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Research Article

Preauricular sinus: a clinicopathological study

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ABSTRACT

Background: Preauricular sinuses are common congenital malformations. In most instances the diagnosis and management of condition is straightforward.
Methods: The present study was done on 26 patients of preauricular sinus who presented to the Department of ENT, S.S. Medical College & G.M. Hospital, Rewa from August 2012 to July 2013 prospectively.
Results: Males and females were equally affected. Most patients i.e. 11 belong to 11-20 year age group with age ranging from 4 year to 60 years. Two cases had genetic history and one case was found to be associated with chronic suppurative otitis media (CSOM).
Conclusions: The patients in whom a preauricular sinus is identified, the associated congenital anomalies and family history should be sought. Early identification and spreading of awareness should be done to avoid the complication of recurrent abscess in preauricular region.

Keywords: Abscess, Congenital, Excision, Preauricular sinus

INTRODUCTION

The condition of preauricular sinus was first described by Van Heusinger, the preauricular sinus is a benign congenital malformation of the preauricular soft tissues.[1] It is variably also termed as preauricular pit, preauricular fistula, preauricular tract and preauricular cyst.

Congenital preauricular sinus is a malformation of the preauricular soft tissues the incidence of which is between 0.1 and 0.9% in Europe and the United States, 2.5% in Taiwan and reaches 10% in some African regions.

Formation of preauricular fistula is associated with the development of the pinna during the 6th week of gestation. The auricle develops from six mesenchymal hillocks i.e. 3 hillocks from the first arch and the other 3 from the second arch. These six hillocks fuse eventually to form the full-fledged pinna. Development of preauricular sinus is due to incomplete fusion of the hillocks.

It is more often unilateral, only occasionally are bilateral forms inherited. Several syndromes, accounting for about 5% of cases, are associated with preauricular pits. These include Branchio-Oto-Renal (BOR) syndrome (structural anomalies of the external, middle, and inner ear, hearing loss, and preauricular pits, lateral cervical fistulas, and renal anomalies), Beckwith-Wiedemann syndrome (Preauricular pit with asymmetric ear lobes), Mandibulofacial dysostosis (Treacher-Collins Syndrome) and hemicranial microsomia syndrome (auricular pits/fistulas).

Most preauricular pits/sinuses remain asymptomatic throughout life.[2-5] They can be of cosmetic importance. It may be associated with deafness and renal malformations.

The visible pit may represent the full extent of the deformity, or mark a sinus tract that can vary in length, branch and follow a tortuous course. Preauricular sinus may lead to the formation of a subcutaneous cyst that is intimately related to the tragal cartilage and the anterior crus of the helix. In all cases, part of the tract blends with the perichondrium of the auricular cartilage.[6] The sinus tract is lateral and superior to the facial nerve and parotid gland, in contrast to the tract of an anomaly of the first bronchial cleft, which tends to be intimately related to these structures.

Not infrequently, patients present with discharge from the sinus either as a result of desquamating epithelial debris or infection. Erythema, swelling, pain and discharge are familiar signs and symptoms of infection.

METHODS

The present study is a prospective analytical review of 26 patients of preauricular sinus who presented to the Department of ENT, S.S. Medical College & G.M. Hospital, Rewa from August 2012 to July 2013. The relevant data were collected with regard to age and sex distribution, laterality, genetic history, family history, associated congenital disorders.

All patients underwent excision of preauricular sinus but a few were later lost to follow up.

RESULTS

Among 26 patients, males and females were equally affected (Table 1).

Most patients i.e. 11 of preauricular sinus belong to 11-20 year age group with age ranging from 4 year to 60 years (Table 1).

Table 1: Age and sex wise distribution.

No.	Age	Male	Female	Total	%
1	0-10	5	0	5	19.2
2	11-20	4	7	11	42.3
3	21-30	1	5	6	23.1
4	31-40	1	0	1	3.85
5	41-50	0	1	1	3.85
6	>50	2	0	2	7.7
Total		13	13	26	100

Left ear was most commonly involved i.e. 12 cases followed by right ear (11 cases) and bilateral in 3 cases (Table 2).

As per socioeconomic status maximum patients (19) belong to lower class followed by lower middle class 4, upper middle 3 (Table 3).

Most sinuses are clinically silent but in present study 10 patients had given a prior history of recurrent abscess. The eventual, however not rare, appearance of symptoms is related to an infectious process. The most common pathogens causing infection are Staphylococcal species and, less frequently, Proteus, Streptococcus and Peptococcus.

