



Complications of suppurative otitis media - a retrospective study in a tertiary care hospital

Satyajit Mishra^{1*}, Tanuja Panigrahi²

1 Assistant Professor, Dept. Of E.N.T. and Head and Neck Surgery, V.S.S. Medical College and Hospital, Burla, Odisha.

2 Consultant, St. Thomas Hospital, Chennai.

ARTICLE HISTORY

Received: 09.08.2013

Accepted: 08.09.2013

Available online: 10.11.2013

Keywords:

Suppurative otitis media, complications

*Corresponding author:

Email : dr.satyajitmishra@gmail.com

ABSTRACT

Suppurative otitis media is quite a common disease in India and more so in Odisha. Because of inadequate treatment as well as lack of treatment, the disease assumes a chronicity and subsequently different complications ensues. Western Odisha and adjacent Chhatisgarh being poor economically and also having a poor health care facility, poor people of this area are at a higher risk of developing such complications. Therefore, a retrospective study over a period of two years was carried out in V.S.S. Medical College, Burla-Sambalpur (Odisha) to have a data regarding the incidence & various pattern of presentations of complications of suppurative otitis media.

INTRODUCTION

Infection of the middle ear cleft is a common occurrence and so its complications in spite of medical science having sailed through various revolutionary routes to reach the present era of antibiotics. Suppurative otitis media has been a very common disease of childhood and 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. Because of its high incidence as well as chronicity, it leads to a complacency in the part of the patients-especially the poor, illiterate and rural dwellers- leading to a high incidence of complications. Self treatment and inadequate treatment by non-qualified persons leads to high bacterial resistance in the disease. All these factors have lead to a high incidence of complications secondary to suppurative otitis media. The present study was designed to stress upon clinicopathological aspects of intracranial and extra cranial complications of suppurative otitis media amongst patients attending to Dept. of E.N.T. V.S.S. Medical College Hospital- Burla-Odisha that caters to the need of patients of Western Odisha as well as neighbouring Chhattisgarh.

MATERIALS AND METHOD

Present work was undertaken in the Dept. Of E.N.T. V.S.S. Medical College Hospital- Burla-Odisha between August 2010 and September 2012. All case of suppurative otitis media attending E.N.T. Outdoor and being admitted in the indoor were taken into consideration. Hospital records were studied from registration section and following data were collected in regard to

total no. of new E.N.T. cases registered in the O.P.D. with different ailments, total no. of C.S.O.M. and A.S.O.M. Cases ,total no. of cases with complications secondary to C.S.O.M. and A.S.O.M, these patients were examined & records were maintained in respect of age, sex, occupation, socio economic status, duration of complaint, detailed clinical history, any relevant past history & treatment history, general & local examinations ,routine haematological examinations, special investigations like pure tone audiometry, Tympanometry, pus for culture and sensitivity. C.T. Scan & MRI (if needed).

RESULTS

Table 1 - Out of a total attendance of 24,492 no. of patients in E.N.T. Dept. During this period, 5573 were suffering from suppurative otitis media, the incidence being 22.75% (Table 1). Out of these 1102 were suffering from C.S.O.M & 4471 from A.S.O.M.

Table 2 - Out of total 4471 no. of CSOM cases, 274 (4.92%) no. and out of 1102 no. of ASOM cases, 15 (1.36%) cases developed complications.

Table 3 - The most vulnerable age group to suffer from complications in both groups were below 10 years. They being 31.51% & 73% of cases for chronic & acute variety respectively.

Table 4 - Regarding sex incidence, male patients with CSOM & ASOM had more incidences of both intracranial & extra cranial complications. This can be attributed to high no. of male patients coming to hospital with the suppurative ear diseases.

Table 1: Showing total number of SOM Cases attending E.N.T OPD

Total no. of cases In E.N.T. OPD	Total no. of SOM patients	Total no. of CSOM/ASOM	Incidence of CSOM cases	Incidence of ASOMcase
24,492	5573	CSOM-4471 ASOM-1102	18.25%	4.49%

Table 2: Showing number of patients with complications and their percentage

Types of SOM	Total No. Patients	Total No. of Cases with complications	Percentage
ASOM	1102	15	1.36%
CSOM	4471	274	4.92%

