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A retrospective study of demographic profile of keloid over the pinna in central Karnataka

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ABSTRACT

Background: Unusually higher number of patients was observed to seek medical attention for keloids over the pinna in a geographical area in Central Karnataka. This study was conducted to find the demographic profile of such patients.
Methods: A retrospective observational study was conducted in two tertiary care centres, in which medical case files of all patients with documented diagnosis of keloid over the pinna between January 2013 to October 2017, were reviewed for their demographic profile and clinical presentation.
Results: A total of 482 patients had presented with keloids of pinna in the duration studied. Of these 474 were females and 8 were males, with a mean age of 29 years. The most common age group of patients (37.3%) was 21 to 30 years followed by 31 to 40 years (25.7%). The most common antecedent event to keloid formation was piercing of the helix of the pinna. The commonest location of keloid formation in the pinna was found to be helix of the pinna (92.7%) The mean time interval between the antecedent event and keloid formation was 14 months.
Conclusions: Higher number of patients seeks medical attention for keloid over the pinna in geographical region of central Karnataka. Most of them had undergone ear piercing and had presented in their early adulthood. Ear piercing over the helix of pinna was more commonly associated with keloid formation. Further studies are intended to be done on the etiological factors for higher incidence of keloids and feasible preventive measures.

Keywords: Keloid over the pinna, Ear piercing, Demographic profile, Helix of the pinna

INTRODUCTION

Ear piercing is a widely prevalent custom among ladies in the Indian Subcontinent. Minor complications like allergy, infections following the procedure has been often seen. Most agonising is the formation of keloid with studies claiming a 2.5% risk of development of keloid post ear piercing.[1] Keloids over pinna are also a known complication following minor incisions, drainage of auricular collections, trauma etc.[2] Patients seek medical assistance mostly for cosmetic reasons. Keloids over the pinna can be cosmetically disfiguring especially among young ladies having a psychological impact on them. Keloids are prone for recurrence with need for prolonged treatment. Various treatment options have been tried including surgical excision, steroid injections, radiotherapy etc. with no significant permanent results.[3-5] Studies have claimed genetic predisposition for development of keloids.[6] In our Institution, which is located in the interior parts of Southern India, we have observed an unusually high number of patients seeking medical attention for keloids. This prompted us to further probe into our records and quantify and analyse our observations.

METHODS

This retrospective study was carried out in the departments of otorhinolaryngology of two tertiary care centres located in same town in Central Karnataka in December 2017. Prior Institutional ethical committee approval for the study was obtained. The study included all cases found to be diagnosed as keloid over the pinna in the period from January 2013 to October 2017 based on a departmental patient data register search. After noting the patient identification numbers and diagnoses, the medical records section was requested to provide the detailed medical records/case files of those cases.

The case files were scrutinised for demographic data, clinical presentation, past antecedent event leading to keloid formation and treatment received. Wherever available, clinical photographs in the case files were also examined. Such patients were contacted and their consent was taken to use the clinical photographs of their ear lesions with concealed identities, for publication as part of this study. The data obtained was tabulated in terms of gender, age, antecedent event with time interval for keloid formation.

Patients had undergone various combinations of treatment. Some patients had received intralesional injection of Triamcinolone only, at weekly intervals for 4 weeks, while others underwent excision of keloid under local anaesthesia followed by weekly steroid injection to the excision site after wound healing for 4 weeks. Patients, who had failed to respond to initial weekly intralesional steroid injections, were subjected to excision followed by weekly steroid injections for 4 weeks. The same strength of triamcinolone acetonide (40 mg/ml) had been used in all patients.

RESULTS

A total of 482 number of patients had presented with keloids of pinna in the duration studied. Of these cases, 474 were females and 8 were males. Patients ranged from 6 years to 68 years of age with a mean age of 29 years. Clinical characteristics of cases are depicted in Table 1. A major chunk of the patients (37.3%) were of the age group 21 to 30 years followed by age group 31 to 40 years of age (25.7%). Among 8 male patients, 5 had prior history of trauma to the affected ear and 3 had underwent piercing of the lobule of pinna. Of the females, 442 had undergone ear piercing in the past and the remainder 32 had a history of trauma to the ear. Of the females who had undergone ear piercing, 75% of them had undergone piercing of the helix of pinna in 2nd decade of life or later (>10 years of age). The mean time interval between the antecedent event (ear piercing or trauma) and keloid formation was 14 months with a minimum of 3 months to a maximum of 3 years. Though all these cases had presented with a lump over the pinna, 25.8% of them had complained of intractable itching and pain. The commonest location of keloid formation in the pinna was found to be helix of the pinna (92.7%) (Figure 1 and 2), both in males and females. Keloids of the lobule of pinna accounted for 7.3% of cases. Among our cases, right ear was found to be more frequently affected than left ear by keloid formation. Bilateral involvement was seen in 102 cases (21.2%) (Figure 3).

