2020) *9*(12): 1851-1857

International Journal of Current Microbiology and Applied Sciences
***ISSN: 2319-7706* Volume 9 Number 12 (2020)**
Journal homepage: http://www.ijcmas.com

Original Research Article https://doi.org/10.20546/ijcmas.2020.912.220

A Study on Chronic Suppurative Otitis Media in a Tribal Area Medical College

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Keywords

Suppurative, Otitis media, Chronic, Otorrhoea

Article Info

Accepted:
14 November 2020
Available Online:
10 December 2020

A B S T R A C T

Chronic suppurative otitis media (CSOM) is quite a common disease in Odisha. Because of lack of awareness, low socio economy status and scarcity of trained health care professionals in tribal areas, such patients do not get a proper treatment in time. As many a times this disease runs an indolent course, the patients do not give due importance to their symptoms and treat the symptoms as only a nuisance leading to a false security. Self-treatment and inadequate and improper treatment by non- qualified persons leads to high bacterial resistance and hence non response to conventional antibiotics in the disease occurs. A study was conducted in Department of E.N.T. & Head and neck Surgery- S.L.N. Medical College, Koraput, between November 2017 TO October 2019 to gain a knowledge base about different patterns of presentations of CSOM in tribal based area so that a proper scientific approach can be taken up for their proper management as well as a policy change can take place for a better outcome. The patients were given information about their disease as well as the undertaken study and written informed consent was obtained prior to the study. CSOM is found to be prevalent in the second to third decades of life in people belonging to lower socio- economic status, mostly in male presenting with complaints of discharge from ear and reduced hearing along with this very few presented with features of complications like pain in ear and other neurological signs. CSOM being a very common disease in all age group in this area of Orissa that leads to much morbidity in poor patients. This study will guide health care professionals and policy makers to formulate a sound policy to alleviate this common and at times preventable disease.

Introduction

Chronic suppurative otitis media is a very common disease. It presents with persistent or recurrent ear discharge, progressive hearing loss and in complicated case otalgia, vertigo, headache, vomiting and altered sensorium. If untreated it presents with various complications which may be intra cranial and extra cranial. Although chronic suppurative otitis media has been a very common disease in all age group and both sexes, many a people neglect early symptoms leading to a chronicity of the disease. In developed countries, it is the most common indication for prescribing antibiotics[1]. It is the second

most common disease of childhood after upper respiratory tract infection. As Koraput where this study was undertaken caters to tribal population, lots of cases of suppurative otitis media present to the hospital with varied presentation. As this is a nascent college, a study was undertaken to keep database about different aspects of this common disease for formulating a favorable protocol for the tribal people.

Chronic suppurative otitis media (CSOM) is an important middle ear disease since time immemorial [2].

Csom is defined as a chronic and persistent inflammation of mucoperiosteal lining of middle ear cleft. Middle ear cleft includes middle ear, mastoid air cell system and eustachean tube. As this space is anatomically a continuation of upper respiratory tract, any inflammation of the later will affect adversely the middle ear cleft. Upper respiratory tract infection is quite common in the tribal of this area, because of cold climate, hilly terrain, low socio economic status leading to poor body immunity and lack of proper health care facility. So, the incidence of chronic suppurative otitis media is also quite prevalent in this area.

CSOM is pathologically divide into two categories depending upon the site of location of the pathology: Tub tympanic and Attico antral. In the former category, the pathology is limited to eustachean tube and middle ear, while in the later group along with middle ear, mastoid air cell system is affected. In the tubo tympanic group as two way drainage path in the form of eustachean tube and perforated tympanic membrane is present, chances of complication is negligible. In attico antral group, mastoid process being a blind reservoir with aditus being the only communicating channel, there is stagnation of discharge leading to rapid multiplication of offending organisms leading to increased virulency of the later and complications. The aditus also gets blocked by inflammatory edema of middle ear mucosa leading to further narrowing the path of egress for the pus. Moreover in the attico antral group, choleateatoma and granulation tissue are the finding. Cholesteatoma because of its bone eroding property and granulation tissue because of its hyperemic osteoporotic activity leads to spread of disease outside temporal bone causing different intra cranial and extra cranial complications. Some of these complications are fatal. Different chemical mediators released by cholesteatoma may be offending too.

As the poor and ignorant patients are irregular in their treatment, habituated to pond bath and neglect symptoms chronicity develops. Inadequate treatment leads to antibiotic resistance, hearing loss and much morbidity. Because of the indolent symptoms in many cases, the patients do not attach much importance to the symptoms and neglect their health. As surgical treatment facility is not widely available, proper and permanent cure is also difficult to achieve.

The patients taken for this study were those attending department of E.N.T. & head and neck Surgery- S.L.N. Medical College, Koraput between November 2017 TO October 2019. The present study took 920 no. of such cases. Data of the cases were included in the study after obtaining informed written consent.

