

(CASE REPORT)



Diagnosis and management of Auricular Chondritis: A case report

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Abstract

Background: Auricular chondritis is an inflammation of the cartilage of the auricle, characterized by serum or pus effusion between the perichondrium and cartilage layer of the outer ear. It is often caused by bacterial infections targeting the ear cartilage. When perichondritis extends deeper into the cartilage, it results in chondritis.

Objective: To report a case of auricular chondritis

Case Report: A 25-year-old female presented with a complaint of a lump on her left earlobe for the past month. On physical examination, a lump was observed involving nearly the entire auricle. The lump was fluctuant, red, tender, and associated with loss of ear contour. The patient underwent incision and drainage with the insertion of a plastic tube and compression of the earlobe.

Clinical question: What is the optimal management approach for auricular chondritis?

Methods: A review of evidence-based literature on the management of auricular chondritis.

Result: Treatment for auricular chondritis involves debridement combined with antibiotic and corticosteroid therapy to reduce inflammation.

Conclusion: In this case, auricular chondritis was successfully managed using antibiotics and corticosteroids in conjunction with surgical intervention. This approach prevented recurrent infections and minimized complications. The drainage technique used ensured that the perichondrium remained intact, preventing cartilage wrinkling and further deformation, thereby reducing the risk of the cauliflower ear's progression.

Keywords: Diagnosis; Management; Auricular Chondritis; Surgical; Cartilage of Auricular

1. Introduction

Auricular chondritis is an inflammation of the auricular cartilage, characterized by serum or pus effusion between the perichondrium and the cartilage layer of the outer ear.¹ It is commonly caused by bacterial infections targeting the ear cartilage.² When perichondritis extends deeper into the cartilage, it progresses to chondritis.³ If antibiotic treatment for chondritis fails, complications such as puckering of the earlobe, commonly referred to as cauliflower ear, may occur due to cartilage destruction. Timely and appropriate management of earlobe infections is essential to minimize cartilage damage and preserve the ear's aesthetics.⁴

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2. Case Report

A 25-year-old female presented with a complaint of a lump on the left earlobe that had persisted for one month. The lump initially appeared with redness and pain. The patient reported a history of mole removal surgery near the left ear's tragus two months prior. Two weeks postoperatively, a lump developed around the surgical site and subsided after taking prescribed oral medication. However, the lump reappeared one month ago, necessitating infection clearance in the operating room. One week after surgery, the ear developed another lump, which progressively spread to involve the entire earlobe.

On physical examination, the left ear showed lumps affecting nearly the entire auricle. The lumps were fluctuant, red, tender, and associated with a loss of ear contour. Evaluation of the left external acoustic canal and tympanic membrane was difficult. Examination of the right ear was unremarkable. A complete blood count revealed the following results: WBC 9.73 $10^3/\mu\text{L}$, Hb 12.30%, PLT 267.0 $10^3/\mu\text{L}$.

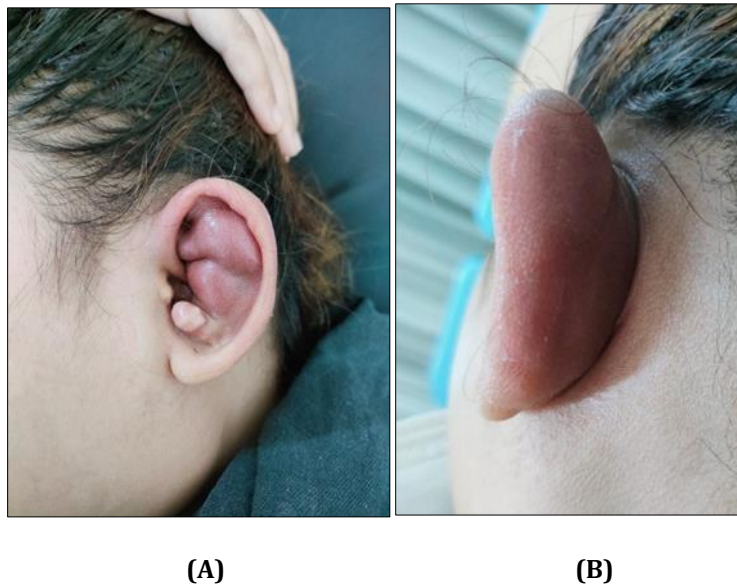


Figure 1 (a) (b) The right anterior auricle showed a lump with redness and fluctuance

