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REPORT OF A CASE OF AURICULAR KELOID

BİR AURİKÜLER KELOİD OLGUSU SUNUMU

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Abstract

Keloids are benign fibroproliferative growth seen on the skin usually secondary to trauma. They are scar tissues that project above the skin surface and may be tender or pruritic. They cause functional and aesthetic discomfort to the patient. This is a case report of a 34 year old woman who was diagnosed as a case of keloid of the left auricle and treated surgically. Keloids have a high degree of recurrence even after treatment. It is crucial to differentiate keloids from hypertrophic scars and treat them accordingly.

Keywords: *External ear, trauma, hypertrophic scar, keloid*

Öz

Keloidler, genellikle travma sonrası ciltte görülen iyi huylu fibroproliferatif büyümelerdir ve cilt yüzeyinde görülen hassas veya kaşıntılı olabilen skar dokulardır. Hastada, fonksiyonel ve estetik rahatsızlığa neden olurlar. Bu olgu, sol kulak kemiğinde keloid tanısı almış, cerrahi olarak tedavi edilen 34 yaşında bir kadın hastayı tanımlamaktadır. Keloidler, tedavi sonrasında yüksek düzeyde nüks gösterebilmektedir. Kelodileri hipertrofik dokulardan ayırt etmek ve buna uygun olarak tedavi etmek çok önemlidir.

Anahtar kelimler: *Dış kulak, travma, hipertrofik skar, keloid*

Introduction

Keloid was first reported by Noel Retz in 1790 and later described by Jean Louis Alibert in 1826. 'Chele' means crab claw and 'oid' means like in Greek. Keloid is a benign fibroproliferative tumour caused by skin trauma. They are fibrotic lesions that are wound healing aberrations of the dermis. Clinically, they are considered to be dense dermal scar tissue that projects above the surrounding skin and may be tender or pruritic.[1]

Case Report

A 34 year old woman visited the Department of Oral Medicine and Radiology, with a chief complaint of an external growth on the left ear since 4 years. Patient noticed the growth four years ago following a second ear piercing. Ear piercing done previously was uneventful. The growth was small in size and gradually increased to the present size. Patient had no associated pain or pruritis. Patient had an unremarkable medical history and no other systemic complications. Patient had no relevant family history. Patient was moderately built and well-nourished and was well oriented to time, place and date. On clinical examination a well-defined, rounded, dumb bell shaped, sessile growth was seen on the helix of the left ear. The growth was situated in the middle of the helix in line with the tragus which was present medial and lateral to the left ear (Figure1&2). The medial growth was smaller and measured about 0.3 cm in diameter and the lateral growth measured about 1cm in diameter. The growth was slightly hyperpigmented and the superior aspect of the growth showed slight erythema (Figure 3).

