A Case of Bezold's Abscess with an Unusual Extension to the Upper Thorax

Üst Toraks da Alışılmadık Bezold Apse Olgusu

Bezold Apsesi / Bezold's Abscess

Reza Javad Rashid[1], Masood Naderpour[2], Afshin Habibzadeh[3], Javad Jalili[1], Maryam Mozayyan[1]
[1]Dep. Radiology and Radiotherapy, Imam Reza Hospital, [2]Dep. Otolaryngology, Imam Reza Hospital, [3]Cardiovascular Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

Özet

Bezold absesi derin servikal alanlarda otomastoiditis bir apse komplikasyonudur. Antibiyotikler, antibiyotik öncesi çağa göre otitis media ait komplikasyonların sıklığında genel bir düşüş yapmışlarır. Burada üst toraks sıradışı uzantısı ile Bezold adlı apsesi olan 23 yaşındaki erkek sunuldu.

Anahtar Kelimeler

Bezold Absesi; Kolesteatom; Işitsel Atrezi

Abstract

The Bezold's abscess is an abscess in deep cervical spaces that is considered as a complication of otomastoiditis. Antibiotics have produced an overall decline in the frequency of complications of otitis media relative to the pre-antibiotic era. Here we report a 23 year old male with Bezold's abscess with unusual extension to upper thorax.

Keywords

Bezold's Abscess; Cholesteatoma; Aural Atresia

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Corresponding Author: Javad Jalili, Department of Radiology and Radiotherapy, Tabriz University (Medical Sciences), Golbad Ave., Tabriz, Iran; Zip code: 5166615556; T.: +98 4113377649 F.: +98 4113345591 E-Mail: jaradiolog87@yahoo.com

Introduction

The Bezold's abscess was first described in 1881 by Dr Friedrich Bezold, a German otologist, by a study in cadavers in which purulent secretion was observed draining from the medial surface of the mastoid process[1].

Bezold's abscess is different from the other more common forms of abscesses, such as the subperiosteal [1] and should be considered in the differential diagnosis of neck abscesses as well as unexplained intracranial/extracranial or upper thoracic abscesses [2]. Bezold's abscess is caused by a suppurative process eroding the mastoid cortex along the digastric ridge and spreading between the digastric and sternocleidomastoid muscles [1,3]. Since the advent of antibiotics, Bezold's abscesses have become less and less common [1].

Congenital aural atresia is a term used to refer to a spectrum of ear deformities present at birth that involve some degrees of the development of the external auditory canal (EAC). Usually there is a deformed or missing pinna and no external auditory canal. The mastoid and the middle ear space may be underdeveloped and the ossicular chain is dysplastic [4]. This paper presents a case of Bezold's abscess associated with aural atresia, with the unusual extension to the upper thorax.

Case Report

A 23-year-old male patient, with a history of smoking and opiate abuse presented with headache, fever, malaise and pain in the right arm for 10 days before visiting in our emergency room. He was previously admitted to another center with these complaints, where he received broad spectrum IV antibiotic therapy and his status was relatively improved. No other significant history such as otalgia or ear discharge was obtained. In physical examination, the patient was febrile and had swelling and erythema in neck more prominent on right side with extension to upper anterior aspect of thorax and right arm. Bilateral aural atresia was also present.

High resolution computed tomography (HRCT) scan of the temporal bone revealed limited pneumatization of bilateral mastoid cells, otitis, mastoiditis and also cholesteatoma of right ear with bony destruction and invasion to adjacent soft tissues (Fig. 1A). External auditory canals were bilaterally atretic (Fig. 1B and 1C). Ossicles of right middle ear were not seen (Fig. 1D). Extensive abscess in posterior neck spaces (Fig. 1 E) with extension to chest wall on right side (Fig. 1F) were observed on neck CT scans. Brain CT showed pneumocephalus in right side of posterior fossa (Fig. 1G).

The patient was admitted and undergone tympanomastoidectomy. After the procedure, IV treatment with broad spectrum antibiotics was initiated. After one week the patient showed considerable improvement. Chest wall abscess does not respond to antibiotic therapy and treated with percutaneous drainage. The patient is discharged with oral antibiotics.

The patient was followed for 6 months. During follow-up period no complications was observed. Audiometry was performed for the patients before surgery and during follow-up that showed 50 dbl conductive hearing loss as a complication of the cholesteatoma which was not improved after surgery.

