

The Preauricular Sinus: A Comparative Study of Simple Sinectomy and Supra-Auricular Approach.

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Conflict of interest: Nil

Abstract

Background: Preauricular sinus usually present unilaterally with a predominance on right sided lesions. However, hereditary lesions show bilaterality and inherited by incomplete autosomal pattern with variable expression and decreased penetrance. Previous studies suggested that the 8q 11.1 –q13.3 chromosomal anomaly for transmission of pre auricular sinus.

Material & Methods: The present cross sectional, prospective study was carried out at department of ENT, at our tertiary care hospital. The study duration was of one year from January 2020 to December 2020. A sample size of 40 was calculated at 90% confidence interval at 10% acceptable margin of error by epi info software version 7.3. In this prospective study patients of age of both the genders were enrolled for the study.

Results: In the present study, out of total study participants Surgical procedures were performed during the period of Vital stability of the patients. Operative procedures were done under General anesthesia (15 patients in group A and 14 patients in group B) and local anesthesia (05 patients in group A and 06 patients in group B). However, this difference was statistically non-significant (P value > 0.05). The pre auricular sinus tract was found within subcutaneous tissue in 10 patients (06 patients in group A and 04 cases in group B). The pre auricular sinus tract was found attached to the auricular cartilage in 30 patients (14 cases in group A and 16 cases in group B). However, this difference was statistically non-significant (P value > 0.05). The overall recurrence among study participants was observed in 2 cases only which were in group A. There was no recurrence noted in group B. This difference was statistically significant (P value < 0.05).

Conclusion: We concluded from the present study that the overall recurrence among study participants was observed in 2 cases only which were in group A. There was no recurrence noted in group B. This difference was statistically significant.

Keywords: Preauricular sinus, simple sinectomy, supra-auricular approach.

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Introduction

Preauricular sinus is a type of congenital anomaly which present at the pre auricular soft tissues. According to Van Heusinger preauricular sinus is formed due to incomplete fusion of six auditory hillocks during the development of the auricle and first described this condition in 1864 [1]. Various studies reported the worldwide prevalence of preauricular sinus is rages from 0.1% to 11% in various countries [2]. Preauricular sinus usually present unilaterally with a predominance on right sided lesions. However, hereditary lesions show bilaterality and inherited by incomplete autosomal pattern with variable expression and decreased penetrance [3]. Previous studies suggested that the 8q 11.1 –q13.3 chromosomal anomaly for transmission of pre auricular sinus.

Preauricular sinus characterized as a small hole or pit close to the anterior margin of ascending part of the helix which is superior to pinna. However, in few cases it is reported be posteriorly situated [4]. Preauricular sinus is located superficial to the temporalis fascia, anatomically lateral and superior to the parotid gland and facial nerve. The tract of periauricular sinus is vary in length and commonly merges with perichondrium of auricular cartilage [5].

Preauricular sinus are usually clinically asymptomatic and onset of symptoms are dependent on infectious process. All the localized symptoms like pain, erythema, local swelling and discharge are the symptoms of infection. Studies reported that to prevent recurrence of preauricular sinus surgery is the best option [6]. Although it was reported that the recurrence rate is high because of incomplete removal. Various factors like surgical technique, ramifications and previous surgery used are responsible for recurrence. Various studies reported that the excision of preauricular sinus has recurrence rate of approximately more than 20% [7]. Various studies have been

conducted compare the surgical procedures to reduce the recurrence rate of pre auricular sinus and surgical outcome. The present study was conducted to comparatively evaluate the surgical outcome of simple sinectomy and supra-auricular approach at tertiary care center.

Materials & methods

The present cross sectional, prospective study was carried out at department of ENT, at our tertiary care hospital. The study duration was of one year from January 2020 to December 2020. A sample size of 40 was calculated at 90% confidence interval at 10% acceptable margin of error by epi info software version 7.3. In this prospective study patients of age of both the genders were enrolled for the study. All patients who were diagnosed with preauricular sinus were enrolled from outdoor department and from ward by simple random sampling. Institutional Ethics Committee Clearance was obtained before start of study and written and informed consent for the procedure was obtained from all the patients. Strict confidentiality was maintained with patient identity and data and not revealed, at any point of time.

