

# A Rare Case of Intra-Auricular Sinus Presenting as Recurrent Perichondritis

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## Abstract

Periauricular sinuses are common and are often associated with other congenital anomalies. The most common type is the preauricular sinus followed by the postauricular variant. Intrapinna sinus is extremely rare with very few cases reported in literature. We present a 15-year-old male presented with recurrent perichondritis of his left pinna. Examination revealed a sinus opening in the pinna. The sinus along with its cul de sac was excised completely. We conclude that although intra-auricular sinuses are extremely rare, they should be kept in the differential diagnosis of a patient presenting with recurrent pinna perichondritis. The treatment includes complete excision of the sinus tract along with its sac.

**Keywords:** Excision, intra-auricular sinus, periauricular sinus, preauricular sinus, variant

## INTRODUCTION

Preauricular sinus is the most common form of periauricular sinuses. They may be isolated or associated with congenital syndromes.<sup>[1]</sup> They are formed due to epithelial inclusions which occur during the formation of pinna by fusion of auricular hillocks during early embryonic life.<sup>[2]</sup> They usually are asymptomatic, but may present as recurrent infection and suppuration. Their preauricular pits open in anterior to the helical-tragal line.<sup>[3]</sup> They have a predictable course and usually terminate in the root of the helix. The latest evidence suggests that definitive surgical treatment which offers the most favorable outcome is by wide local excision of the sinus,

as opposed to the previously preferred technique of simple sinectomy. Employing magnification during surgery, following the sinus tract from the inside as well as outside and complete removal of the branching tracts of the sinus may further minimize the risk of recurrence.<sup>[1]</sup>

The postauricular variant of the periauricular sinus was found to have a variable but predictable course.

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Their preauricular pits were found to be posterior to the helico-tragal line.<sup>[3]</sup> They were found to present as recurrent postauricular suppuration.<sup>[4]</sup>

The intra-auricular sinus is a rare variant of the periauricular sinus with its pit located on the helical fold. Only few cases have been reported so far. They are found to extend as a sinus lateral to the pinna cartilage.<sup>[5]</sup> The presented case report is one such patient presenting with recurrent perichondritis.

**CASE REPORT**

A 15-year-old male presented to the otolaryngology outpatient department with recurrent attacks of painful swelling in the left pinna. The patient did not have any history of fever or swelling anywhere else in the body. He had no history of trauma or any autoimmune illness.

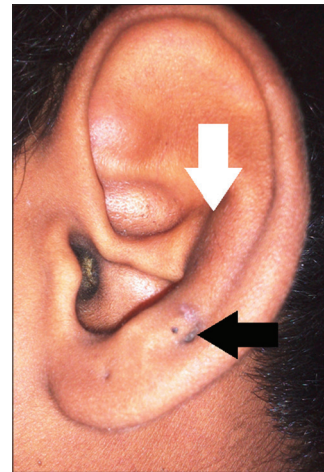
On examination, the pinna was normal in shape and size and a small sinus was found at the helical fold with fullness in the conchal region [Figure 1]. There was hyperpigmentation of the overlying conchal skin. No active discharge of inflammation was seen. There were no other congenital malformations in the other pinna and head and neck region. A provisional diagnosis of the intra-articular sinus was made and he was planned for surgical excision of the lesion.

The patient was operated under general anesthesia and the lesion was approached through a helical incision including the sinus opening, under magnification. The sinus was found to extend into a cyst found in the conchal bowl [Figure 2]. The whole tract along with its cul de sac was excised in toto [Figure 3]. The skin was draped back after excision.

The lesion on histopathology showed a skin lined tract of 3 cm in length consistent with auricular sinus with a dermoid cyst. The patient had an uneventful recovery and was followed up for a year. He had no recurrence of perichondritis on follow-up.

**DISCUSSION**

The pinna formation begins as early as 6<sup>th</sup> week on intrauterine life by the fusion of cartilaginous hillocks (of His) made of mesoderm and ectoderm.



**Figure 1:** Intra-auricular sinus (black arrow) with bulge in the conchal bowl (white arrow)



**Figure 2:** The tract is seen extending to the sac in the conchal bowl (arrow)



**Figure 3:** Excised tract along with the sac

Periauricular sinuses are formed either due to incomplete fusion of these hillocks or entrapment of ectodermal folds during auricular formation or

due to a defective closure of the dorsal portion of the first branchial cleft.

Preauricular sinuses are the most common type and can be either inherited or sporadic. When inherited, they show an incomplete autosomal dominant pattern with reduced penetrance and variable expression. They may be bilateral, increasing the likelihood of being inherited, in 25%–50% of cases. Preauricular sinuses are associated with other congenital malformations or syndromes in 3%–10% of cases, primarily in association with deafness and branchio-oto-renal syndrome.<sup>[6]</sup>

A typical preauricular sinus pit opens just at or near the root of helix and ends in the tragus. The postauricular sinuses on the other hand are rare and have a variable course. Their pits located posterior to the imaginary line that connects the tragus with the posterior margin of the ascending limb of the helix

Most sinuses are asymptomatic and require no treatment. Other patients present with recurrent infection, swelling and purulent discharge. Complete surgical excision with removal of the branches is the treatment of choice.<sup>[4]</sup>

Here we present a true pinnal intra-auricular sinus which may be classified as the third variant of the periauricular sinus. These sinuses open into a pit located at the helix; the tract is found extending laterally to the pinna cartilage and usually terminates in the conchal bowl. The sinus and the cyst are situated in the imaginary cross line where the upper hillocks fused with the lower hillock during embryonic life.<sup>[5]</sup>

In this reported case, the sinus was found to cause recurrent perichondritis. The patient was treated by complete excision of the sinus under magnification and there was no recurrence of perichondritis on follow-up.

## CONCLUSION

There are only a few cases in the medical literature

describing an intra-auricular variant of the preauricular sinus. Clinically, the sinus presents as recurrent pinna perichondritis. The treating clinician should include intra-auricular sinus as a differential in cases of recurrent perichondritis. Complete excision of the tract along with the sac is the treatment of choice.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

## Authors' contributions

Both authors have contributed equally to the manuscript.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

## Compliance with ethical principles

No prior ethical approval is required for single case reports. However, the patient provided consent for publication as stated above.

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