

## CASE REPORT

# Zygomatic Abscess – A Rare Sequela of Otitis Media

Athierah Muhammad<sup>1,3</sup>, Nurfarissa Hussein<sup>1,2</sup>, Norhaslinda Mohari<sup>1</sup>, Norazwani Azwal<sup>3</sup>

<sup>1</sup> Department of Otorhinolaryngology Hospital Sultan Idris Shah Serdang, Jalan Puchong

<sup>2</sup> Department of Otorhinolaryngology Hospital Sultan Azlan Shah UPM

<sup>3</sup> Department of Otorhinolaryngology, Universiti Islam Antarabangsa, Kuantan, Malaysia

### ABSTRACT

A zygomatic abscess is a rare complication of acute otitis media. However, over the past two decades, such cases have increased, which might be linked to the rise of antibiotic abuse and antibiotic resistance. Diagnosing and treating a zygomatic abscess is essential as a delay in proper treatment can cause potential harm to the patient. The ideal treatment for these cases is modified radical mastoidectomy with abscess drainage.

*Malaysian Journal of Medicine and Health Sciences* (2023) 19(SUPP19):34-36. doi:10.47836/mjmh.19.s19.10

**Keywords:** Zygomatic abscess, otitis media, subperiosteal abscess

### Corresponding Author:

Athierah Muhammad, MS (ORL-HNS)  
Email: athierahmuhammad@yahoo.com  
Tel: +6013-2047883

### INTRODUCTION

A zygomatic abscess, or Luc's Abscess, is a rare encounter as an extracranial complication of acute otitis media (AOM). In 1913, Henri Luc described this infection's route as a temporal-zygomatic-subperiosteal abscess, without any mastoiditis.[1] This is because most of the other subperiosteal abscesses of otitic origin such as posterior sub-periosteal (postauricular), inferior subperiosteal with sternocleidomastoid involvement (Bezold's abscess), and digastric (Citelli's abscess) typically develop after infection spreads to the subperiosteal region from the cortical bone loss, which is frequently a complication of acute mastoiditis.

Even though the occasion of such complications is rare, but late recognition can lead to a potential risk of morbidity, as this route of infections can also lead to possible intracranial spread.

The incidence of such complications had tremendously reduced since antibiotics have been introduced, however, with the current trend of emerging antibiotic resistance, the complications of AOM are expected to increase in the future. Here, we are reporting a rare case of extensive zygomatic abscess in a patient, along with the presentation, radiological images, and management.

### CASE REPORT

A 62-year-old male with no known co-morbidities presented with a painful left zygomatic swelling, progressively increasing in size within 1 month. It was

associated with left ear pain, otorrhea, and reduced hearing. There was no episode of tinnitus, vertigo, facial weakness, or any other systemic symptoms. Preceding the event, there was no history of recurrent ear infections, fever, facial trauma, or insect bite.

Physical examination revealed a medium-built gentleman, with large left zygomatic swelling, which causes facial disfigurement without any facial palsy. (Figure 1). The left external auditory canal was inflamed with a scanty amount of pus discharge. Audiometry performed showed left conductive hearing loss with a tympanometry type B. Other systemic examination was unremarkable.

His blood parameters are suggestive of infections, with a leukocyte count of 22000/mm<sup>3</sup> and a C-Reactive protein of 14. High-resolution computed tomography (HRCT) revealed a large multiloculated rim-enhancing collection extending from the left superficial temporal to the left preauricular and buccal space, measuring 9cm x 12cm. There was also evidence of bony erosion and thinning over the left zygoma. Radiologically, all ossicles, scutum, tegmen tympani, and inner ear structures were intact bilaterally (Figure 2).

He was started on Intravenous Ceftriaxone and underwent surgical treatment of the left cortical mastoidectomy through a postauricular approach which drained 70mls of frank pus. Intraoperative pus culture and sensitivity, Acid Fast Bacilli (AFB) direct smear, and mycobacterium tuberculosis culture & sensitivity were all reported as negative.

