Bezold and Luc abscesses- rare complications of acute otitis media

A case report

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Introduction

- Bezold and Luc abscesses are rare complications of acute coalescent otitis media, occurring in an estimated 2 in 1000 or 2 in 100,000 cases. The introduction of antibiotics in the management of otitis media has resulted in a significant reduction in the number of reported cases.
- Bezold abscess occurs when the disease passes inferiorly through the medial aspect of the mastoid tip into the sheath of the sternocleidomastoid muscle.
- Luc abscess is an extracranial complication whereby infection spreads from the middle ear resulting in a subperiosteal collection beneath the temporal bone.
- Early identification of these abscesses is vital in order to prevent the need for mastoidectomy.

Figures 1&2: Axial CT of temporal bones

Case Report

A 45 year old male presented to clinic with a four week history of left sided otalgia and otorrhea and one weeks history of neck pain and vertigo. He had been treated for otitis media with Otomix spray followed by a course of doxycycline antibiotics by the general practitioner with no resolution in his symptoms. He had no past medical history and was on no regular medication.

Clinical examination identified the presence of a left sided non-fluctuant post aural, facial and neck swelling. The swelling was not erythematous. There was significant mastoid tenderness on palpation. There were reduced neck movements and level 1 neck swelling. Examination was otherwise normal.

Microscopic examination identified the presence of acute otitis media with canal odema and granulation tissue on the inferior aspect. A swab was taken and sent for microscopy, culture and sensitivity.

The patient was admitted to hospital and started on IV antibiotics whilst awaiting computed tomography (CT) imaging of the neck with contrast to identify the presence of mastoiditis or abscess formation. CT demonstrated complete opacification of the left mastoid air cells in keeping with left sided complex mastoiditis complicated by osteomyelitis of the mastoid and associated intramuscular collections at the surrounding musculature measuring approximately 3.5 cm, confirming the presence of Bezold abscess and Luc abscesses.

The patient underwent emergency left cortical mastoidectomy & drainage of both abscesses along with grommet insertion. He had a follow up left radical mastoidectomy with tympanoplasty. Cultures returned having grown Group A streptococcus with the patient being discharged on benzylpenicillin and Clindamycin on day 3 post operatively.

Discussion

Acute mastoiditis is a complication of acute otitis media which can lead to the formation of a variety of abscesses.

Bezold abscess can occur in any age group, but occurs most commonly in children and adults due to pneumatization of the mastoid bone makes erosion and abscess formation easier. The common causative organisms of Bezold abscess are *Streptococcus pyogenes* and *streptococcus pneumoniae*.

Described by Henri Luc in 1913, it was proposed that Luc subperiosteal abscess accompanying mastoiditis presented with abundant and persistent otorrhea, retro-auricular swelling, mastoid region tenderness, high fever, and deep spontaneous pain preventing sleep. Luc abscess can occur in the absence of mastoiditis, therefore it is very important to conduct CT imaging for correct diagnosis and management.

Conclusion

Bezold and Luc abscesses are rare complications of acute otitis media. Lack of knowledge of these can lead to delayed investigation and treatment. We should have a low threshold for scanning patients with acute mastoiditis to allow early identification of complications. As demonstrated by this case, the delayed presentation of 4 weeks led to the need for surgical intervention. Prompt and aggressive management with intravenous antibiotics and surgery minimizes long term morbidity & mortality

References

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