Perichondritis
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CASE REPORT

A 26-year-old Caucasian female with complaints of right swollen pinna (Figure 1) two weeks from that was progressively worsening came to the office. Swelling of the right pinna was associated with severe pain, intensity 7/10. Pain was non-radiating with no aggravating or relieving factors. Patient had ear piercing three weeks ago. One week prior, she was examined at an urgent care facility for the same and was given a ten-day course of amoxicillin for presumed acute otitis externa. Despite being on antibiotics her symptoms got worsened. Patient was a non-diabetic and in good health, with no other significant past medical history. She was not on any prescription medications. No history of trauma or injury to the ear.

Patient was afebrile on examination with normal vital signs. She had an inflamed, erythematous and tender right pinna with sparing of the ear lobe. She has serosanguinous discharge from “Scapha” of the right external ear, where the piercing was done. External auditory canal was free of cerumen, erythema and or any signs of infection. Tympanic membrane had a normal cone of light without air fluid level. Hearing was not impaired. Rest of the systemic examination was normal.

The differential diagnosis could be simple otitis externa (or “swimmer’s ear”), malignant otitis externa, cellulitis, perichondritis and abscess. Patient had no exposure to swimming. No involvement of deeper structures or soft tissues on examination, but involvement of pinna favored the diagnosis of perichondritis.

Our patient was referred to ENT surgeon for further management who performed surgical drainage of the infection. Pseudomonas was isolated. She was prescribed a seven-day course of Levofloxacin. She had full recovery with no further sequelae or complications.

DISCUSSION

The ear is divided into the external, middle, and internal parts (Figure 2) [1]. The external ear is where our focus lies with this case. It consists of a fan like projection called the pinna/auricle, which works to collect sound, and the external acoustic meatus that funnels sound to the tympanic membrane. The pinna is composed of elastic cartilage covered by skin. It contains a number of

Figure 1: Ear infection.
elevations and depressions. Of importance are the helix, which is the raised cranial margin of the pinna, and the antihelix, which is an elevation paralleling the helix. These two ridges create the fossa triangularis anterior to the antihelix, and the scapha located between the helix and antihelix. The blood supply to the ear arises mostly from the posterior auricular and superficial temporal arteries. Innervation of the skin is derived from the great auricular and auriculotemporal nerves. The great auricular nerve supplies the back of the ear as well as the helix, antihelix and lobule. The auriculotemporal nerve supplies the skin of the pinna anterior to the acoustic meatus. Lymphatic drainage of the external ear is carried out by three groups of lymph nodes. The lateral surface of the superior half of the pinna is drained by the superficial parotid lymph nodes. The cranial surface of the superior half of the auricle drains to the mastoid nodes and deep cervical lymph nodes. The remaining portion of the pinna drains to the superficial cervical lymph nodes. The helix and the scapha are the structures predominantly involved in perichondritis.

Perichondritis is an infection of the skin and tissue surrounding the cartilage of the outer ear. The most common bacteria that causes perichondritis infection is *Pseudomonas aeruginosa*. Perichondritis is usually caused by injury to the ear due to ear surgery, ear piercing (especially piercing of the cartilage), or contact sports. Ear piercing through the cartilage is probably the most significant risk factor. Surgery, burns, and acupuncture also increases the risk of infection.

A painful, red ear is the most common symptom [2]. At first, the infection will look like a skin infection (cellulitis), but it quickly worsens and involves the perichondrium.

The redness usually surrounds an area of injury, such as a cut or scrape. Patient may also present with fever and in severe cases serosanguinous or purulent drainage.

Perichondritis is diagnosed based on the patient’s history and by physical examination. If there is a history of trauma along with pain and redness of the ear with sparing of earlobe then perichondritis is suspected. There may be a change in the normal shape of the ear.

Treatment consists of antibiotic coverage, either by mouth or intravenous. Antimicrobial of choice is Fluoroquinolones. If there is a trapped collection of pus, surgery may be necessary to drain this fluid and remove any dead skin and cartilage [2].

If antibiotics are taken early on, full recovery is expected. In more advanced cases, when the infection involves the ear cartilage (chondritis), part of the ear may necrotize and need to be surgically removed. A perichondrial abscess may also develop. If so, plastic surgery may be needed to restore the ear to its normal shape [2].

**CONCLUSION**

The best way to prevent this infection is to avoid piercing an ear through the cartilage (as opposed to the ear lobe). The popularity of cartilage piercing has led to a significant increase in the number of perichondritis. If perichondritis is anticipated then prompt diagnosis and early treatment with antibiotics may prevent surgical drainage.

**Keywords:** Ear piercing, Perichondritis

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**How to cite this article**


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Article ID: 101023Z01SD2019

doi: 10.5348/101023Z01SD2019CL

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**REFERENCES**


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Figure 2: Anatomy of External Ear.
Image courtesy of www.myvmc.com

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Shah Darshan – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Guarantor of Submission
The corresponding author is the guarantor of submission.

Source of Support
None.

Consent Statement
Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest
Authors declare no conflict of interest.

Data Availability
All relevant data are within the paper and its Supporting Information files.

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