



LUC'S ABSCESS: A Rare Diagnosis in an Infant

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Abstract

One of the rare but important complications of acute otitis media (AOM) is Luc's abscess, whereby infection spreads from the middle ear, resulting in a subperiosteal collection beneath the temporalis muscle. Unlike other subperiosteal abscesses relating to otitis media, infection may not be associated with mastoid bone involvement. Whereas here in this case, we present a case of a 4 months old infant presenting with a post-auricular swelling, how we diagnosed it as Luc's abscess with mastoid involvement and the further management of the same. This case report directs the fellow clinicians that this is a rare, but curable complication of a very common disease.

Keywords: Pediatrics; Post-auricular swelling; Otitis media; Luc's abscess; Mastoiditis

Introduction

Acute otitis media (AOM) is a common self-limiting childhood illness usually managed medically. The condition is associated with a number of complications due to proximity of the middle ear to the intracranial and intratemporal compartments. One less frequently encountered extracranial complication is the subperiosteal temporal abscess known as Luc's abscess. Unlike other extracranial abscesses of otitic origin that develop following intraosseous suppuration, osteitis, cortical destruction and pus collection under the periosteum, Luc's abscess develops after spread of infection directly along a subperiosteal route from the middle ear along the external meatus to reach the temporal region [1]. This condition presents typically in patients without mastoid involvement, therefore, it is defined as a benign complication of otitis media. However, its rare occurrence plus its much rarer involvement of mastoid bone, poses it as a clinical challenge for early diagnosis and treatment.

Case Report

Parents of a four month old female baby, brought the infant to the out-patient department with complaints of swelling behind the Right ear since 3 days- insidious in onset, gradually progressed in size to current size, associated with pain over the swelling (Figure 1). No history of any ear discharge, or prior upper respiratory

tract infection. On examination, right post auricular swelling measuring 2 x 1 x 1cm with local rise of temperature and tenderness noted. Right external auditory canal was normal, whereas Right tympanic membrane was congested, with right mastoid tenderness.



Figure 1: Right post-auricular swelling.

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SUNTEXT REVIEWS

Left ear findings were normal. Child was febrile, and blood investigations revealed leukocytosis with neutrophilia. Clinically child was diagnosed with acute otitis media with mastoiditis. Further investigations of X ray – Mastoid was done which showed bilateral sclerotic mastoid. Following this, ultrasound of the involved region was done, which revealed thin collection in Right post-auricular region ~ 2.7cm extending to underlying bone; associated with multiple enlarged lymph nodes in right level two, and intra-parotid lymph nodes. For confirmation of the bony extension, CT- Temporal region was done which showed bilateral otomastoiditis with Right post-auricular collection (Figures 2,3).



Figure 2: CT- Temporal bone showing mastoiditis.

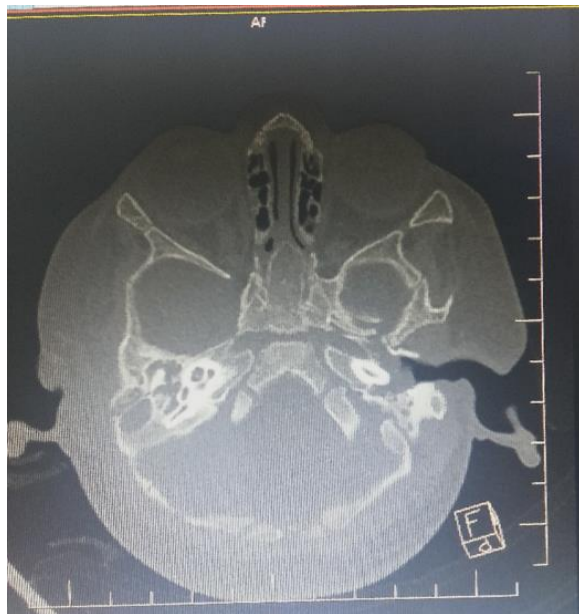


Figure 3: CT- Temporal Bone – with Otitis media.

Child underwent Right mastoid incision and drainage with Right Myringotomy under general anaesthesia. Pus drained was sent for culture-sensitivity, which revealed no growth after 48 hours. Post-operatively, the child made an uneventful recovery, and improved completely on broad spectrum intravenous antibiotics. At the out-patient follow-up after 1 month, the infant had complete resolution of the infection, and no further complications.

Discussion

In the early 20th century, Henry Luc, a French clinician described a subperiosteal abscess located deep to the temporalis muscle as a complication of acute otitis media in a nine year-old girl. According to Luc, the disease differs from other subperiosteal abscesses in that it develops without the mastoid bone involvement and that the infection spreads through the notch of Rivinus and branches of the deep auricular arteries located between the roof of the middle ear and the external ear canal, and the subperiosteal area [2]. Through publication, Luc hoped that in a pre-antibiotic era he could spare patients the unnecessary and dangerous destructive bone operations of the time. In 2013 Garner and McKinnon described a case of a five-month-old male infant presenting with AOM complicated by Luc's abscess and mastoiditis managed surgically and in 2014, Scrafton et al. discussed a case of 4 year old boy with acute otitis media with mastoiditis, which was treated surgically as well [3,4]. These related studies are in concurrence with our case report indicating that there could be mastoid involvement in cases of subperiosteal abscesses, which has to be diagnosed early for ideal surgical management. Both aerobic and anaerobic bacteria have been found as the causative agents in the abscess cultures. Therefore, broad spectrum antibiotics should be used for the empirical treatment until the final aspirate culture and microbiological advice reports return [5].

Conclusion

In conclusion, although Luc's abscess is one of the otic origin abscesses following a benign course, one should always remember to rule out the bony extension, mastoid- in specific, which would necessitate a surgical approach of management. Imaging techniques are a helping aid to diagnose the same and serve as a vital factor in the critical decision of the need for surgery.

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