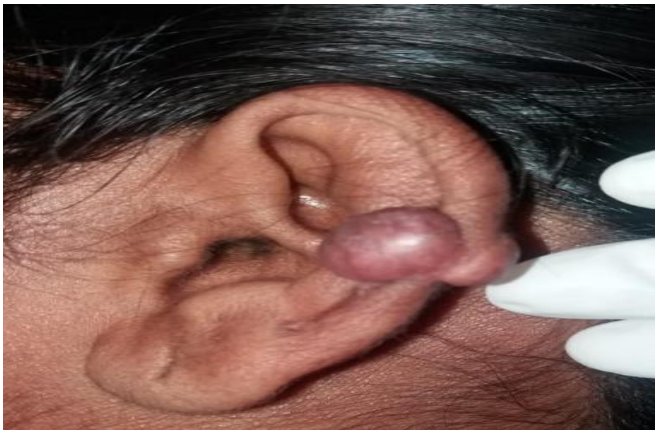

Figure 1. Lateral side of the ear showing keloid

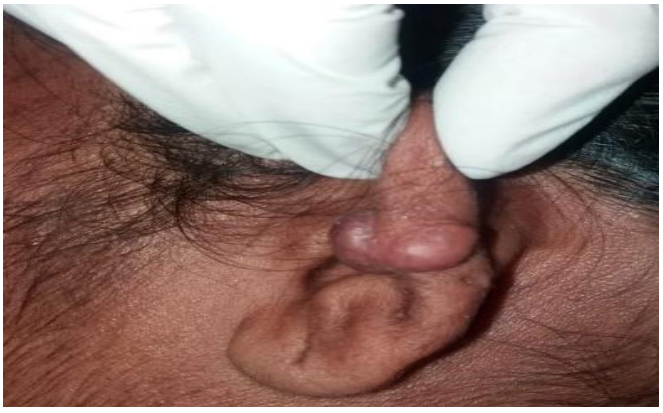

Figure 2. Medial side of the ear showing keloid

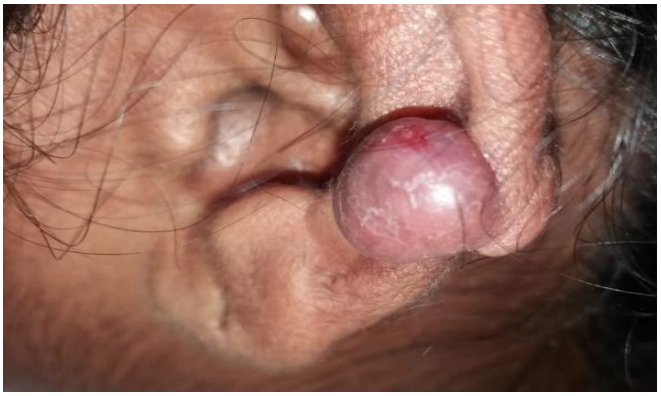

Figure 3. Erythema seen on the superior aspect of the keloid

On Palpation the growth was firm and non-tender. A provisional diagnosis of keloid was made based on the clinical appearance. The growth was excised with patient's consent and sent for histopathological examination. Patient was prescribed Augmentin 625 TDS and Ketofen 100 mg BD for three days. Patient was advised regular follow up every three months for a period of two years. On histopathological examination, sections showed epidermis and dermis. The epidermis consisted of stratified squamous keratinized epithelium of varying thickness. The dermis showed dense bundles of collagen fibres with fibroblasts showing hyalinization (Figure 4). Van Gieson stain showed positivity for collagen fibres in the dermis. Based on the Clinical and histological features a final diagnosis of keloid was made.

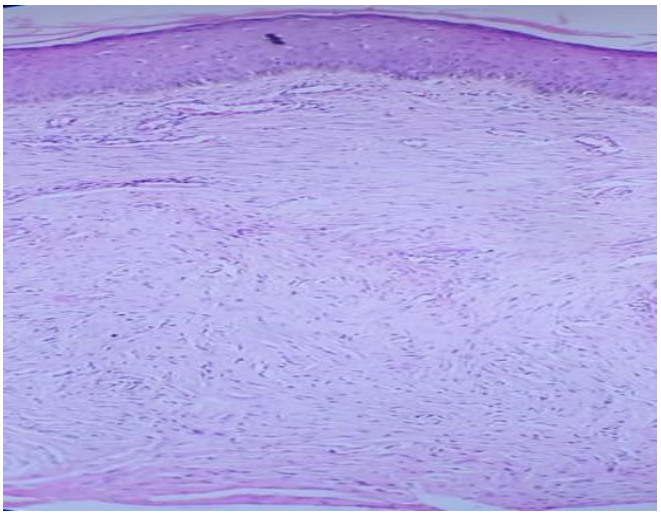

Figure 4. Histopathological section showing haphazardly arranged bundles of collagen fibres and fibroblasts in the dermis

Discussion

The incidence of keloid varies from 4.5 to 16%. The peak incidence of occurrence of keloids varies from 15 to 24 years of age.[2] In our case, a 34 year old female presented with a keloid on the helix of the left ear. Keloid is seen in dark pigmented individuals more commonly of African, Hispanic and Asian descent. Puberty, pregnancy and pituitary gland hyperactivity cycles demonstrate an increased incidence of keloid. Rubenstein-Taybi syndrome and Geominne syndrome are two rare syndromes in which familial keloids have been described.[3]

Skin trauma secondary to surgical wounds, burns, piercing of the body, folliculitis or acne may trigger the formation of keloids. In this case keloid has occurred after ear piercing.

The development of keloids can take 3 months to 1 year after skin trauma.[4] Keloids seen in cases of specific ethnic races, in multiple generations of a family and in various syndromes demonstrate a strong genetic aetiology in the development of keloids.

In normal wound healing cycle, three stages are observed– the phase of inflammation, phase of proliferation or granulation, and the phase of remodelling or maturation. Any disturbance during the remodelling process may result in excess synthesis and deposition of collagen, which may result in the formation of pathological scars. The scar releases factors that enhance fibrogenic growth, like TGF β1 and β2. The reduced levels of matrix metalloproteinases (MMP) contribute to extra cellular matrix (ECM) accumulation. Th-1 causes fibrosis of the tissue while Th-2 aids in fibrogenesis. Developing a Th-2 response induces fibrogenesis and tissue fibrosis attenuated by the predominance of Th-1. Keloids scar tissues show a longer period of inflammation which may lead to the extension of the keloid beyond the borders of the wound.[5]