The patient underwent incision and drainage with a plastic tube placement and earlobe compression in the operating theater. She was hospitalized and treated with intravenous Ceftriaxone 1 gram every 12 hours, Dexamethasone 5 mg every 8 hours, and Paracetamol 750 mg every 8 hours. During the procedure, aspiration yielded approximately 5 cc of pus mixed with blood. An incision was made at the aspiration site, revealing cartilage (chondrium) damage. The incision site was evaluated for residual pus and used as an access point for tube placement to facilitate injection therapy. Gentamicin 80 mg was administered through the tube, which was positioned vertically in the auricle and covered with sterile gauze.

The patient was discharged on oral medications, including Levofloxacin 500 mg once daily, Dexamethasone 0.5 mg every 8 hours, Paracetamol 500 mg every 8 hours, Antacid 1 tablet every 8 hours, and Gentamicin 1 cc administered routinely through the drainage tube every 12 hours.

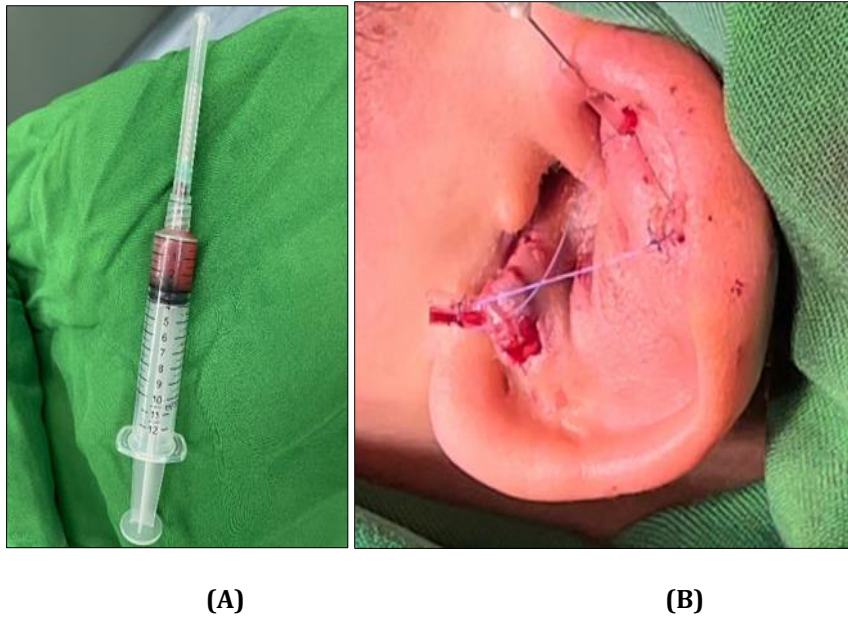


Figure 2 (a) blood-mix pus was obtained, (b) insertion of plastic tubing for injection therapy line

Three days after surgery, the patient returned for the first evaluation of antibiotic administration through the drainage tube and wound care. The wound was well-maintained, and the drainage tube was in good condition. Oral therapy was continued, including Levofloxacin 500 mg once daily, Dexamethasone 0.5 mg every 8 hours, Paracetamol 500 mg every 8 hours, and Antacid 1 tablet every 8 hours.



Figure 3 (a) first-time control looking anteriorly, (b) first-time control looking posteriorly

Seven days after the operation, the patient returned for follow-up with a reduction in the size of the lump. The drainage tube was subsequently removed. The patient then underwent the placement of a new tube on the outer side and a silicone insert for ear contouring. Oral antibiotic therapy with Levofloxacin 500 mg once daily was continued.



Figure 4 (a) removal of plastic tubing, (b) insertion of tubing for ear contouring guidance, (c) insertion of silicone

On day 14, the patient returned for evaluation following silicone insertion, and the silicone was removed. The patient was subsequently fitted with a new silicone insert for ear contouring. Oral antibiotic therapy with Levofloxacin 500 mg once daily was continued.