Table 3: Showing the age wise distribution of cases

No. of CSOM cases	CSOM & COMPLICA TIONS	PERCE NTAGE	AGE in years	No. of ASOM cases	ASOM & COMPLIC ATIONS	PERCENT AGE
2150	86	31.51	Up to 10	818	11	73.33
882	65	23.74	11-20	183	02	13.33
554	55	20.09	21-30	54	0	0
438	53	19.63	31-40	44	01	6.66
288	08	2.74	41-50	03	01	6.66
129	04	1.37	51-60	0	0	0
30	03	0.91	Above 60	0	0	0

Table 4: Shows sex incidence incidence of complications due to csom

SEX	CSOM CASES		EXTRACRANIAL COMPLICATIONS		INTRACRANIAL COMPLICATIONS		TOTAL
	NO.	%	NO.	%	No.	%	
MALE	2904	64.96	162	68.04	27	75	189
FEMALE	1567	35.04	76	32.36	9	25	91

Table 5: Showing the sex incidence of ASOM and their complications

SEX	ASOM CASES		EXTRACRANIAL COMPLICATIONS		INTRACRANIAL COMPLICATIONS	
	NO.	%	NO.	%	No.	%
MALE	750	68.1	10	71.42	1	100
FEMALE	352	31.9	4	28.58	0	0

Table 6: Showing Residential Distribution in the Present Study

RESIDENTIAL STATUS	CSOM with complications	PERCENTAGE	ASOM with complications	PERCENTAGE
URBAN	70	25.38	5	33.33
RURAL	204	74.42	10	66.66

Table 6 - In both CSOM & ASOM cases with complications, the majority of patients were from rural areas with a low socio-economic status. This is not surprising as Western Odisha is an underdeveloped region with high rural settlements that have a poor health facility and awareness.

Table 8 - In the study, out of 274 no. of cases with a background of CSOM, 238 (86.86 %) were having extra cranial & 36 (13.14%) were having intracranial complications. Similarly out of 15 no. of cases of ASOM with complications, 14 (93.33 %) had extra cranial & only 1 had intracranial complications. Meningitis was the most common intracranial complications followed by sub dural and temporal lobe abscess. Regarding extra cranial complications in csom group, mastoiditis (57%) followed

by sub periosteal abscess (18%) were quite prevalent. But, in cases of complications secondary to ASOM, sub periosteal abscess (57%) came to be the most prevalent extra cranial complication. Only one case of ASOM leads to an intracranial complication like meningitis

DISCUSSION

The present study shows 274 (4.92%) cases having various complications due to CSOM and 15 (1.36%) cases having various complications due to ASOM. This is comparable to that of Palva et al [2] who in a study of 191 patients of CSOM, found complications in 8 cases (4.2%). Sachdev & Bhatia [3] from their observation of 2643 cases of CSOM found complications in 90

Table 7: Showing incidence of socio economic status in the present study

SOCIO ECONOMIC STATUS	CSOM with complications	PERCENTAGE	ASOM with complications	PERCENTAGE
LOW	189	69.26	11	73.33
MEDIUM	75	27.04	04	26.67
HIGH	10	3.7		

Table 8: Showing Incidence of Individual Intracranial Complications of CSOM

Name of complication		No. of Cases	% out of 36 intracranial complications	% out of Total CSOM cases
Meningitis		25	69.44%	0.55%
Subdural Abscess		4	11.11%	0.08%
Extradural Abscess		2	5.55%	0.04%
Brain Abscess	Temporal	5	13.88%	0.11%
	Cerebellar	0	0%	0%

Table 9: Showing Incidence of Individual Extra cranial Complications

Name of complications	No. of cases	% out of Extra cranial Complications	% out of Total CSOM cases
MASTOIDITIS	138	57.98%	3.08%
SUBPERIOSTEAL ABSCCESS	43	18.07%	0.96%
FACIAL PALSY	23	9.66%	0.51%
LABRYNTHITIS	34	14.29%	0.76%

(3.4%) cases.

The incidence of complications due to ASOM is 1.36%, is comparable to that of P. T Wakode et al [4] who in their study of 4104 school going children, age ranging from 3–15 years for duration of 1 year, found the incidence of complications of acute

otitis media to be 1.3%. The age incidence that we found (less than ten) years for both groups were comparable to the study of Oo olubango [5] who found a maximum age incidence at below six years. Similar were the findings of Bluestone [6].

