

Changing Pattern of Acute Mastoiditis

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ABSTRACT

Background: To test the hypothesis that the frequency of acute mastoiditis follows acute suppurative otitis media and chronic suppurative otitis media is equal.

Type of Study: Retrospective cross-sectional study.

Methods: 22 cases of Acute Mastoiditis are included in this study in which 13 of acute suppurative otitis media (ASOM) and 9 are of chronic suppurative otitis media (CSOM) which come to ENT unit Services Hospital and Mayo Hospital Lahore from November 2012 to April 2016.

Results: The average age was 19 years, male and female equal in number. 13 ASOM & 8 of CSOM have the earache. 9 CSOM and ASOM have the ear discharge. 11 ASOM & all CSOM have the hearing loss. 13 patients of acute otitis media and 9 patients' chronic suppurative otitis media with cholesteatoma had followed acute mastoiditis.

Conclusion: Acute mastoiditis occurrence after the episodes of acute suppurative otitis media is same due to chronic suppurative otitis media, although, the two have the different pattern but result in the same disease.

Keywords: Acute mastoiditis, acute suppurative otitis media, ASOM Chronic suppurative otitis media

INTRODUCTION

Prior to the discovery of antibiotics, acute mastoiditis was the most common complication of acute otitis media^{1,6}. The most common symptoms are otorrhea, otalgia, subperiosteal abscess & sagging of the posterosuperior meatal wall. The tympanic membrane can appear normal, thickened or can demonstrate a central perforation. Neurological changes may be seen with intracranial complications. Acute mastoiditis with osteitis is known as coalescent mastoiditis^{3,4}. 15% of patients with periostitis will progress to coalescence^{5,8}. The spread of the pus anteriorly to the middle ear via the aditus ad antrum producing spontaneous resolution. If the pus spreads to the soft tissues lying anteromedially a Bezold's abscess may form. The infection may also spread lateral to produce a subperiosteal abscess. The spread of pus medially to the petrous air cells causes petrositis. Perforation of the mastoid tip along the medial aspect of the SCM muscle produces Bezold's abscess in the neck^{2,9}.

Masked mastoiditis has an insidious course, owing to the use of broad spectrum antibiotics to treat middle ear disease^{3,7}. The apparent resolution of symptoms of acute otitis media "masks" the development of mastoiditis and leads to the presentation with intracranial complications. Acute

mastoiditis can also occur in conjunction with chronic ear disease. It has been the teaching in the past that acute mastoiditis only occurred in well pneumatized mastoids in which the thin bony trabeculae are easily broken down. Chronic ear disease has long been associated with a sclerotic "cue - ball" like mastoid which is less susceptible to demineralization^{10,11}. However, several studies note the presence of cholesteatoma in patients with acute mastoiditis.

PATIENTS AND METHODS

This study is carried out at ENT Department Unit1 Mayo Hospital and Services Hospital, Lahore. 22 consecutive cases of acute mastoiditis were included in this study from November 2012 to April 2016. For the case control study we got 66 controls from the hospital. There are three controls against the one case however; it is not the 1 to 3 matching. For controls, those patients who do not have the acute mastoiditis were included in the study. All patients were admitted to the hospital, antibiotics started. If the patient had a mastoid abscess, it was drained by a post aural incision. Examination under microscope (EUM) was performed in all patients. Mastoidectomy performed if granulations or cholesteatoma was identified or acute mastoiditis was not resolving with antibiotics.

RESULTS

Twenty two patients recruited in the study. The ages range from 2 to 80 years, with a mean of is 19.6 years. 5(22.7%) female's 8(36.4%) males of acute

