Bezold's Abscess as an Unusual Complication of Chronic Suppurative Otitis Media in a Young Adult with Cerebral Palsy: A Case Report

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ABSTRACT

Bezold abscess is a rare deep neck abscess whose incidence has markedly declined with the widespread use of antibiotics; however, it remains a serious complication of chronic suppurative otitis media in developing countries. We report a 28-year-old female with cerebral palsy who presented with fever and progressively enlarging left-sided neck swelling. Clinical examination revealed a warm, tender, fluctuant mass extending from the mastoid to the supraclavicular region, with a history of left ear otorrhea for six months. Otologic evaluation showed an attic perforation with cholesteatoma, and laboratory findings demonstrated marked leukocytosis (27,606/mm³). Contrast-enhanced computed tomography revealed otomastoiditis with extension into the cervical region. The patient underwent incision and drainage of the abscess, with pus culture growing Enterococcus species, followed by radical mastoidectomy. The tympanic membrane graft healed successfully. This case underscores the importance of early recognition and prompt management of otitis media, particularly in patients with communication disabilities, to prevent potentially life-threatening complications.

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INTRODUCTION

Bezold's abscess is a rare deep neck infection that has become less common with the advent of antibiotics.[1] However, it remains a complication of Chronic Suppurative Otitis Media (CSOM), particularly in developing countries. The incidence of CSOM is about 3.9%, among them about 5% of CSOM cases lead to intracranial or extracranial complications, often worsened by socioeconomic barriers.[2–5] Bezold's abscess typically presents with neck pain, otalgia, hearing loss, and otorrhea.[1] In patients with cerebral palsy, these symptoms may be difficult to recognize. Streptococcus species are commonly involved.[6] Early surgical drainage and antibiotics are essential, but standardized guidelines remain lacking.

CASE REPORT

A 28-year-old female with cerebral palsy presented to the emergency department with a two-day history of swelling on the left side of the neck and fever. The swelling extended from the tip of the mastoid process, passing over the sternocleidomastoid muscle, to the left supraclavicular region. The affected area appeared erythematous, soft, warm, fluctuant, and tender to palpation. Her family reported a history of left ear discharge six months prior to presentation, for which no medical treatment was sought. According to her mother, the patient had no other medical history apart from cerebral palsy.

Otologic examination revealed a single perforation in the attic of the tympanic membrane, accompanied by cholesteatoma and granulation tissue in the external auditory canal. Laboratory results showed leukocytosis (27.206/mm³) and an elevated random blood glucose level (284 mg/dL). Audiometry was not performed, due to the patient's limitations.

A non-contrast computed tomography (CT) scan of the temporal bone and neck (Figure 1) demonstrated left-sided otomastoiditis with destruction of the inferior mastoid tip and associated opacification of the superficial cervical soft tissues along the sternocleidomastoid muscle. Based on the clinical presentation and imaging findings, the patient was diagnosed with Bezold's abscess as an extracranial complication of chronic suppurative otitis media.

The patient was started on broad-spectrum antibiotics and antidiabetic medication prior to surgical intervention. She underwent transcervical incision and drainage of the abscess, yielding 10 mL of pus from the sternocleidomastoid sheath. Pus culture identified Enterococcus sp. Daily wound care was performed, and the wound completely closed within two weeks postoperatively.

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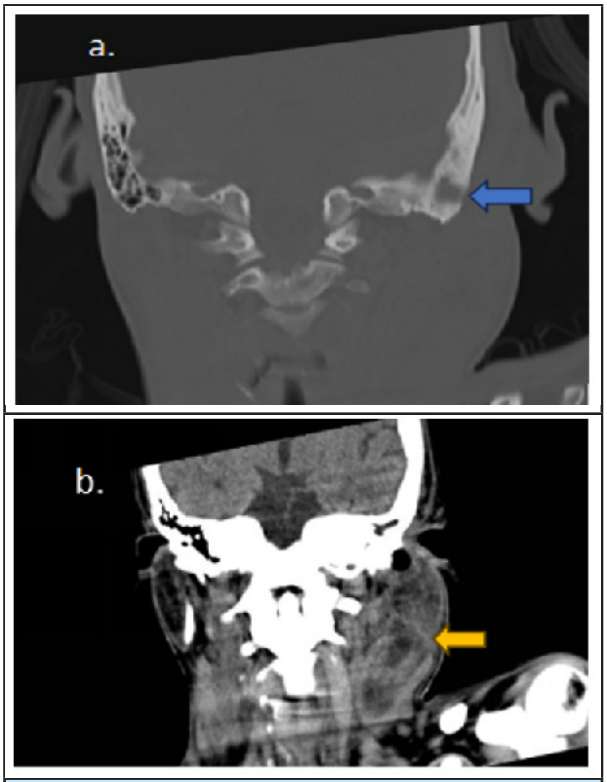


Figure 1. Non-contrast computed tomography (CT) of the temporal bone and neck.

