Pre-Auricular Sinus: Review and Comparative Study of Surgical Techniques

*A AKRAM **M TARIQ ***A M KHAN ***F N ELAHI ***F AKBAR
* Mayo Hospital, Lahore, Pakistan.** SIMS/Services Hospital, Lahore, Pakistan ***Glan Clwyd Hospital, Rhyl, North Wales, UK.
Correspondence to Dr. Muhammad Tariq E mail: dr_m_tariq@hotmail.com

Objective: To determine the role of operating microscope in excision of preauricular sinus. **Design:** A retrospective study. **Place and duration of study**: From January 2005 to July 2006 at Mayo Hospital, Lahore. **Patients and methods**: All the patients who underwent preauricular sinus excision under operating microscope were studied. Patients reviewed in follow up for recurrence of sinus and other complications. **Results:** A follow up of all operated patients for a period of minimum of 8 months revealed good results without any recurrence. **Conclusion**: Magnification employed during surgery minimizes the risk of recurrence of preauricular sinuses.
Keywords: Preauricular sinus, microscope

Preauricular sinus (ear pit) is a common congenital abnormality described by Van Heusinger in 1864[1]. It is defined as a congenital lesion in which a small skin opening located in front of the external ear communicates with a subcutaneous network of cysts[2] (Fig. 1). It arises from the anterior aspect of the helix, preauricular sinus is not branchial cleft remnant related. Preauricular sinus can be either inherited or sporadic. When inherited, they show an incomplete autonomic dominant pattern with reduced penetrance[3] and variable expression. Recently a locus was found to map to chromosome 8q11.1-q13.3[4]. The incidence of preauricular sinus varies from 0.9% in whites, 5% in blacks and 10% in asian[5]. They may be bilateral; usually these lesions are asymptomatic[6]. The vast majority is benign in nature and requires no intervention. However, some patients complain of discharge and/or infections, recurrent infection may lead to development of a pre-auricular ulcer. Recurrent infection is a clear indication for complete excision. Complete excision of the sinus tract and its associated cyst down to the temporal is fascia effect a cure. Patients with preauricular sinuses present to the clinician with persistent discharge, recurrent infections or recurrence after surgery. Surgery has always been regarded as the treatment of choice. Several methods have been used to improve the success rates, including the use of probes or preoperative injection of methylene blue into the tract[2,7]. The objective of this study is to analyze our methods and results with preauricular sinus excisions.

Patients and methods

This is a hospital based study carried out at the department of Otorhinolaryngology and Head and Neck Surgery, Mayo Hospital, Lahore. All the patients of preauricular sinuses who presented to our department from to are included. The method of sampling is purposive type. The study design is descriptive type. Infection is controlled prior to surgery with appropriate antibiotics. Investigations necessary for anaesthesia were carried out and after informed consent surgery was performed. General anaesthesia was used in all cases. Local infiltration of 2% lignocaine and adrenaline 1 in 160000 around the preauricular sinus is done to provide a bloodless field. An elliptical incision including the sinus opening was used. Magnification with an operating microscope was always used to excise sinus tract and all its ramifications completely (Fig. 2). A wound was closed primary closure after securing the homeostasis. There was no drain used in any patient... Postoperative antibiotics are used and patients were discharged on the fifth day after removal of stitches. All the patients were followed to date.

Nine patients were operated, of which 3 were females (Table I). Eight of them were less than 16 years while one was 68 years old (table II). Sinuses were more common on the left (5 cases) than on the right (3 cases). One patient had bilateral preauricular sinuses (Table III). Eight of our patients were primary preauricular sinus excisions while 1 had had a previous sinus incision and drainage. Sinus tracts were single in 7 patients and multiple in 2. All patients were followed up for a minimum period of 6 months, the longest being 14 months. There are no signs of recurrence in any of the above patients.

Fig. 1

Table I: Sex distribution (n=9)

Sex	Frequency	%age
Male	6	66.7
Female	3	33.3

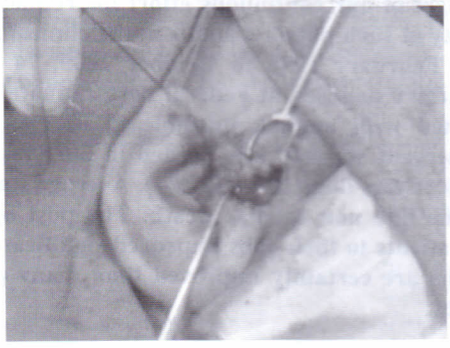
Table II: Age distribution (n=9)

Group	Frequency	%age
<16Years	8	88.9
>16Years	1	11.1

Table III: Site

	Frequency	%age
Right	3	33.3
Left	5	55.6
Bilateral	1	11.1

Fig. 2



Discussion

A preauricular sinus is a common congenital anomaly that does not always cause symptoms. It is defined as a congenital lesion in which a small skin opening located in front of the external ear communicates with a subcutaneous network of cysts. The vast majority is benign in nature and requires no intervention. It may be an inclusion dermoid resulting from epithelium trapped between the developing auricular tubercles or it may be a remnant of first bronchial groove epithelium, which has failed to resort. Sinuses may become infected, most commonly with gram-positive bacteria recurrent infection is a clear indication for excision. Complete excision of the pit and sinus tract provides the only definitive cure, surgery done in the presence of infection results in higher recurrence. Guru and co-workers (1998) have reported a recurrence of 8.22% without any infection as compared to 15.79% in patients with active infection present at surgery[8]. Surgical treatment of preauricular sinus is characterized by high recurrence rates. Recurrence rates ranges from 9% to 42%[7,9,10]. If complete excision of the gland and duct is done, the recurrence rate should be substantially reduced. Meticulous excision by an experienced head and neck surgeon minimizes the risk of recurrence. Recurrence in preauricular sinus can manifest in the form of persistence of sepsis, resurgence of swelling, repeated sinus discharge or recurrence of a preauricular mass. There is higher chances of recurrence in the presence of previous surgery, the use of a probe to delineate the sinus and operating under local anaesthesia[11]. Postoperative wound asepsis is also mandatory to facilitate good healing without recurrence. There is also higher recurrence in patients who developed postoperative wound sepsis. Results are always better in primary preauricular sinus excisions. Magnification employed during surgery, and identifying the branching tracts of the sinus may further minimize the risk of recurrence[12]. Magnification with an operating microscope enables precise dissection without any epithelial breach[13]. With the use of operating microscope, in our series, we have had extremely gratifying results without a single recurrence in any of the nine patients operated so far.

Conclusion

It is concluded that operating microscope is very helpful to minimize the chances of recurrence after surgical excision of preauricular sinus. Surgery should be avoided during incipient infection. Appropriate antibiotics should be administered prior to surgery. During surgery magnification with operating microscope greatly enhanced the identification of the sinus tract and its branches so enables the surgeon to excise the sinus tract completely.

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