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otitis media and 6(27.3%) females 3(13.6%) males are of chronic suppurative otitis media. All 13(59.1%) of ASOM & 8(36.4%) of CSOM have the earache. 9(40.9%) of ASOM and all CSOM have the ear discharge. 11(52.4%) of ASOM and 9(40.9%) of CSOM have hearing loss. 8(36.4%) of ASOM and 2(9.1%) patients of CSOM have fever. 12(54.5%) have the swelling over mastoid in ASOM & 8(36.4%) CSOM. Under microscopic Examination in 50% patients of acute otitis media, tympanic membrane was visible, 6 patients have congested tympanic membrane, 4 have central perforation, 2 patients developed Bezold abscess and 2 patients suffered acute Labyrinthitis. All 13 patients had acute mastoiditis following acute otitis media. 5 patients of CSOM have marginal / attic perforations and 4 patients sagging of posterosuperior meatal wall. All 9 patients had acute mastoiditis following chronic suppurative otitis media with cholesteatoma. Statistics analysis is carried out. The p-value .394, which shows us that both (ASOM & CSOM) proportion are statistically equal. This shows that the frequency of acute mastoiditis following both acute and chronic suppurative otitis media is equal. The p-value .394, which shows us that both proportion are statistically equal.

Graph: Results

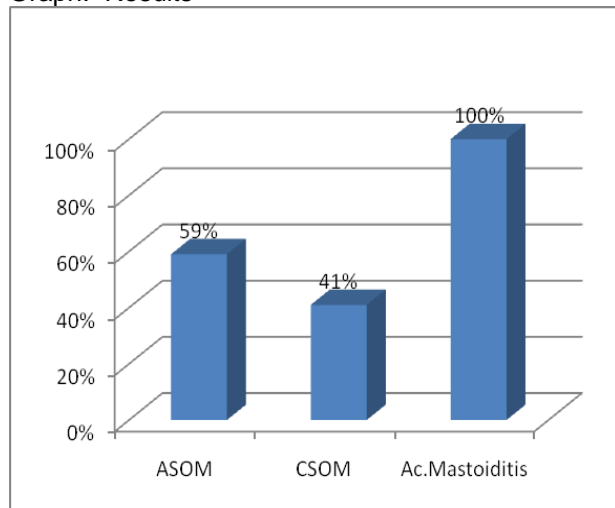


Table 1

Clinical features	ASOM	CSOM
Earache	13(59.1%)	8(36.4%)
Mastoid Swelling	12(54.5%)	8(36.4%)
Ear Discharge	9(40.9%)	9(40.9%)
Hearing Loss	11(52.4%)	9(40.9%)
Central Perforation	4(18.1%)	-
Marginal/attic perforation	-	11(50%)
Foul smelling discharge	8(36.4%)	8(36.4%)
Labyrinthitis	2(9%)	-
Bezold Abscess	-	2(9.1%)

Table 2

Test Statistics	Mastoiditis
Chi-Square(a)	.727
Df	1
Asymp. Sig.	.394

DISCUSSIONS

The earache for long time is risk factor of acute Mastoiditis. It develops only in the patient of CSOM, because it is long-term disease, so there is 89.25 times chance of acute Mastoiditis with the earache. Deafness is also the factor related to the acute Mastoiditis because a person with the episodes of the acute on chronic som has the hearing loss; he has 42.0 times chance of Mastoiditis. Mostly patients of the ASOM are suffering from the high grade fever. If the person has the ear pain and fever, that person has 6.667 times chance of acute Mastoiditis. There are few signs and symptoms, which are same for the acute and chronic suppurative otitis media. One of its complications is the acute Mastoiditis however, study shows that acute mastoiditis follows the acute suppurative otitis media but over the long time, it has been seen that many patients with chronic suppurative otitis media along with the cholesteatoma have acute mastoiditis. The test of proportion proves that in our sample the proportion of the ASOM and the CSOM is equal and all have the acute mastoiditis. This is the evidence that acute mastoiditis follows both chronic and acute suppurative otitis media.

CONCLUSION

The study shows that acute mastoiditis follows the acute suppurative otitis media but over the long time, it has been seen that many patients of chronic suppurative otitis media along with the cholesteatoma usually suffered acute mastoiditis. In this study the test of proportion that shows in our sample the proportion of the ASOM and the CSOM is equal and all have the acute mastoiditis. Statistics analysis (p-value .394) shows that the frequency of acute mastoiditis following both acute and chronic suppurative otitis media is equal. Need of this study is to take the attention to the changing pattern of acute mastoiditis.

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