CASE REPORT

Atypical presentation of Bezold's and Citelli's abscesses, with recollection following an incomplete postoperative course of antibiotics

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SUMMARY

Bezold's and Citelli's abscesses are rare complications of otitis media. We present a case of a 44-year-old Eastern European man, with a history of recurrent otitis media, who was admitted to hospital with mastoiditis and initially treated with antibiotics. Despite clinical improvement, a CT scan showed mastoiditis with Bezold's and Citelli's abscesses. The patient underwent a myringotomy and grommet insertion, in addition to a cortical mastoidectomy and curettage of the neck abscesses. After a good recovery, he was discharged home. However, likely due to the language barrier, he did not complete a course of antibiotics as prescribed, and the abscess re-collected, necessitating a re-admission and re-operation. This report illustrates the importance of considering rare features of a common disease in the differential, and of communication in ensuring compliance.

BACKGROUND

Bezold's and Citelli's abscesses are rare complications of acute suppurative otitis media and mastoiditis, in which infection erodes through the mastoid bone and extends into the neck. A Bezold's abscess extends into the sheath of the sternocleidomastoid muscle, while a Citelli's abscess extends into the digastric fossa. Their rarity makes identification on clinical signs difficult.¹

Acute mastoiditis is often treated without surgery, if there is a good initial response to antibiotics. However, treatment of a neck abscess usually requires, in addition to appropriate antibiotic therapy, surgical drainage of the abscess,^{2 3} with earlier surgery associated with better outcome.¹

In this presented case, our patient, initially diagnosed with mastoiditis which responded to medical treatment, was found to have Bezold's and Citelli's abscesses on a CT scan, necessitating surgical treatment. The appearance of both these rare complications illustrates the need to look for uncommon but serious complications of otitis media even when the patient's condition is improving with medical treatment. This case also highlights the significance of communication, as had the patient understood the discharge plan, re-admission and further surgery could have been avoided.

CASE PRESENTATION

A 44-year-old man of Eastern European ascent presented to the Assessment Unit with fever and mild

right otalgia of a few hours' duration. There was no neck pain, nor restriction of movement. He had no difficulty breathing or swallowing, and had no change in his voice. The patient had suffered recurrent otitis media over the last year, but had no previous ear discharge. He was otherwise well, and not immunocompromised; he was on no regular medications, and had no allergies. On examination, there was tenderness and a small swelling over the right mastoid process, while the tympanic membrane appeared retracted. The chest was clear and the oropharynx appeared to be normal. The patient was afebrile and haemodynamically stable.

INVESTIGATIONS

Serum white cell count (reference range: 4.0×10^9 – 11.0×10^9 /L):

► On initial admission: 12.2×10^9 /L

► On re-admission: 22.1×10^9 /L

First CT scan of internal auditory meati:

Right mastoiditis with bony erosion anterior to the sigmoid venous sinus. Overlying superficial abscess, tracking inferiorly deep to sternocleidomastoid muscle, and anteriorly to the margin of the styloid process and carotid sheath.

Second CT scan, performed on re-admission (See figures 1–3):

Confirmed re-collection of neck abscesses.

Figure 1 Re-admission CT neck, axial view, showing Citelli's abscess (A) tracking parallel to the right digastric muscle.

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Figure 2 Re-admission CT neck, axial view, showing deep tracking of the Citelli's abscess (A). For reference, the parotid gland (B), mastoid tip (C) and the digastric muscle (D) are labelled on the normal side.

TREATMENT

The patient was initially treated with intravenous antibiotics (cefotaxime 2 g three times daily) for suspected mastoiditis. He responded well clinically, and was asymptomatic 2 days later, at which time he was switched to oral antibiotics. However, CT scanning revealed an abscess, necessitating further treatment.

The patient was taken to theatre for a myringotomy and grommet insertion, followed by cortical mastoidectomy. The Bezold's and Citelli's abscesses were identified, drained, and curetted. Pus culture showed no growth.

Postoperatively, the patient recovered well. After a further 4 days of antibiotics intravenously and ear drops, the patient was discharged home out-of-hours with a prescription for an oral equivalent. The take-home medications were dispensed

Figure 3 Re-admission CT neck, coronal view, showing the abscess extending superficial (A) and deep (B) to the right mastoid tip. For comparison on the normal side, the stylopharyngeus (C), posterior belly of the digastric (D) and the sternocleidomastoid (E) muscles are labelled.

from ward stock by the nursing staff. The patient's family was unavailable for discussion.

OUTCOME AND FOLLOW-UP

The patient did not fully understand the postdischarge plan, and did not take the prescribed course of oral antibiotics. He re-presented to hospital 6 days later with fever and worsened inflammatory markers. A repeat CT confirmed re-collection (see figures 1–3). He was admitted, taken back to theatre for repeat drainage of the abscesses, and treated with further intravenous antibiotics.

The patient clinically improved and was discharged 6 days afterwards with a course of oral antibiotics. There were no further re-admissions.

DISCUSSION

Bezold's⁴ and Citelli's abscesses are rare in an era of readily available antibiotics. Delayed treatment of the complications of otitis media can be associated with greater morbidity.⁵ Early recognition and treatment, therefore, is important. Classical presentation of a neck space abscess includes a painful neck swelling and reduced neck motion. However, as in this reported case, these features may not be present or may be missed. The patient presented with symptoms and signs of acute mastoiditis. However, there were no specific symptoms suggestive of neck pathology, and a neck abscess was not specifically considered as part of the differential diagnosis until the CT result was available 2 days after admission.

As the patient in the reported case was not a native English speaker, communication between staff and patient may have been more difficult than usual; perhaps leading to his non-understanding of, and therefore non-compliance with, the treatment plan. This illustrates the importance of careful communication to the physical outcome of treatment. Previous lit-

Patient's perspective

I found the temperature before coming into hospital as quite difficult to cope with. When I was in hospital I did not feel unwell apart from having tubes in my wrists. My ear was tender but I could deal with the pain and I felt mostly fine. It felt better after the first procedure. I was frustrated with having to come back in and to have another operation but I am now glad that it has all worked out for the best.

Learning points

- ▶ Neck abscesses are a rare but significant complication of otitis media.
- ▶ An abscess may not be immediately apparent on examination; early suspicion and investigation are important.
- ▶ Even after surgical drainage and symptomatic improvement, failure to complete a course of antibiotics may lead to abscess recollection.
- ▶ Patient understanding is key to compliance. Good communication can make the difference between resolution and readmission.

erature shows that good communication between clinicians and patients is associated with a low rate of medication error,⁶ and that patients with a language-discordant physician are more likely to omit their medication.⁷ Simple strategies such as an information leaflet or a telephone call can increase compliance with an antibiotic regimen.⁸

Delayed diagnosis and surgical intervention, as well as the lack of postsurgical antibiotic cover, likely contributed to the patient's deterioration at home and requirement for re-admission and re-operation. Appropriate antibiotic therapy is an important part of the management of neck abscesses,^{2,9} and it is the responsibility of clinicians to make sure that the patient understands the treatment plan before discharge. Good communication could make the difference between resolution and readmission, and particular care should be taken when there is a language barrier.

Contributors SQ is the lead author. JG is responsible for data retrieval, figure illustration and editing. AF edited the earlier draft of the manuscript. CM involved in editing the earlier draft of the manuscript and supervised the study.

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