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MICROSCOPE-ASSISTED SUPRA AURICULAR APPROACH OF PREAURICULAR SINUS: OUR EXPERIENCE

ENT

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ABSTRACT

Background PAS (Preauricular Sinus) is a common congenital condition of the external ear. It is seen in front of the external ear as a small dimple or pit. When infected, it presents as swelling with pain and discharge from the sinus with a foul smell. There are many terminologies used for this condition like preauricular pit, preauricular tract, and helical fistula.1 PAS is an embryological malformation associated with the development of pinna in the 6th week of gestation.2 Embryologically six mesenchymal hillocks form the auricle - three hillocks from the first arch and three hillocks from the 2nd arch.3 These hillocks fuse to form the pinna and incomplete fusion of these hillocks gives rise to the preauricular sinus.4,5 **Objective** The rationale of this study is to highlight the surgical advantage achieved with the aid of an operating microscope combined with a supra auricular surgical technique. **Materials And Methods** A prospective longitudinal study was conducted in the Department of ENT, Narayana Medical College and General Hospital, Nellore between November 2022 to October 2023. A total of 15 patients were diagnosed with preauricular sinus and were planned for excision. A thorough ENT examination was done and the syndromes commonly associated with PAS were ruled out. All patients were examined by a physician for systemic diseases and were declared fit for surgery. Surgery was done using a simple elliptical incision around the preauricular sinus pit with supra auricular dissection proceeded with the aid of an operating microscope (LEICA) **Results** Out of 15 patients, 9 were females and 6 were males. 10 were unilateral and only 5 cases were bilateral, 7 cases were right-sided and 3 were left-sided. All were primary cases. None of the cases were part of any syndromes associated with PAS. Patients were aged between 7 to 45 years. Follow-up period was 3 months. Six patients presented with the quiescent stage of disease and were considered for immediate surgery. One female patient presented with abscess formation. Incision and drainage were done for the patient and surgery had to be deferred for 3 months to get rid of the residual infection. **Conclusion** PAS (Preauricular Sinus) is a common congenital condition of the external ear. PAS is multibranched and has several ramifications. Hence it is prone to recurrence if the tract is not completely excised. Microscopic magnification combined with a supra auricular approach gives a better result. Preauricular soft tissue is dissected along with the sinus tract to avoid recurrence and remove all ramifications of the PAS tract.

KEYWORDS

PAS, Microscope, Supra Auricular, Quiescent Stage.

INTRODUCTION:

PAS (Preauricular Sinus) is a common congenital condition of external ear. It is seen in front of external ear as a small dimple or pit. When infected, it presents as swelling with pain and discharge from sinus with foul smell. There are many terminologies used for this condition like preauricular pit, preauricular tract and helical fistula.[1] it was first described by Heusinger in 1864.[2].

PAS is an embryological malformation associated with development of pinna in 6th week of gestation.[3] Embryologically six mesenchymal hillocks forms the auricle - three hillocks from first arch and three hillocks from the 2nd arch. These hillocks fuse to form the pinna and incomplete fusion of these hillocks give rise to preauricular sinus.[1] Another theory states that PAS develops from ectodermal folding.[4,5,6]

The course of the sinus in preauricular subcutaneous tissue is not constant, but with ramifications upwards and medially,[7] externally the sinus is located superficial to temporalis fascia, lateral and superior to parotid gland, facial nerve and more important terminal part near or adhering to first part of helical cartilage.[6] Surgery is indicated usually after two episodes of infection and preferably in quiescent stage.[7,8,9]The most common causative pathogen isolated is Staphylococcus and less frequently Proteus, Streptococcus and Peptococcus.[10]

In literature apart from few modifications, the standard surgical procedure for PAS is simple sinectomy. An elliptical incision is given around the preauricular pit and dissection proceeds in subcutaneous plane towards helix. Later in 1990, supra-auricular approach was described in which a standard elliptical incision is extended to supra-auricular region.[11]

His modification widely practiced nowadays makes dissection easier, reduces recurrence.[12] and makes scar aesthetically pleasing and acceptable to the patient. The rationale of this study is to highlight the surgical advantage achieved with the aid of operating microscope combined with standard surgical techniques.

MATERIAL AND METHODS:

A prospective longitudinal study was conducted in the department of ENT, Narayana Medical College and General Hospital, Nellore between November 2022 and October 2023. A total of 15 patients were diagnosed with preauricular sinus and were planned for excision. A thorough ENT examination was done and the syndromes commonly associated with PAS were ruled out. All patients were examined by a physician for systemic diseases and were declared fit for surgery. All the cases were assisted by first author under general anaesthesia. Surgery was done using simple elliptical incision around preauricular sinus pit and Supra auricular dissection proceeded with the aid of operating microscope (LEICA).