Figure 1: A large mass over the helix of right pinna in a 21 year old female. Patient sought medical attention due to rapid increase in size of this mass over three months during third trimester of pregnancy. Post excision, the mass was proved to be a keloid on histopathology. This patient had undergone high helical ear piercing six months prior to her initial presentation.

Table 1: Clinical characteristics of cases.

Age group	Number of cases				
	History		Location of keloid		Bilaterality
	Ear Piercing	Trauma	Lobule	Helix	
Below 10 years	2	6	1	7	0
11 to 20 years	76	4	8	72	11
21 to 30years	158	18	10	166	67
31 to 40 years	117	6	9	114	23
41 to 50 years	62	2	7	57	1
Above 50 years	30	1	0	31	0
	445	37	35	447	102

Figure 2: A 24 year old female with history of helical ear piercing one year prior, presented with a lesion over her left pinna in the low helical region, with severe itching. Post excision this lesion was confirmed to be a keloid.

Figure 3: Keloid in the high helical region of the (a) left pinna, in a 31 year old female, who had undergone bilateral helical ear piercing 9 months prior. Also note a smaller lesion over the helix of right pinna (b) in the same patient.

DISCUSSION

In the present study, majority of the cases who had presented with keloids were females in 2nd and 3rd decade of their life. This is similar to a study by Ramakrishnan et al, who found higher incidence of keloid formation in the age group 11 to 30 years.[7] This can be attributed to the apprehension and anxiety over the facial disfigurement caused by keloids that they seek medical attention. Moreover, ear piercing is not common among males and primarily involves lobule piercing. Though as a ritual, ear piercing is done in the lobule of the ear, this was a less frequent location of keloid formation in this study. The commonest location of keloid over the pinna was helix. Piercing of helix of pinna as a fashionable trend is common among adolescents and ladies of the location. Moreover, lobule of pinna is free from cartilage, whereas helix is cartilaginous. As per Staley et al and Bashir et al, cartilaginous areas are more prone for complications compared to soft tissue piercing.[8,9] However, Simplot et al mentioned similar incidence in both.[1] Again bilateral involvement can be explained by bilateral ear piercing custom. Cases with keloids over the lobule had documented history of trauma to the lobule of the pinna.

The mean time interval between antecedent event, ear piercing or trauma, to noticing a lump in the ear, was 14 months. A minimum of 3 months and a maximum time interval of 3 years was observed. A study by Brissett et al had documented a period between 3 months to 1 year for keloid formation following skin trauma.[10] In the present study, the delayed noticing of the lump by the patients was mainly documented among individuals seeking treatment in their 4th decade or later. As they had presented to the Department much later than they had intitially noticed the lumps, the time interval between antecedent event and first noticing the ear lump could have been subject to recall bias among such people. Most of these patients had complained of ear lumps persisting for a decade or more and had sought medical attention only when the lumps were too 'heavy' or 'large' or associated with 'unbearable itching' as documented in their case files (25.8%). In a study by Lee et al, 86% had presented with itching and 46% had presented with pain.[11]

Incidence of keloid formation could not be calculated as no baseline data on total number of ear piercing events was available. There are hardly few studies on incidence and prevalence of keloids post ear piercing. Simplot et al, compared the incidence of complications of cartilage piercing versus soft tissue piercing and found a 2.5% incidence of keloids.[1] Keloid occurrence has also been documented to vary with skin pigmentation. Darker complexion has increased inherent risk as has been seen in Africans as well as dark skinned people in the far west with an incidence as high as 16%.[12-14] Increased risk is also seen in puberty and pregnancy among genetically predisposed.[15]

With this baseline data, further studies will be undertaken to understand the etiology of higher occurrence of keloids in the population specified in the location of this study with regards to genetic predisposition, ear piercing methodology etc.

CONCLUSION

Higher number of patients seeks medical attention for keloid over the pinna in this geographical region of central Karnataka. Most of them had an antecedent event of ear piercing and had presented in their early adulthood. Ear piercing over the helix of pinna was more commonly associated with keloid formation. Further studies are intended to be carried out on the possible etiological

factors for higher incidence of keloids in this region and feasible preventive measures.

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