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Bezold's abscess: An extremely rare complication of suppurative mastoiditis: Case report and literature review

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ABSTRACT

INTRODUCTION: Bezold abscess is a suppurative complication of mastoiditis that the incidence has significantly decreased in the current era due to the introduction of antibiotics.

PRESENTATION OF CASE: We discuss the case of a 62-year-old male who developed Bezold abscess following a right mastoiditis. He presented with laterocervical swelling. His management included; incision and drainage of the abscesses; and mastoidectomy.

CONCLUSION: The incidence of Bezold abscess appears to be increasing, perhaps due to ignorance of the disease by many clinicians, and diagnosis is often delayed with potentially fatal consequences.

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1. Introduction

Bezold's abscess is a consequence of the drainage of pus through the medial wall of the mastoid process in the digastric sulcus and forming a suppurative collection [1].

If not treated properly and on time, the contents of Bezold's abscess can spread to the mediastinum, causing acute mediastinitis, with a mortality rate of 70% [2,3].

The discovery of antibiotics has changed the course of mastoiditis and significantly reduced its complications over the past 50 years. As a result, since the advent of antibiotics, Bezold abscesses have become less and less frequent [3].

We describe the case of a Bezold abscess in a 62-year-old male. This work is reported by following the surgical case report (SCARE) guidelines [4].

2. Presentation of the case

A 62-year-old male presented to the emergency department of ENT XX with the main complaints of a right laterocervical swelling for 15 days.

The medical history found a recurrent right sided ear pain, no pharmacological allergies, no psychosocial problems including drug, smoking and no family genetic disease.

On the clinical review he was afebrile, hemodynamic and respiratory stable, the nervous system examination was unremarkable.

The External examination revealed inflammatory and indurated painful right laterocervical swelling (Fig. 1). The Examination of the oropharynx revealed no sign of infection and the patient was toothless.

On the otologic examination, there was a slight mastoid swelling and the otoscopic revealed a reshaped and thickened right tympanic membrane without signs of inflammation.

The Laboratory examinations revealed the following results: WBC: 21,000/mm³, Absolute neutrophils: 15,000/mm³, C-reactive protein: 89 mg/l; fasting blood glucose: 3.60 g/L. Bacteriological examination of the pus was polymicrobial.

A computed tomography scan with intravenous contrast of the right ear and neck showed right sided chronic mastoiditis, erosion of the inferior mastoid cells, and cervical cellulitis collected in the right sternocleidomastoid muscle measuring 33 × 15 mm extended to 40 mm (Fig. 2).

The patient was submitted to surgical drainage with local anesthesia, a Paul Andre incision was made and we evacuated the abscess in the right sternocleidomastoid muscle, performed by a resident with 4 years of specialized training (Fig. 3).

The patient was hospitalized in our department.

He received intravenous ceftriaxone and moxifloxacin with a daily dressing change. The evolution was marked by the non-drying of the pus and because of this result, the decision was to perform a wide mastoidectomy for drainage performed by an ENT professor.

The patient adhered well to the treatment received with a good tolerance to the surgery and post-operative care including antibiotics and local care.

Postoperatively, the patient presented no complications, including no facial paralysis or dizziness.

Recovery was gradual and he was discharged on hospital day 15, the patient was satisfied with the results. A follow-up CT scan

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Fig. 1. lateral view of the neck shows laterocervical swelling extending into the mastoid.

carried out 8 days after discharge excluded the presence of laterocervical abscess or other complications.

3. Discussion

Bezold's abscess was first described by Friedrich Bezold in 1881 as a deep neck abscess resulting from an intertemporal complication of a coalescent mastoiditis [1].

Mastoiditis can occur at any age and can be particularly severe in the elderly [5].

The incidence of surgical mastoiditis due to acute otitis media is estimated at 0.004% in the United States [6].

In Britain, only one case of Bezold abscess has been reported in the literature during the last decade of the 20th century [7].

The presence of a cholesteatoma in a chronically infected mastoid can block the outflow of secretions through the external meatus and allow the infectious process to find a point of weakness at the tip of the mastoid [8].

The clinical presentation is varied, patients may not have sepsis signs and doctors should look for this complication in patients with otitis. Computed tomography and MRI imaging can locate the collection [9].

Bezold abscess has been reported to be associated with lateral sinus thrombosis, which can be caused by compression or thrombosis of the internal jugular veins. The most common clinical signs and symptoms were fever (74%), otalgia (52%), edema of the neck (48%), otorrhea (41%), torticollis (41%), neck pain (41%), peripheral facial nerve paralysis (15%), hearing loss (11%) [10–12].