The patients were thoroughly clinically examined as regard their symptoms in the following phases:

A thorough otolaryngological clinical examination and general examination

Hearing assessment

Intraoperative middle ear and mastoid status (in operated case)

Pure tone audiometry was done in every case. X-ray of skull (lateral view) and PNS, CT scan temporal bone, routine haematological investigations and examination under microscope were done.

Observation

Table.1 Incidence of CSOM

Total Patients in E.N.T. OPD	Total no. of SOM cases	Total no. of cases of CSOM	Percentage of CSOM cases
13800	4600	920	20%

Results and Discussion

Out of 13800 no. of patients coming to outpatient dept. Of S.L.N. Medical College, Koraput between November 2017 TO October 2019, 4600 were detected to have suppurative otitis media and 920 of them were chronic suppurative otitis media as shown in Table 1. The percentage of patients in relation to suppurative otitis media was20%. Rest of the cases comprises acute suppurative otitis media, secretory otitis media etc.

Maximum number of patients 60% (552) belongs to 2nd and 3rd decade followed by 30 to 40 years of age (17%). Male preponderance was also noted, usually at a ratio of 3:1 across all age groups (Table 2).

The patients were divided into various socio economic status based on modified Kuppuswamy and U. Pareekh scale- 2019 (Rabbanie tariq wani, Journal of family medicine & primary care-Wolter kluwer: socioeconomic status scale- modified Kuppuswamy & U. Preekh ‘s scale updated for 2019-Aug 2020) and majority belongs to low socio-economic status (58%). The combined factor of poverty and adverse financial condition delays their coming to hospital for health care. Moreover, in assessable terrain in tribal areas as well as lack of education leads to unawareness of the potential complications of the disease as well as curability of the disease. About 90% of the patients in this study reside in rural area and that may be reason for their delay in availing health care facility (Table 3).

As shown in the table above, 49% cases were agricultural workers followed by Industrial workers (19.5%) and house wives. As this tribal area has got a rich population of agricultural workers, it is but natural that maximum no. of patients belongs to this category. Daily laborers also have a significant incidence of otitis media (Table 4).

62% of the patients came with the finding of mucoid discharge and only 22% came with purulent discharge. The former group had duration of discharge for several months and the discharge used to be aggravated with episodes of upper airway infection. Only 12% had blood stained discharge. Dizziness was complained by 12 (11%) patients. Central perforation in tympanic membrane was the commonest finding and it involved multiple quadrants. Attic retraction and posterior marginal perforation was the finding in 2% and 1% of cases respectively. As far as other signs are concerned, hearing loss was the commonest one in 89% cases, aural polyp and granulation in 1%, mastoid tenderness in about 3% cases seen (Table 5).

As far as hearing is concerned, conductive hearing loss was found in 82% cases and mixed loss in 13% cases. Pure sensory neural loss was the finding in only 5% cases (Table 6).

More than 90% of the cases belong to safe variety and only 7% were of the unsafe kind (Table 7).

Table.2 Age and sex incidence

Age group in years	Male	Female	Total	Percentage
21-30	385	167	552	**60**
31-40	89	67	156	**17**
41-50	82	19	101	**11**
51-60	42	22	64	**7**
61-70	**35**	**12**	**47**	**5**

Table.3 Socio- economic status

Socioeconomic Status	No. of cases	Percentage
Upper Class	92	**10%**
Middle Class	294	**32%**
Lower Class	**534**	**58%**

Table.4 Occupation

Occupation	No. of Cases	Percentage
Agricultural Worker	459	**49%**
Laborer	166	**18%**
Office Worker	184	**19.5%**
House Wives	111	**13.5%**
Total Cases	**920**	**100.0**

Table.5 Symptoms and signs

SYMPTOMS % SIGNS	NO. OF CASES
Mucoid discharge	**570(62%)**
Purulent discharge	**203(22%)**
Mucopurulent discharge	**147(16%**
Dizziness	**12(13%)**
Blood stained discharge	**11(12%)**
Central Perforation	**856(93%)**
Single quadrant	**206(24%)**
Multiple quadrant	**479(56%)**
Subtotal	**171(20%)**
Attic Retraction	**22 (2.39%)**
Posterior marginal perforation	**16 (1.7%)**
Hearing loss	**819(89%)**
Mastoid tenderness	**27(2.98%)**
Post aural swelling	**9(1%)**
Granulation tissue	**16(1.7%)**
Polyp	**10 (1.08%)**
Facial nerve paralysis	**02 (0.2%)**

Table.6 Types of hearing loss

TYPE	NO. OF CASES
Conductive	754 (82%)
Sensorineural	46 (5%)
Mixed	120 (13%)
Total	920

