

Case Report

Bezold's abscess: a rare complication of chronic suppurative otitis media in a 13 year old female child

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ABSTRACT

Suppurative otitis media is one of the most common ear diseases in developing countries. The advent of antibiotics has decreased the otogenic complications of this disease. Bezold's abscess is one such rare complication of chronic suppurative otitis media. The study was done with the objective to report a case of a patient presenting with Bezold's abscess as a complication of chronic suppurative otitis media. The case report included a 13 year old female presented with a complaint of foul smelling and scanty discharge in left ear for the past 2 years. She developed fever & a painful swelling in left side of neck extending from the tip of mastoid to the angle of mandible which was of 1 week duration. Clinical examinations and investigations revealed as left sided chronic suppurative otitis media (active squamosal type) with severe conductive hearing loss with a rare extracranial complication of Bezold's abscess. Chronic suppurative otitis media can lead to a rare complication of Bezold's abscess.

Keywords: Suppurative otitis media, Bezold's abscess

INTRODUCTION

Chronic suppurative otitis media (CSOM) is one of the common ear diseases in developing countries. Widespread use of antibiotics in the management of otitis media & mastoiditis has significantly decreased the complications of CSOM however, the rate of complication associated with squamous-type CSOM is still significant in Southeast Asia.^{1,2} Bezold abscess which is named after Friedrich Bezold (German otologist, 1842–1908) is defined as a complication of suppurative otitis media or acute mastoiditis when the disease passes inferiorly through the medial aspect of the mastoid tip into the sheath of the sternomastoid muscle as shown in Figure 1.³ Bezold's abscess is an extratemporal complication accounting for 5.7 to 10.3% of all extracranial complications.⁴ Bezold's abscess is different from the other more common forms of abscesses, such as the subperiosteal and should be considered in the differential diagnosis of neck abscesses as well as

unexplained intracranial/extracranial or upper thoracic abscesses.

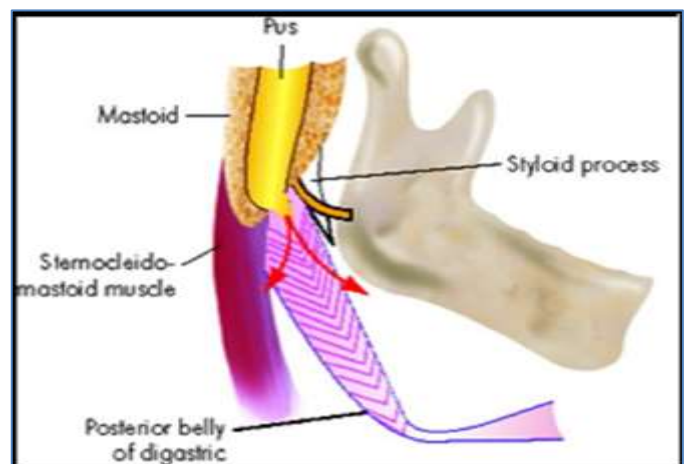


Figure 1: Bezold's abscess.

Pathology

Untreated or partially treated acute suppurative otitis media leads to the persistence of inflammatory process resulting in accumulation of pus in mastoid air cells. Insufficient drainage of such accumulated pus either through eustachian tube or a perforation in the tympanic membrane results in necrosis of the bony walls of the cells inferiorly producing Bezold's abscess. It occurs presumably in cases in which the tip cells are especially large and in which the bony plate forming the medial or inner wall of the tip is very thin and the outer cortex is thick.⁴ Pus escaping through such a perforation burrows downward in the neck beneath the sternocleidomastoid or may be confined between layers of the deep cervical fascia.⁴ Bezold's abscess can also develop without any erosion or penetration of the inner and outer cortex of the mastoid if phlebitis and periphlebitis propagate the infection to the same area.⁴ As the mastoid sinus pneumatizes late in childhood, a Bezold abscess is seen usually in the adult population where the cortex is thinner

CASE REPORT

A 13 year old female presented with a complaint of foul smelling and scanty discharge in left ear for the past 2 years. She developed fever & painful swelling in left side of neck extending from the tip of the mastoid to the angle of mandible which was of 1 week duration as shown in Figure 2.