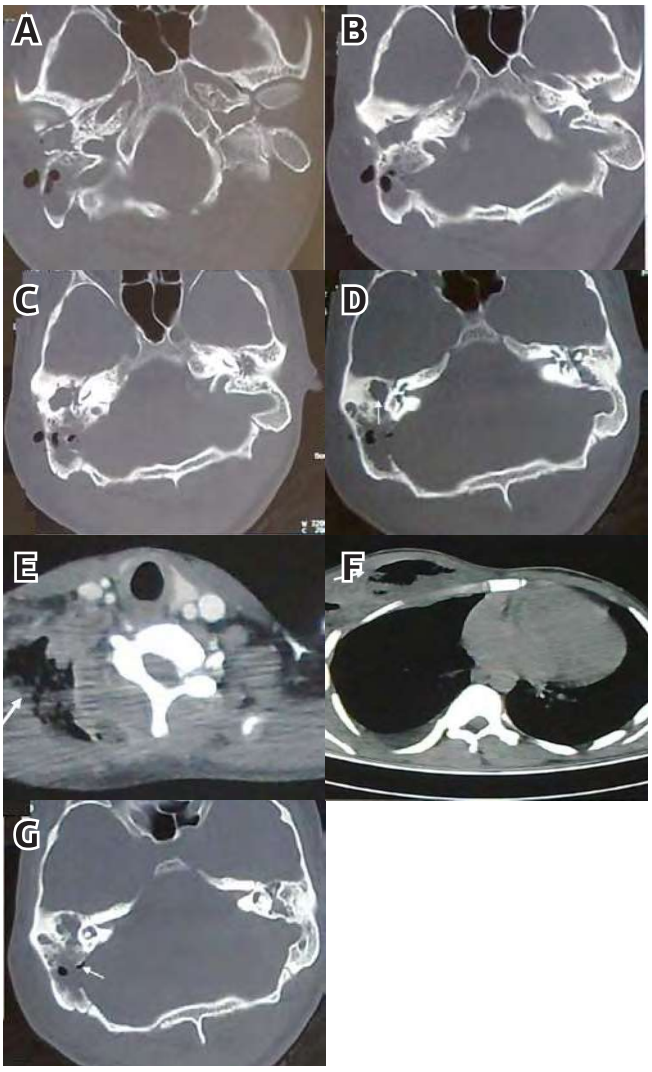


Fig 1. A 23-year-old male patient with Bezold's abscess and aural atresia with an unusual extension to the upper thorax.
A. High resolution computed tomography (HRCT) of the temporal bone revealed limited pneumatization of bilateral mastoid cells, otitis, mastoiditis and also cholesteatoma of right ear with bony destruction and invasion to adjacent soft tissues. B and C. HRCT scan revealed bilateral atresia of external auditory canals (arrows). D. In HRCT scan ossicles of right middle ear were not seen (arrow). E. Neck CT scan revealed extensive abscess in posterior neck spaces (arrow). F. Neck CT scan showed abscess extension to chest wall on right side (arrow). G. Pneumocephalus was observed in right side of posterior fossa in brain CT scan (arrow).

Discussion

Cholesteatomas are benign masses but have potential to destroy local structures that affects various pneumatized spaces such as middle ear, mastoid or petrous bone. A patient with cholesteatoma has a higher risk of complications than with other types of otitis media because of its invasiveness [5]. Bezold's abscess is reported previously as a complication of cholesteatoma [2,6].

A Bezold's abscess is a cervical abscess that develops in the presence of coalescent mastoiditis. Although Bezold's abscess is more commonly a complication of acute otitis media with mastoiditis, it is a known complication of chronic otitis media with cholesteatoma [6]. The pathogenesis of the Bezold's abscess has been attributed to the degree of pneumatization of the mastoid bone. The aeration of the mastoid bone, causing its walls to thin out can easily act as a pathway for a disease process to spread through it. In the absence of extensive pneumatization, mastoid bone walls are thick and difficult to erode [5,7]. The presence of cholesteatoma debris in the chronically infect-

ed mastoid may obstruct the infectious foci into external auditory canal and allows the foci to find a weak point in mastoid tip [2]. In our patient atresia of external auditory canal could be an additional reason.

The main imaging modality for diagnosis of Bezold's abscess is CT scan of temporal bone and neck, especially in clinically unnoticed abscesses [1,3]. The findings include the presence of fluid filled middle ear and mastoid and demineralization of the mastoid trabeculae [8]. CT scan of neck could show the collection together with obliteration of the fascia and fat plane, reticulation of the subcutaneous tissues and thickening of the skin overlying sternocleidomastoid muscle [3]. Any suspicion of intracranial extension or complications warrants an immediate CT scan. Castillo et al. [3] also suggested brain imaging to detect other intracranial complications of mastoiditis.

HRCT scan of the temporal bone in our patient showed fluid in mastoid with bony destruction and invasion to adjacent soft tissues. In the neck CT scans extensive abscess in posterior neck spaces with extension to chest wall on right side were observed. Brain CT also showed pneumocephalus in right side of posterior fossa.

The aural atresia was a significant finding that is not reported in cases with Bezold's abscess and cholesteatoma. Although aural atresia was previously reported in cases with congenital cholesteatoma or children with cholesteatoma [9], it is only reported in one adult patient (a 30-year-old man) with an inflammatory granulation tissue and chronic osteomyelitis in the posterior part of the mastoid in CT scan [10].

In our patient, aural atresia and cholesteatoma was two risk factors that we could consider as leading causes for developing of a Bezold's abscess. Of course a delay in taking adequate antibiotics and subsequently being prone to extensive infectious processes should not be overlooked.

Competing interests

The authors declare that they have no competing interests.

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