Table.7 Type of CSOM

TYPE OF CSOM	NO. OF CASES
Safe	856 (93%)
Unsafe	64 (7%)
Total	920

Out of 13800 no. of total patients attending OPD, 4600 were detected to have suppurative otitis media and 920 of them were chronic suppurative otitis media as shown in Table 1. The percentage of patients in relation to suppurative otitis media was20%. Sitashree *et al.,* [3] observed an incidence of 23.96% of their total OPD attendance suffering from suppurative otitismedia and 19.11% were having CSOM. This can be compared with that of Amit K. Verma *et al.,* [4] who in their study noted the incidence of CSOM to be 15.3% in a pediatric population. Browing GG *et al.,* [5]found the total prevalence of chronic otitis media to be 16%.

Commonest age group to be affected is 2nd and 3rd decade followed by 3rd and 4th decade. Narve *et al.,* [6] had similar finding. Male preponderance was also noted, at a ratio of 3:1 across all age groups. Ahmed M Alabbais[7] in his study found male preponderance of CSOM cases i.e.54.16%. Sitashree *et al.,* had also male predominance finding. More no of suppurative otitis media cases in male population may be due to increased number of their attendance in hospital and participation in activities that predisposes them to upper air way infections like pond bathing and outdoor cold environment exposure. Majority belongs to low socio-economic status (58%) as per modified Kuppuswamy and Pareekh scale-2019. Narve *et al.,* [6] found 67% of their patients belonging to the lower socio-economic group. Wakode *et al.,* [13] and Kamal *et al.,* [14] had also similar finding. This is comparable to that of Browning GG *et al.,* [5].They found higher prevalence of CSOM in lower socio economic groups with manual workers. Primary Health care is not a priority in people with a background of low socio-economic status and they neglect common ailments like upper respiratory tract infections leading to multiple episodes of this infection in them, which in turn affects ear infection. Moreover, living in overcrowded space leads to cross infection. Another factor may be their low body immunity.

As shown in the table four above, 49% cases were agricultural workers followed by Industrial workers (19.5%) and housewives. Browning *et al.,*[5] found higher prevalence of CSOM in manual workers.

Otorrohea which is either mucoid (62%) or purulent (22%) and in only a few cases blood stained (12%) were commonest presenting features. Dizziness was complained by 12

(11%) patients. Central perforation in tympanic membrane involving multiple quadrants. Attic retraction and posterior marginal perforation were the findings. As far as other signs are concerned, hearing loss (89%), aural polyp and granulation, mastoid tenderness were also noted. Similar findings were noted by V P Narveet 6, Olatoke F [8]and Altuntas A *et al.*, [9] in their series. Narve *et al.*, .,[6] found (77%) of their cases had safe CSOM with central perforation while only 23 cases had attic perforation and granulation tissue or polypoidal tissue. Bhusal *et al.*, [12] had identical findings.

As far as hearing is concerned, conductive hearing loss was found in 82% cases and mixed loss in 13% cases. Pure sensory neural loss was the finding in only 5% cases. Seetashri et[3] al found the incidence of conductive and mixed hearing loss in in their series in 60.35%, 39.65% of cases respectively. This too is comparable to finding of Ahmed M. Alabbasi[7] *et al.*, as their study found conductive hearing loss in 55.5% cases, mixed hearing loss in 44.3% cases and sensory neural loss in 16.6% cases. Ramanuj Bansal[11] in a study of 758 cases, found conductive hearing loss in 86.17% of cases. Minja[12] in a study of 189 CSOM cases noted conductive hearing loss in 73(82%) and sensorineural (SNHL) in 16 (18%) cases. These findings are comparable to our study.

Chronic suppurative otitis media is a common disease in the tribal population and male in the second and third decade are predominant suffers. Maximum number of such patients belong to low socio economic status. Persistent or recurrent discharge from ear, decreased hearing, dizziness, otalgia, swelling in the post aural area with tenderness over the area are the common symptoms. Central perforation involving multiple quadrant of tympanic membrane, conductive hearing loss are usual findings on examination.

A proper history taking including social status and cultural background and thorough clinical evaluation leads to exact diagnosis of this common condition. As the poor patients from a tribal belt suffer a lot due to this disease as they are ignorant about the potential complications as well as preventive measures, loss of precious manpower is always a probability. Therefore, a shift on public policy to impart holistic care to the unfortunate people of this tribal area will go a long way in alleviating their suffering. Hopefully, the data gathered through this study will propel us in a right direction to achieve this.

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How to cite this article:

Satyajit Mishra. 2020. A Study on Chronic Suppurative Otitis Media in a Tribal Area Medical College. *Int.J.Curr.Microbiol.App.Sci.* 9(12): 1851-1857.
doi: https://doi.org/10.20546/ijcmas.2020.912.220