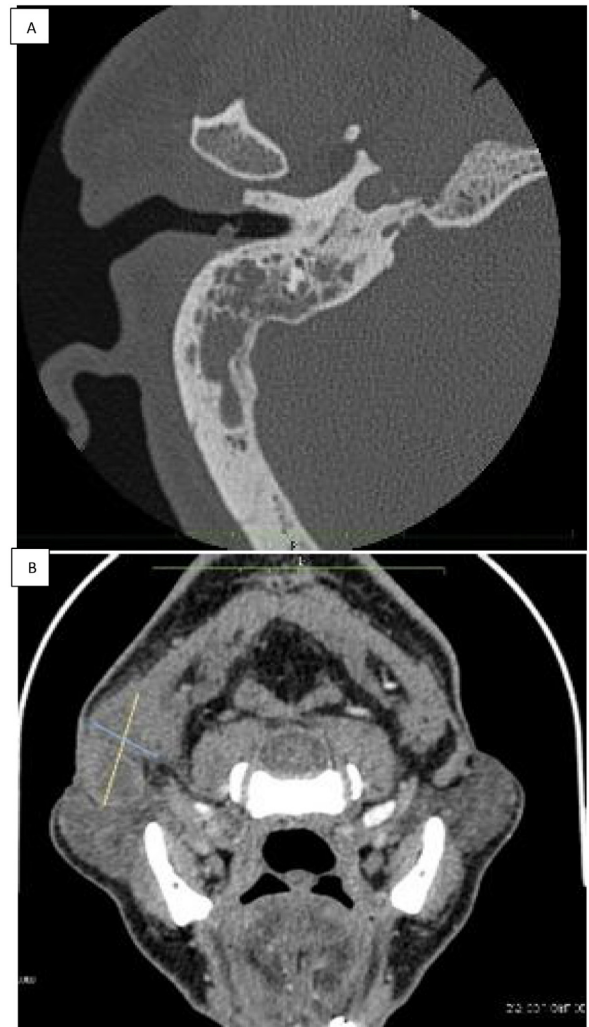


Fig. 2. A; CT scan (axial view) of temporal bone demonstrating contents of soft issue parts in the middle ear and mastoid process on the right. B; CT scan of the neck showing abscess formation in the right sternocleidomastoid muscle.



Fig. 3. surgical drainage showing pus in the right cervical region.

Lutz et al. published a study of 223 mastoiditis cases in which 16 patients presented complications, including a cerebellar abscess, peri-sinus empyema, subdural and extradural abscess, cavernous sinus thrombosis, lateral sinus thrombosis, meningitis bacterial, labyrinthitis, periostitis and peripheral facial nerve paralysis [13].

The CT scan in case of Bezold's abscess shows a unilateral opacification of the middle ear and the mastoid cavities, often associated with bone erosion, in particular of the tip of the mastoid. The collection of pus can be detected along the SCM muscle [14].

Computed tomography has proven to be invaluable in the diagnosis of Bezold abscess and in some cases has been able to detect clinically invisible early abscesses [8].

All experts recommend intravenous administration of antibiotics and possibly a trans-tympanic aerator within the first 48 h after hospitalization and repeat the analyses. If there is clinical improvement and normalization of the biological markers of the infection, the antibiotics are continued for 5–10 days. If there is no improvement, a mastoidectomy should be performed. In the case of complications, surgical treatment should be carried out urgently [15].

Evidence of mastoid origin indicates to the surgeon that a mastoidectomy is necessary in addition to cervical drainage of the abscess [1].

In case of sinus thrombosis, anticoagulant therapy is not associated with better results and justifies additional studies [16–18].

4. Conclusion

Bezold's abscess is an infectious complication of mastoiditis rarely seen in the current era of antimicrobials. It can lead to seriously sequelae if not diagnosed and treated early but so far there have only been anecdotal reports on Bezold abscess and its management. The few isolated reports indicate that when the condition is diagnosed promptly and treated with drainage, the prognosis is good. The key is prompt drainage.

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Ethical approval

I certify that this kind of manuscript does not require ethical approval by the Ethical Committee of our institution.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Hicham Lyoubi: conception and design of the study.
Omar Berrada: acquisition of data.
Adil Lekhbal: drafting the article.
Reda Allah Abada: revising the article.
Mohammed Mahtar: final approval of the version to be submitted.

Registration of research studies

This is a case report that does not require a research registry.

Guarantor

Hicham Lyoubi.

Provenance and peer review

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Declaration of Competing Interest

The authors declare that they have no competing interests.

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