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**Case Report**

# PRE-AURICULAR SINUS: AN UNCOMMON PRESENTATION

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**ABSTRACT**
An infected pre-auricular sinus presenting as a post-auricular swelling is commonly misdiagnosed as an infected dermoid or sebaceous cyst. It may even mimic a mastoid abscess leading to further unwarranted investigations and interventions. We present a case of a 25-year-old Malay man who was initially diagnosed with recurrent infected dermoid cyst. At presentation, a right post-auricular inflamed swelling was noted with an overlying old incision and drainage scar. An auricular pit was found at the crus of helix. Using a blunt probe inserted along the sinus tract pus was drained without the need for further surgical incision. Six weeks after the acute episode, patient underwent excision of the pre-auricular sinus with no evidence of recurrence at three months follow up. Awareness by the attending physician of this 'variant type' of pre-auricular sinus at patient's first presentation may negate the need for unnecessary incision and drainage which may subsequently impact the outcome of surgical excision and reduce the risk of recurrence.
**Keywords:** Variant type pre-auricular sinus, post-auricular cyst.
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## INTRODUCTION

Pre-auricular sinuses are common congenital abnormalities resulting from incomplete fusion of the six auricular hillocks. Its reported incidence varies worldwide as the majority of patients remain asymptomatic in their lifetime.[1] However, once infected, it may present with problematic recurrent sinus discharge or an infected cyst usually in the pre-auricular region. Being uncommon, a post-auricular infected cyst complicating a pre-auricular sinus is commonly mistaken for an infected dermoid or sebaceous cyst. At its pinnacle, it may even mimic a mastoid abscess leading to further unwarranted investigations and interventions.

## CASE REPORT

We present a case of a 25-year-old Malay male who was referred to our centre with an initial diagnosis of recurrent infected dermoid cyst. He had presented with a painful right post-auricular swelling of five days duration and had similar episode about a year ago of which an incision and drainage was performed (Figure 1a). There were no associated otorrhoea or hearing loss. On careful examination, a pit was noted at the crus of helix of the right pinna (Figure 1b). Examination of the external ear canal (EAC) and tympanic membrane were normal. No other pits were found around the auricular region of the opposite ear.

A blunt probe was introduced through the pre-auricular sinus of which the tract was noted to communicate with the post-auricular swelling. This allowed for drainage of the pus without a surgical incision (Figure 2).

The patient was then treated with a course of antibiotics. Six weeks after the acute episode, the patient underwent surgical excision of the pre-auricular sinus with a dual approach using pre-auricular and retro-auricular approach. As patient has had a previous incision and drainage, anatomical disruption of the sinus tract was visible intraoperatively. However, no evidence of recurrence was noted after three months follow-up visit.

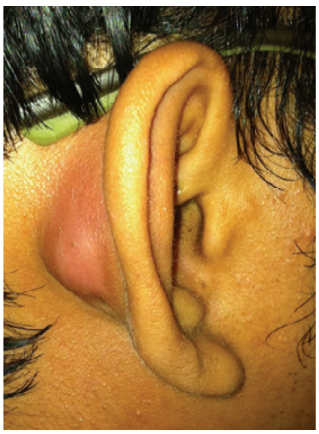

**Figure 1a:** Infected post-auricular cyst with an auricular pit on the crus of helix.

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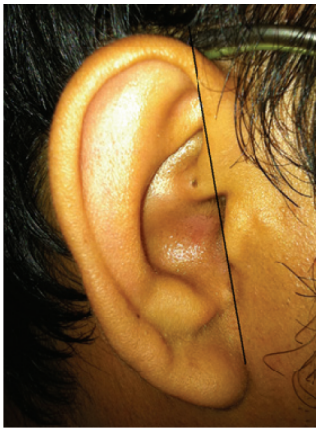

**Figure 1b:** Imaginary line connecting the tragus and the posterior margin of ascending limb of helix. Note the pit located posterior to this line.

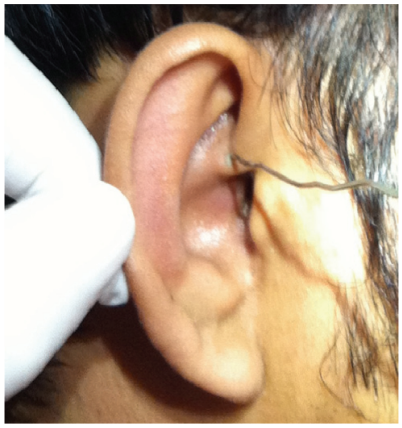

**Figure 2:** A blunt probe inserted along the sinus tract allowing drainage of pus.

## DISCUSSION

A post-auricular infected cyst complicating a pre-auricular sinus presents a diagnostic challenge to the attending physician. In most pre-auricular sinus, the sac is located anterior to the external auditory meatus (EAC) and rarely posterior to it. This rare type of pre-auricular sinus with its sac posterior to the EAC has previously been described as a 'variant type' of pre-auricular sinus ('post-auricular sinus') as compared to the 'classical type' which has its sac anterior. A retrospective study of 101 patients who underwent pre-auricular sinus excision found that about 10% of the pre-auricular sinuses were of the 'variant type'. All 'variant type' of pre-auricular sinuses also showed auricular pits located posterior to the imaginary line that connects the tragus with the posterior margin of the ascending limb of helix, unlike the 'classical type' which has pits anterior to this imaginary line.[2] This finding was also consistent with the auricular pit found in our patient. This highlights the importance of careful examination of the external ear in patients who present with an infected post-auricular cyst as these patients are often misdiagnosed as an infected dermoid or sebaceous cyst. A sub-periosteal abscess complicating an acute mastoiditis may also present with a post-auricular infected swelling although there will usually be other accompanying auditory symptoms such as decreased hearing or otorrhoea on the affected site.

An accurate and correct diagnosis will also aid in the appropriate management of these patients. The most problematic complication after surgical excision is the recurrence due to incomplete excision of the sinus tracts. Incision and drainage of an infected post-auricular cyst often results in anatomical disruption of the sinus tracts complicating future surgical excision resulting in increased risk of recurrence. Identifying patients who have an infected post-auricular cyst complicating an otherwise insidious pre-auricular sinus may avoid unnecessary surgical incision for drainage as in our case.[3]

## CONCLUSION

Although it is not common for an infected pre-auricular sinus to present as a post-auricular swelling, it should always be actively looked for to avoid unwarranted investigations and interventions which may only serve to complicate future management of these patients.

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