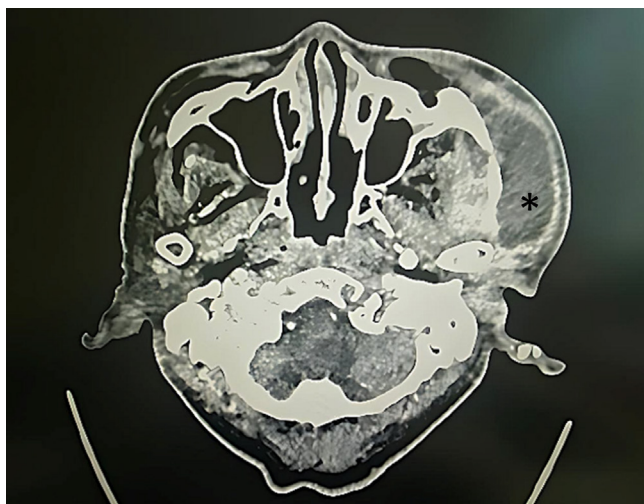
Postoperatively, the patient requires a 3 weeks hospital stay for completion of antibiotics and daily dressing. He



**Figure 1: Clinical Photography showing obvious swelling with facial disfigurement at the Left Zygomatic Area**



**Figure 3: Clinical photography showing post-operative recovery**



**Figure 2: HRCT Temporal showing a rim-enhancing lesion (Asterisk) lateral to the left zygomatic process with bony erosion and thinning of the left zygoma**

shows complete recovery with no residual swelling seen prior to discharge (Figure 3). He was then discharged with a scheduled follow-up of 1 month.

## DISCUSSION

Extratemporal and extracranial consequences of otitis media are referred to as subperiosteal abscesses based on where they occur. Bezold's abscess and Citelli's abscess are the names for the infections that spread deeply to the sternocleidomastoid muscle and the digastric triangle, respectively. The infection in Luc's abscess is situated underneath the temporal muscle (1). Due to the disease's rarity and limited literature available on Luc's abscess, it is essential for practitioners to be aware of such cases as the complications could potentially lead to high morbidity and mortality (2).

According to a systemic review done by Fernandez et al, the presentation of Luc's abscess includes otalgia (95.2%), swelling of the zygomatic area (90.5%), fever (71.4%), trismus (33.3%) and swelling of the external auditory canal (28.6%). The swelling can extend towards the temporal area (38.1%) and towards the face, particularly on the cheek and periorbital area (33.3%) (3). As in the case we reported, the patient presented with all the symptoms except for swelling of the external auditory canal.

The incidence of complications secondary to otitis media has tremendously reduced since the introduction of antibiotics. However, ever since antibiotic therapy has been overused and the incidence of antibiotic resistance has increased, admission due to otitis media has been on the rise over the last 2 decades (4).

The preferred imaging studies are via Computed Tomography (CT) scan. It is reliable in giving a conclusive diagnosis, as it is able to check the mastoid, middle ear, and inner ear structures and able to rule out any intracranial or orbital complications that may co-exist.

The method of treatment will depend on how the patient presents; for example, if one of the primary symptoms is restricted jaw movement or trismus, an airway compromise must be anticipated. This is because to the possibility that trismus could make intubation challenging in the case of a respiratory collapse. However, according to available literature, the primary forms of treatment are the start of intravenous antibiotics and modified radical mastoidectomy with drainage of the zygomatic abscess. Although Luc's abscess is a rare condition associated with otitis media, it is crucial for clinicians to identify complications as soon as possible.

## CONCLUSION

Even though the occasion of such complications is rare, late recognition can lead to a potential risk of morbidity. Therefore, it is important for the clinician and surgeon to identify Luc's abscess early, as the prognosis is often favorable with proper management.

## REFERENCES

1. Mengi E, Tümkaya F, Sağtaş E, Ardıç FN. An Unusual Complication of Otitis Media: Luc's Abscess. *J Int Adv Otol.* 2018;14(3):497-500. doi:10.5152/iao.2018.4785
2. Sathe N. Zygomatic abscess as a complication of otitis media. *Natl J Maxillofac Surg.* 2011;2(2):181-183. doi:10.4103/0975-5950.94478
3. Kaya H, Vural A, et al. Zygomatic Abscess with Temporomandibular Joint Effusion Complicating Acute Otitis Media . *Erciyes Med J* 2016; 38(3): 119-21. doi: 10.5152/emj.2016.150046
4. Fernandez IJ, Crocetta FM, Pelligra I, Burgio L, Demattè M. Clinical features and management of Luc's abscess: Case report and systematic review of the literature. *Auris Nasus Larynx.* 2020;47(2):173-180. doi:10.1016/j.anl.2019.11.003
5. Hong CX, Razuan NA, Alias A, Hassan FH, Nasser Z. Zygomatic root abscess: A rare entity not to be forgotten!. *Auris Nasus Larynx.* 2021;48(4):788-792. doi:10.1016/j.anl.2020.05.007