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## Malignant otitis external complicated by bezold abscess: one case report

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### Abstract

**Introduction:** *Bezold abscess is defined as a rare deep abscess, a complication of acute mastoiditis secondary to chronic otitis media. Factors favoring the spread of this cervical abscess are the virulence of the germ, delayed management of otitis media and associated immunosuppression. Bezold abscesses are treated medico-surgically.*

**Case report:** *57-year-old patient, type 2 diabetic on oral antidiabetics. Admitted for management of malignant otitis external complicated by otomastoiditis with bezold abscess. Cervical examination reveals a retroauricular collection extending to the cervical region. The patient underwent medical and surgical treatment consisting of antibiotic therapy with drainage of the cervical abscess. The course was marked by persistent infection with extension to the dorsal region associated with pulmonary effusion. The patient was readmitted to the operating room, having undergone drainage with a dorsal staged incision, combined with mastoidectomy and tympanoplasty using an open technique. Drainage of the pulmonary effusion was performed locally in the patient's bed.*

**Conclusion:** *Bezold's abscess is a rare complication of acute otitis media. It is a therapeutic emergency, with medical and surgical treatment. Appropriate and prompt management of chronic otitis media can prevent the onset of formidable complications.*

**Keywords:** Rare complication, Immunodepression, Traitement multimodal.

## INTRODUCTION

Bezold abscess is defined as a rare deep abscess, a complication of acute mastoiditis secondary to chronic otitis media. Factors favoring the spread of this cervical abscess are the virulence of the germ, delayed management of otitis media and associated immunosuppression. Bezold abscesses are treated medico-surgically.

## CASE REPORT

57-year-old patient, type 2 diabetic on oral antidiabetics. Admitted for management of malignant otitis externa complicated by otomastoiditis with bezold abscess. Clinical examination revealed a hemodynamically stable conscious patient with a febrile respiratory tract. Otolological examination revealed external malignant otitis of granulation tissue filling the external auditory canal, with abundant foul-smelling fetid otorrhea and cholesteatoma lamellae. Cervical examination reveals a retroauricular collection extending to the cervical region.

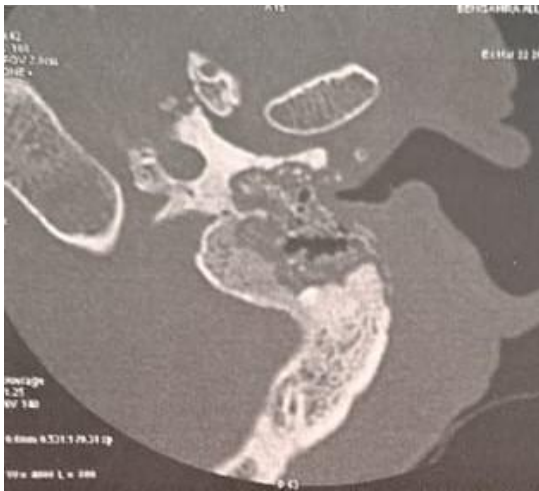


Figure 1: axial CT section showing lysis of the mastoid with signs of cholesteatomatous otitis

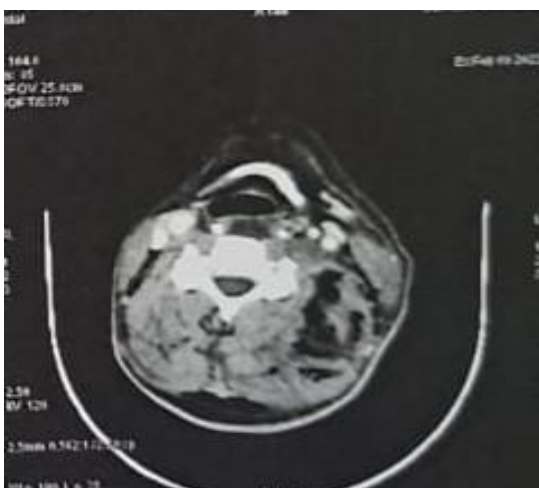


Figure 2: axial scan section showing a collection of deep cervical spaces.