(a) Coronal CT image of the left temporal bone showing otomastoiditis. The destruction and erosion of the inferior mastoid tip (blue arrow), indicating a potential route for extracranial spread of infection.

(b) Coronal CT image of the neck demonstrates soft tissue opacification and enlargement of the left sternocleidomastoid muscle (yellow arrow), representing inflammatory infiltration due to inferior extension of otomastoid infection into the muscle, with further spread into the superficial cervical soft tissues, consistent with Bezold's abscess.

One month later, she underwent radical mastoidectomy of the left ear. Intraoperatively, extensive cholesteatoma and granulation tissue were found filling the mastoid cavity and extending into the tympanic cavity. Pus culture from the mastoid identified Proteus mirabilis.

The patient was followed regularly after surgery. Otomicroscopic examination confirmed successful tympanic membrane graft integration. Cervical swelling resolved without postoperative complications, and no recurrent otorrhea was reported. The patient remains under routine outpatient surveillance at three-month intervals.

DISCUSSION

CSOM is a chronic infection of the middle ear with perforation of the tympanic membrane and secrete from the ear more for than two months. In general, CSOM is divided into two types: tubotympanic and atticoantral type.[2,7] CSOM remains common in low- and middle-income countries, including Indonesia, where socioeconomic factors and limited access to healthcare contribute to delayed diagnosis and treatment.[3,8] Additional risk factors include comorbid conditions that impair host immunity.[9]

In this case, an elevated random blood glucose level of 284 mg/dL raised concern for impaired glycemic control and a possible predisposition to persistent or severe infection. Immunocompromised states are known to increase the risk of CSOM and its associated complications. Although a formal diagnosis of diabetes mellitus had not been established, close metabolic monitoring was considered necessary in this patient.[9]

The presence of cerebral palsy further complicated clinical assessment due to communication limitations. This condition may obscure early symptoms such as otalgia, hearing loss, or neck discomfort. Consequently, delayed presentation may allow disease progression and increase the risk of serious extracranial or intracranial complications.[6,10]

Bezold's abscess is a rare extracranial complication of CSOM that occurs when infection spreads from the mastoid tip into the deep cervical fascia. It typically presents with neck swelling, pain, otorrhea, and signs of systemic infection.[1] In patients with neurological or speech limitations, these clinical manifestations may be unrecognized, contributing to delayed diagnosis. To our knowledge, reports describing Bezold's abscess in patients with cerebral palsy are exceedingly rare.

Computed tomography plays a pivotal role in establishing the diagnosis and defining the extent of disease. In this case, non-contrast CT imaging of the temporal bone and neck demonstrated otomastoiditis with inferior mastoid tip erosion and extension into the superficial cervical soft tissues, findings consistent with a deep neck infection originating from the mastoid. These imaging features supported the diagnosis of Bezold's abscess and guided surgical decision-making. Laboratory evidence of marked leukocytosis (27.206/mm^3) further indicated the presence of an active infectious process.[6]

Bezold's abscess is commonly caused by gram-positive organisms, particularly Streptococcus sp. However, polymicrobial infection have also been reported.[6] In this case, pus obtained during initial transcervical drainage yielded Enterococcus sp., whereas cultures from the mastoid cavity during definitive surgery grew Proteus mirabilis. This discrepancy may reflect the differing microbiological environments of an acute cervical abscess and chronically infected mastoid cavity. CSOM is known to harbor heterogeneous bacterial flora, and prior antibiotic exposure may suppress susceptible organisms while allowing others to predominate, resulting in variable culture findings.[11]

Management of Bezold's abscess may be achieved using a staged surgical approach. Urgent abscess drainage combined with intravenous antibiotics is recommended to achieve prompt source control and stabilize the patient during the acute phase. Definitive mastoid surgery can then be deferred until inflammation subsides, and the patient's general condition improves. In the present case, immediate transcervical incision

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and drainage effectively controlled the cervical infection, followed by radical mastoidectomy one month later to eradicate the underlying middle ear and mastoid disease.[6,12,13]

The patient remains clinically stable without recurrent otorrhea and continues regular outpatient follow-up. This favorable outcome underscores the importance of early recognition, appropriate imaging, and individualized surgical planning in the management of CSOM-related complications, particularly in patients with communication limitations.

CONCLUSIONS

Ear discharge complaints must receive adequate treatment to prevent both extracranial and intracranial complications. The severity of these complications can increase the risk of disease progression and even mortality; therefore, patients presenting with ear discharge should promptly receive medical attention. Bezold's abscess is a rare extracranial complication of atticoantral-type CSOM. Once complications arise, immediate multimodal management is essential to prevent further spread. In patients with speech limitations, early detection is critical to avoid the development of severe complications.

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Conflict of Interest: None.

Consent : The JNMA Case Report Consent Form was signed by the mother, the patient's guardian.

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