Detailed clinical history was taken from all the study participants along with complete otologic, nasal and throat examinations. All study participants were subjected to routine blood investigation. All study participants were divided in two equal groups for simple sinectomy and supra-auricular approach for surgery for preauricular sinus. General anaesthesia was applied for all cases under 18 years of age. Standard operative and postoperative protocol was followed for all the study participants. All the study participants were followed up for 1 year to record for recurrences. Data were entered in the MS office 2010 spread sheet and Epi Info v7. Data analysis was carried out using SPSS v22. Qualitative data was expressed as percentage (%) and Pearson's chi square

test was used to find out statistical differences between the study groups and sensitivity, specificity, positive predictive value and negative predictive value were calculated. If the expected cell count was < 5 in more than 20% of the cells then Fisher's exact test was used. All tests were done at alpha (level significance) of 5%; means a significant association present if p value was less than 0.05 and highly significant if p value less than 0.01.

Results

In the present study, we enrolled 40 patients who were diagnosed with preauricular sinus and attending outpatient department of otorhinolaryngology of our

tertiary care hospital during the study duration. All study participants were divided in two equal groups for simple sinectomy and supra-auricular approach for surgery for preauricular sinus. Out of the total 45% were males and 55% were females. Study participants were aged from 7 years to 24 years of age with the mean age of the Study participants was 12.1±4.8 years. Out of the total study participants majority of them (20%) were in the age group of 10-15 years, which was followed by (30%) patients in the age group of 15-20 years, (20%) patients were in the age group of less than 10 years and (10%) patients were in the age group of more than 20 years of the age. (Table 1)

Table 1: Distribution of study participants according to study parameters.

Parameters	No. of patients
Male	45%
Female	55%
Mean age	12.1±4.8 years
Age group (years)	
<10	20%
10-15	40%
15-20	30%
>20	10%

In the present study, out of total study participants Surgical procedures were performed during the period of Vital stability of the patients. Operative procedure were done under General anesthesia (15 patients in group A and 14 patients in group B) and local anesthesia (05 patients in group A and 06 patients in group B). However, this difference was statistically non-significant (P value > 0.05). The pre auricular sinus tract was found within subcutaneous tissue in 10

patients (06 patients in group A and 04 cases in group B). The pre auricular sinus tract was found attached to the auricular cartilage in 30 patients (14 cases in group A and 16 cases in group B). However, this difference was statistically non-significant (P value > 0.05). The overall recurrence among study participants was observed in 2 cases only which were in group A. There was no recurrence noted in group B. This difference was statistically significant (P value < 0.05). (Table 2)

Table 2: Distribution of study participants according to surgical parameter and outcome.

Study parameters		Simple sinectomy (Group A)	Supra auricular Approach (Group B)	P value
Type of Anaesthesia	General Anaesthesia	15	14	>0.05
	Local Anaesthesia	05	06	
Relation To Auricular Cartilage	Within subcutaneous tissue	06	04	>0.05
	Attached to auricular	14	16	

	Cartilage			
Recurrence rate	Recurrence	2 (10%)	0%	<0.05
	No Recurrence	18 (90%)	20 (100%)	

Discussion

In the present study, we enrolled 40 patients who were diagnosed with preauricular sinus and attending outpatient department of otorhinolaryngology of our tertiary care hospital during the study duration. All study participants were divided in two equal groups for simple sinectomy and supra-auricular approach for surgery for preauricular sinus. Out of the total 45% were males and 55% were females. Study participants were aged from 7 years to 24 years of age with the mean age of the Study participants was 12.1 ± 4.8 years. Out of the total study participants majority of them (20%) were in the age group of 10-15 years, which was followed by (30%) patients in the age group of 15-20 years, (20%) patients were in the age group of less than 10 years and (10%) patients were in the age group of more than 20 years of the age. Similar findings were reported in a study conducted by Chowdary K et al among patients with periauricular sinus and found similar results to present study. They conducted wide local excision by Extended Post auricular incision through the Supra Auricular technique [8]. Similar findings were reported in a study conducted by Scheinfeld N et al among patients with periauricular sinus events and found similar results to present study. They conducted sinectomy by the Supra Auricular approach [9].

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Conclusion

We concluded from the present study that the overall recurrence among study participants was observed in 2 cases only which were in group A. There was no recurrence noted in group B. This difference was statistically significant (P value < 0.05). The results of present study cannot be generalized on general population because of small sample size. Further elaborative studies needed to explore the topic.

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