Male sex was more susceptible to develop complications

Table 10: Table Showing Incidence of Individual Extra cranial and Intracranial Complications of ASOM

NO. OF cases	No of cases of individual complications	% of complications
Asom- 1102 Complications- 15 Extra cranial -14 Intracranial- 1	Mastoiditis-3	21.42%
	Subperiosteal abscess-8	57.16%
	Facial palsy-2	14.28%
	Labrynthitis-1	7.14%
	Meningitis-1	100%

Table 11: Showing Pre-Operative CT Scan Finding Of Complicated Cases

Name of complications	No. of cases	% out of total 274 cases
Cholesteatoma	148	54.01%
Granulation tissue	65	23.9%
Ossicular chain involvement	92	33.57%
Facial canal dehiscence	9	3.28%
Subdural abscess	4	1.45%
Extradural abscess	2	0.72%
Brain abscess	5	1.82%

HRCT finding of brain with special reference to temporal bone showed cholesteatoma in 54.01% cases followed by ossicular chain involvement in 33.57% cases. Out of 25 cases of facial palsy, only 9 cases had facial canal dehiscence in CT finding. Diagnosis of the entire intracranial abscess was done on the basis of CT scan findings. These findings were correlated with intraoperative findings.

(both intra and extra cranial) both in CSOM & ASOM groups. This concurs with the findings of Ahmed M Alabbais [7] who had found incidence of more than 54% male suffers in his study.

The rural populace & people with low socio economic status were the worst suffers in this study that agrees with the findings of Oo olubango [5]. In the present study, there are 274 cases of various complications. Out of 274 cases, 36 cases had intracranial complications. This comprises of (0.80%) of total CSOM & 13.14% of all complicated cases of CSOM. Rest 238

complications were extra cranial, which comprises of 5.32% of total CSOM & 86.86% of total complications. The above result is comparable to that of Leskinsen K et al [8]. In their study of 50 cases of CSOM, 41 (82%) had intratemporal and 9 (18%) had intracranial complications. It is evident from the present series that extra cranial complications outnumber intracranial complication, which is comparable to Leskinen K et al. The same pattern is observed in ASOM cases & its complications.

It is evident from the above table that 69.44% of intracranial complications were due to otogenic meningitis which is

comparable with findings of S I Ibrahim, P P Cheang and D A Nunez [9] who in their study found that meningitis was the commonest intracranial complication. Brain abscess was found in 5 cases, constituting 13.88% of total intracranial complications and all were temporal lobe abscesses which are comparable to that of Siba p dubey et al []

Mastoiditis comprises of 57.98% of total extra cranial complications and is the commonest in the present series followed by subperiosteal abscess, labyrinthitis & facial palsy. This is comparable to that of Siba p dubey [10] et al . They found commonest extra cranial complications were mainly mastoid abscess in 26 (37%), post auricular fistula in 17 (24%) and facial palsy in 10 (14%) cases. Itzhak brook [] in his study opined that the incidence of mastoiditis is higher in developing countries, mostly as a consequence of untreated OM.

Cholesteatoma & granulation tissue found in C.T. at a percentage of 54 & 23 respectively clearly suggests that they are the potential risk factors to develop complications.

CONCLUSION

The high incidence of CSOM & ASOM in this part of Odisha as well as complications there of needs to be viewed in the context of high illiteracy & poor medical facility. Therefore, both to prevent the incidence of CSOM/ASOM & complications there upon, a proper information about these problems has to be imparted to the common people.

REFERENCES

1. Peter S. Morris (Upper respiratory tract infections including otitis media) ; Pediatric clinic of North America 56(2009);page 101-117
2. Palva T et al: JLO: Nov. 1964: page 977-88.
3. Sachdev VP & Bhatia JM: Ind Jour. Otolaryngo: 17:2: Jun 1965: page 135-39.
4. P.T.Wakode et al: IJO & HNS: 58:2: Apr 2006:page 101-111
5. O O Olubanjo: The int. Jour of Paed & Neonatology: 8:1: Nov 2008:page 44-56.
6. Blustone Charles D: Annals of O.R.L. suppl; 2: 80: Aug 1971:page 1-25.
7. Ahmed M. Alabbasi: Journal of Medical and Medical Sciences 1: 4: May 2010: page 129-133
8. Leskinen K. et al: Pubmedline: 30: 6: Dec 2005: page 511-516.
9. S I Ibrahim: The Jour. Laryngo & Otology: 126: 04: May 2010
10. Siba P. Dubey: American. Jour. Otolary: Mar 2010:page 73-77.