Figure 5 (a) silicone removal, (b) silicone insertion for contouring guidance, (c) ear fixation

On day 27, the patient returned for evaluation after silicone insertion. The silicone was removed, and the wound was well-maintained. The ear contour was restored, and no complications were observed.



Figure 6 (a) (b) ear contours are visible

2.1. Clinical question

What is the management of auricular chondritis?

2.2. Review method

A literature search was conducted using the keywords “diagnosis of auricular chondritis” AND “management of auricular chondritis” across two search engines: PubMed and Google Scholar. A critical review was performed on 20 articles before applying inclusion and exclusion criteria.

3. Result

The literature search obtained scientific publications which were released in the last 10 years, relevant with the topics and the complete academic scripts were available.

4. Discussion

A 25-year-old female patient presented with complaints of lumps on the left earlobe, with a history of mole surgery on the left ear near the tragus. This aligns with the predisposing factors for chondritis, where inflammation serves as the primary cause. Chondritis is often triggered by trauma to the auricle, including burns, surgery, ear piercing, or blunt and sharp injuries, such as those sustained in wrestling matches or acupuncture. One potential complication is perichondritis, which can extend deeper into the cartilage (chondrium), leading to chondritis.⁵

On physical examination of the left ear, lumps were observed covering almost the entire auricle. The lumps were fluctuant, red, tender, and associated with a loss of ear contour. These findings are consistent with the clinical symptoms of auricular chondritis, which include localized pain, redness, swelling, pus or fluid accumulation, fever as a sign of systemic infection, and structural deformation in severe cases. Systemic manifestations, such as widespread erythema of the pinna, may indicate infection spreading to the external ear.⁶

Diagnostic evaluation of auricular chondritis may involve culture and sensitivity tests to identify the causative microorganisms. Additional diagnostic tools, such as biopsy, ultrasonography, and CT scans, can help differentiate between chondritis and perichondritis.⁷ In this patient, further diagnostic tests were not performed, as the symptoms and physical examination findings were sufficient to establish the diagnosis.

The patient underwent incision and drainage with the placement of a plastic tube and compression of the earlobe. A drainage tube was inserted to facilitate therapy administration. Gentamicin 80 mg was administered through the tube, which was positioned vertically on the auricle and covered with sterile gauze. The patient also received oral therapy, including levofloxacin 500 mg once daily, dexamethasone 0.5 mg every 8 hours, paracetamol 500 mg every 8 hours, antacid 1 tablet every 8 hours, and gentamicin 1 cc administered through the drainage tube every 12 hours. Seven days postoperatively, the tube was removed, and a new tube was inserted on the outer side of the ear along with silicone for ear contouring, which was maintained for 7 days. At the next follow-up, the silicone was replaced and maintained for an additional 8 days.

Management of auricular chondritis typically involves a combination of antibiotic therapy, drainage, and debridement.^{7,8} Pattanaik et al. described a management approach involving wound drainage around the infection and irrigation with streptomycin solution. The space was then filled with a solution containing streptomycin, hyaluronidase, and triamcinolone, yielding superior outcomes compared to conventional surgical procedures, which often caused significant patient discomfort.⁹

Bassiouny evaluated the efficacy of the excision method versus the pipe drainage method for chondritis.¹⁰ In the excision group, 4 out of 15 cases required 3–4 repeated debridements, resulting in greater cartilage and skin loss, more severe deformities, and a prolonged treatment period of 3–4 months. Conversely, the pipe drainage method resulted in complete healing within an average of 1 month, with better aesthetic outcomes and a shorter average hospital stay of only 2 days. In this case report, the patient received medical therapy consisting of antibiotics and corticosteroids and underwent procedures including aspiration, incision, and earlobe compression.¹⁰

5. Conclusion

With appropriate treatment combining medication and surgical intervention, the management of auricular chondritis in this patient resulted in successful outcomes without recurrent infection. One notable advantage of the drainage method is that the pipe acts as a scaffold, preventing perichondrial wrinkling and ensuring that newly formed cartilage remains homogeneous. This method also prevents the further expansion of cauliflower ear deformities. Additionally, the pipe facilitates the targeted irrigation of antibiotics into the subperichondrial space, effectively addressing sensitive organisms without the risk of systemic toxicity.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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