Inclusion Criteria:

Patients in age group of 7-45 presenting in quiescent stage of PAS.

Exclusion Criteria:

Patients suffering from active infection and any PAS associated syndrome.

Procedure:

Patients were adequately sedated and continuously monitored by an anaesthetist throughout the procedure. After local disinfection 1:100000 2% Xylocaine with adrenaline was injected around the preauricular sinus. A lacrimal probe was used to gently probe the sinus for its extension An elliptical incision is given around the sinus pit and incision is extended supra auricularly, using 0.6 magnification and a 200 mm focal lens of the operating microscope, all ramifications of the sinus tract are identified and dissection is carried out meticulously with fine dissecting scissors towards the helix. A small Babcock forceps is used to hold and lock the mouth of sinus opening. Wound is closed without drain as perfect hemostasis is achieved with a microscope. Preauricular soft tissue is dissected along with the sinus tract to avoid recurrence and remove all ramifications of PAS tract. Supra auricular dissection when combined with magnification indeed gives better results.

RESULTS:
Out of 15 patients, 9 were females and 6 were males. 10 were unilateral and only 5 cases were bilateral. 7 cases were right sided and 3 were left sided. All were primary cases. None of the cases were part of any syndromes associated with PAS. Patients were aged between 7 to 45 years. Follow-up period was 3 months. No recurrence was seen in this period. One female patient presented with abscess formation. Incision and drainage was done for the patient and surgery had to be deferred for 1 month to get rid of the residual infection.

DISCUSSION:
PAS is a congenital condition commonly found in routine ENT examinations. Most of them are asymptomatic and appear as a small pit in front of the helix. Patients present with foul-smelling discharge, swelling, pain and rarely facial cellulitis. When infected an incision and drainage is done primarily and a surgery is planned in later stage. PAS is multibranched and has several ramifications. Hence it is prone to recurrence if the tract is not completely excised. There are no proper guidelines regarding the timing of PAS excision. However, in literature there is a general agreement for surgical excision to be performed after, at least, two previous infections and in quiescent stage. In our study, all the cases were operated in quiescent stage only.

Our results are similar to a study done by Taneja et al[13] who attained success rate with lacrimal probe and operating microscope. In our study, we have used a lacrimal probe to assess the extent of the main tract approximately and the advantage of the supra auricular approach augmented with an operating microscope to dissect ramifications & sinus tract completely. All our surgeries were timed during a quiescent stage of disease which is similar to study of Goel AK et al.[9] Our study achieved 100% success rate with supra auricular microscopic approach without methylene blue stain in contrast to study by Awauh. P. et al[1] who recorded a 3 fold increase in recurrence with methylene blue stain. All cases in this study were operated under general anesthesia with 100% success rate which is in contrast to study of Yeo et al[14] where local infiltration had higher rate of recurrence than general anaesthesia.

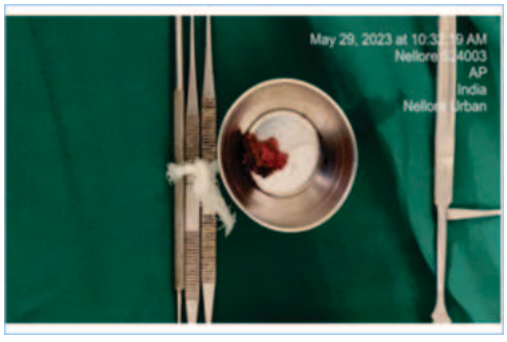
CONCLUSION:
PAS (Preauricular Sinus) is a common congenital condition of external ear. PAS is multibranched and has several ramifications. Hence it is prone to recurrence if the tract is not completely excised. Microscopic magnification combined with supra auricular dissection gives a better result. Preauricular soft tissue is dissected along with the sinus tract to avoid recurrence and remove all ramifications of PAS tract.

Supra auricular incision

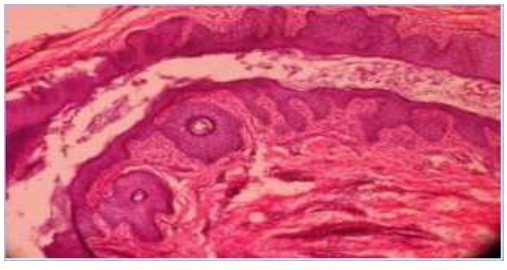
Probing with a Lacrimal Probe

Dissection in the supra auricular region and identifying ramifications in the microscope

Complete excision of the tract



Excised Sinus Tract



Microscopic Picture of Specimen

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