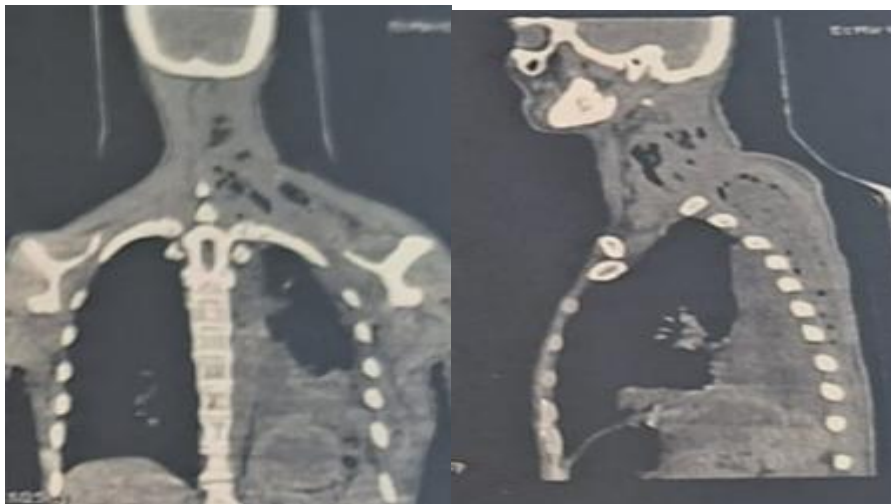
The patient underwent medical and surgical treatment consisting of antibiotic therapy with ceftriaxone +metronidazole +gentamicin, combined with drainage of the cervical abscess with retro-auricular incision. Bacteriological sampling showed pseudomonas aeruginosa

resistant to ceftriaxone, and the patient was put on fortum+amiklaine for 10 days, followed by ciprofloxacin.



*Figure 3: post-operative image showing the retro-auricular incision of the bezold abscess*

The course was marked by persistent infection with extension to the dorsal region associated with pulmonary effusion.



*Figure 4: axial and sagittal CT showing endo-thoracic and dorsal extensions of bezold's abscess.*

The patient was readmitted to the operating room, having undergone drainage with a dorsal staged incision, combined with mastoidectomy and tympanoplasty using an open technique. Drainage of the pulmonary effusion was performed locally in the patient's bed.



Figure 5: *post-operative picture of dorsal stepped incisions and thoracic drainage*



Figure 6: *intraoperative picture showing the facial nerve*

## DISCUSSION

Bezold abscess is a rare deep abscess of the neck and is a complication of acute mastoiditis, in which the infection erodes through the mastoid cortex, may progress into the infratemporal fossa and move deep into the deep cervical fascia. Spread of infection in this layer can lead to cellulitis with progressive abscess, but can also move into the carotid sheath, and thrombosis of the internal jugular vein can occur. Factors favoring the spread of this cervical abscess include the virulence of the germ, delayed management of otitis media, and associated conditions such as diabetes and HIV infection. Organisms commonly cultured from Bezold abscesses include Gram-positive aerobes: Streptococcus, Staphylococcus and Enterococcus species; Gram-negative aerobes: Klebsiella, Pseudomonas and Proteus species and anaerobes, in particular Peptostreptococcus and Fusobacteriu species.

Bezold's abscess is treated medico-surgically to prevent its spread and eradicate its cause. It is a therapeutic emergency. If a Bezold abscess is present or suspected, practitioners should use broad-spectrum intravenous antibiotics. Bacteriological sampling is mandatory to adapt antibiotic therapy. If a collection is identified on CT scan, surgical drainage is indicated via the trans-cervical route. A retro-auricular incision is made, and a simple and complete mastoidectomy is performed, along with tympanoplasty to treat the portal of entry. The aim is to remove as much of the osteitic bone and granulation tissue present in the mastoid bone as possible. Prevention consists in adequate control and treatment of all chronic otitis. Few cases of spread of Bezold abscess have been reported in the literature. Singh et al. reported a case of anterior chest wall abscess secondary to a Bezold abscess. Similarly, Saha et al found

multiple abscess cavities occupying both lung parenchyma complicating a Bezold abscess. The patient underwent antibiotic therapy for the pulmonary abscess, followed by radical mastoidectomy and thromboembolectomy of the lateral sinus.

Rabindra Pradhananga et al reported an unusual complication of bezold abscess consisting of a scapular abscess. A left radical mastoidectomy with type III tympanoplasty was performed and the Bezold abscess drained under general anaesthesia. A case of Bezold abscess complicated by a dorsal abscess has been reported in the literature (4). Emergency medical and surgical treatment was instituted, consisting of broad-spectrum antibiotic therapy combined with incision and drainage of the cervical and dorsolumbar abscesses. At the same time, the portal of entry was treated with a petro-mastoid cut to remove the cholesteatoma.

## **CONCLUSION**

Bezold's abscess is a rare complication of acute otitis media, and immunocompromised patients are at greater risk of infection. It is a therapeutic emergency, with medical and surgical treatment. Appropriate and prompt management of chronic otitis media can prevent the onset of formidable complications.

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