Figure 2: Case report.

On examination, the patient was febrile & there was a diffuse swelling in the left side of the neck measuring about 3x3 cm extending from the tip of the mastoid to the angle of mandible. There was a rise in local temperature over the swelling & it was soft in consistency, fluctuant and skin over the swelling was erythematous and tensed. The neck movements were normal. Examination of left ear revealed an obliteration of post-auricular sulcus and subtotal perforation in tympanic membrane with scanty,

foul smelling, mucopurulent discharge. Left Mastoid tenderness was present & facial nerve was intact. Fistula test was negative. Tuning fork tests showed Rinne's negative for 256, 512 and 1024 Hz in left ear and positive in right ear. Weber's lateralized to left ear. ABC test same as examiner in both ears. No significant abnormalities were observed in the examination of right ear, nose and throat.

Blood investigation showed high total WBC count i.e. 33,600 cells/cumm. HRCT Temporal Bone showed an opacification of EAC and Middle ear with destruction of bony septa in the inferior part of the mastoid process and sigmoid plate erosion which was confirmed intra-operatively as in Figure 3.



Figure 3: Showing HRCT of temporal bone.

Management

Abscess was drained under local anaesthesia and pus was sent for culture and sensitivity which isolated coagulase negative staphylococci. Intravenous Inj. Augmentin 1.2 gm BD and Inj. Amikacin 250 mg BD were administered for 14 days. A canal wall down mastoidectomy with type IV tympanoplasty was done using autologous temporalis fascia graft under general anaesthesia after 8 days of admission.

Intraoperative findings

Cholesteatoma sac was noted in attic, lateral attic space and mastoid antrum. Malleus, incus, and stapes suprastructure were absent. Erosion of the sigmoid plate and mastoid tip was noted. Fistulous tract connecting mastoid tip to sternocleidomastoid muscle with pus extending down through this tract was noted and was excised as presented in Figure 4. Patient recovered well following surgery and was followed up for 3 months with no further complications.

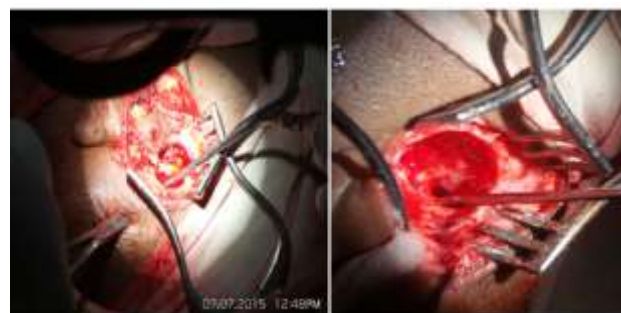


Figure 4: Intraoperative findings.

DISCUSSION

Cholesteatomas are benign masses but have potential to destroy local structures that affect various pneumatized spaces such as middle ear, mastoid or petrous bone.⁶ A patient with cholesteatoma has a higher risk of complications than with other types of otitis media because of its invasiveness.⁷

Bezold's abscess is a rare complication of chronic suppurative otitis media. Complications from otitis media have decreased significantly due to advent of newer antibiotics. However, some patients with otitis media develop serious complications due to delay in diagnosis, inadequate antibiotic therapy, increased bacterial resistance, negligence by the patients and concomitant presence of cholesteatoma.¹ The pus is prevented from reaching the surface by neck musculature but can track along the fascial planes of digastrics or sternomastoid muscle leading to various abscesses like Luc's abscess, Citelli's abscess, and Bezold abscess.⁸

Well pneumatized mastoids are believed to be more susceptible to these complications than sclerotic mastoids because of increased capacity for the accumulation of pus and decreased capability of resorption.⁹ Bezold's abscess can rapidly prove fatal if left unchecked as the carotid sheath, parapharyngeal space and mediastinum can all be involved.⁹ Due to the close proximity to the internal jugular vein and internal jugular vein, thrombosis is a recognized complication.

CONCLUSION

Bezold's abscess, even though a rare complication, must be kept in mind while assessing any child presenting with deep, tender, upper cervical masses for timely management which otherwise can prove to be fatal.

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