Table 2: Laterality wise distribution.

No.	Laterality	No.	Percentage
1.	Right	11	42.3
2	Left	12	46.15
3.	Bilateral	3	11.55
Total		26	100

The sinus was never noticed by patient in 3 cases, noticed long time after birth in 6 cases and shortly after birth in 17 cases.

Table 3: Socioeconomic status wise distribution.

No.	Socioeconomic status	No.	%
1.	Lower	19	73.07
2	Lower middle	4	15.38
3.	Middle	3	11.55
4.	Upper	0	0
Total		26	100

None of the cases showed renal involvement or association with congenital disorders. One case was associated with CSOM (Chronic suppurative otitis media).

Table 4: Duration wise distribution.

No.	Duration	No.	Percentage
1.	Never noticed	3	11.55
2	Long time after birth	6	23.1
3.	At birth	17	65.35
Total		26	100

Two cases showed genetic involvement. Preauricular sinuses 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.

All patients underwent surgical excision of sinus. 15 patients returned for follow up and rest 11 patients were lost to follow up. 3 cases showed recurrence.

DISCUSSION

Preauricular pits/sinuses are often a rather subtle finding on physical exam Failure of complete fusion of the hillocks results in the formation of preauricular sinuses. The preauricular sinus is thus closely related to the groove between the tragus and the anterior end of helix. They ramify within the preauricular soft tissue. Hence the actual identification of the sinus and all its ramifications for a complete excision over the cartilage of the helix and tragus can be potentially difficult.

In present study preauricular sinus were found to be affecting both the sexes equally similar to previous study.[7] This is at variance with other studies in which preauricular sinus was reported to be more common in females than in males.

Over 50% of cases overall are unilateral and most often sporadic. In present study also unilateral involvement was more i.e. 23 cases as compared to bilateral cases i.e. 3 cases.[8] Left side was found to be more common i.e. 12 cases than right i.e. 11 cases. But in previous studies right side was more commonly involved.[9]

As per the socioeconomic status lower class patients presented more commonly with preauricular sinus might be because of approach of this class of people in government hospital which is a less common practise among higher income group preferring private treatment.

The condition is usually present at birth as in 17 cases with only 3 patients claiming that they did not notice. This is consistent with Moore & Persand and Scheiffeld series.[7,10]

In present study only one case showed genetic involvement where patients' mother was found to have similar condition on seeking history and conducting routine physical examination.

Most patients with preauricular sinus are asymptomatic. However, some patients may present with discharge from the sinus. The diagnosis is made clinically and asymptomatic patients require no treatment. But if repeated infections occur, excision of the sinus may be necessary. The tract is prone to recurrence if it is not completely excised. In present study 10 patients showed recurrent abscess formation. This could be due to lack of awareness and inattention to sinus opening and not seeking proper medical advice on time. A few people consider it to be a minor problem and remain dormant for the treatment.

In selected cases, a renal ultrasound scan may be appropriate. Where no associated abnormalities are identified and where the preauricular sinus is asymptomatic, there is consensus opinion that no further action is indicated. In present study none of the case was associated with renal disorders.

In those patients in whom a preauricular sinus is identified, the associated congenital anomalies be sought. In present study only one case was diagnosed as a case of treacher Collin syndrome. A preauricular sinus occurs either sporadically or is inherited. In present study 2 cases were genetically inherited from parents.

In the acute phase of infection, treatment comprises administration of appropriate antibiotics, and incision and drainage of an abscess if present. Preauricular sinus infections often recur after treatment with antibiotics. Recurrence after surgical removal ranges from 5% to 20%, depending on the surgical technique and experience of the surgeon. In present study it was seen in 3 cases.

Complete surgical excision of a preauricular sinus with tract or cyst is indicated in the setting of recurrent or persistent infection. The operation is typically performed when the acute infection has subsided.

CONCLUSION

This study includes a short review of the literature in order to focus on the prevalence, etiopathogenesis and management of preauricular sinus.

In those patients in whom a preauricular sinus is identified, associated congenital anomalies be sought. In selected cases, a renal ultrasound scan may be appropriate. Where no associated abnormalities are identified, and where the preauricular sinus is asymptomatic, there is consensus opinion that no further action is indicated.

The patients with preauricular sinus raises high index of suspicion to monitor for infections, hearing loss and possible renal problem.

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