The keloid scar extends beyond the borders of the initial cut, unlike the hypertrophic scar which stays within the original scar boundary, even if it continues to rise. Keloid scars appear as firm nodules and usually do not regress spontaneously. Patients often complain of pruritus and pain. In Caucasian patients, the keloid scars are erythematous and telangiectatic, while in dark skinned patients, they are hyperpigmented. In our case the growth was firm, non-tender and slightly hyperpigmented. Keloids have specific area predilections in the body which include earlobes after piercing, sternum region after sternotomy, cheeks with acne, shoulders and upper arms after vaccinations. Our patient presented with a dumb bell shaped keloid in the helix of the left ear. Keloids don't collapse naturally and may even keep growing overtime.[4] A keloid shows dense fibrous growth at a previous site of trauma. They are elevated, solid or protuberant lesions. Keloids may appear erythematous to violaceous to brown in colour. Telangiectasia or ulceration may also be seen on the surface of the lesion. Pruritis at the edges of the lesion and pain at the centre of the lesion are commonly reported symptoms.[2] Our patient did not present with any pain or pruritis. Other significant sequelae are restriction of movement or other limitation of function and cosmetic disfigurement. Existing studies have shown evidence of adverse psychosocial effect of keloids on patients.[6]

Hypertrophic scar is the most common differential diagnosis to be considered in case of keloid. Other lesions to be considered include dermatofibroma, dermatofibrosarcoma protruberans, trichilemmal carcinoma, keloidal basal cell carcinoma, apocrine cystadenoma, adult onset juvenile xanthogranuloma, mixed tumor and chronic folliculitis.[7]

Butler et al. described four histological characteristics that are peculiar to keloids: (1) haphazardly arranged bright broad eosinophilic collagen; (2) an advancing edge beneath the epidermis and papillary dermis that resembles a tongue in shape; (3) reticular dermis showing cellular fibrous bands arranged horizontally; (4) fibrous bands that resemble fascia. Keloids show dense haphazardly arranged collagen bundles in an amorphous ground substance with relatively few fibroblasts. Hypertrophic scars show bundles of collagen arranged parallel to the epidermis. High density fibroblast and collagen nodules are seen in hypertrophic scars whereas they are absent in keloids. The presence of small blood vessels that tend to develop in keloids just below the epidermis is noted. In keloids, a moderate degree of perivascular chronic inflammatory infiltrate demonstrating higher percentage of mast cells compared to that of hypertrophic scars is seen.[8]

Keloid collagen demonstrated positivity in 33.3% for α-SMA expressing myofibroblasts. Such myofibroblasts are absent in hypertrophic scars. Immuno histochemical investigations showed a high amount of CD3 +, CD4 +, CD 45 activated immune cells. A higher ratio of CD4+, CD8+ cells was seen in keloids. Keloid formation is due to the imbalance of the mast cells in the inflammatory cell population.[9] Electron microscopic studies showed well-developed, rough endoplasmic reticulum in keloid fibroblasts. The collagen fibrils are banded into thick fibres separated by amorphous material which is not seen hypertrophic scars.[10]

Various modalities of treatment have been used to manage keloids which include surgical excision, intralesional corticosteroid injections, silicone gel sheeting, cryotherapy, pressure therapy, radiotherapy, therapy with anti-tumour or immunosuppressive drugs. Since simple excision has a high recurrence rate, multi modal treatment options have a higher success rate.[4]

Conclusion

The main consideration in management of keloids is the associated risk factors like – recurrent keloids, any familial history of keloids, tension at site of trauma and dark skin. Clinicians should be aware and advice patients about the risk involved in body piercings or any elective cosmetic surgeries. All keloid or keloid like lesions should always be sent for biopsies to evaluate for any malignant transformations. Clinicians should opt for a multidisciplinary approach to improve the functional, aesthetic and psychological concerns of the patient.

References

1. Sand M, Sand D, Thrandorf C, et al. Cutaneous lesions of the nose. *Head Face Med*. 2010; 6 -7. doi:10.1186/1746-160X-6-7
2. Trace AP, Enos CW, Mantel A, Harvey VM. Keloids and hypertrophic scars: a spectrum of clinical challenges. *Am J Clin Dermatol*. 2016;17:201–223. doi: 10.1007/s40257-016-0175-7
3. Robles DT, Berg D. Abnormal wound healing: keloids. *Clin Dermatol.* 2007; 25(1):26-32. DOI: 10.1016/j.clindermatol.2006.09.009
4. Sobec R, Dobreanu C, Fodor L, Şomcutean A, Ţichil I, Cosgarea M. Ear keloids: a review and update of treatment options. *Clujul Med*. 2013; 86 (4): 313.
5. Gauglitz GG. Management of keloids and hypertrophic scars current and emerging options. *Clin CosmetInvestig Dermatol*. 2013; 6:103-114. doi: 10.2147/CCID.S35252
6. Amaral CSF do, March M de FBP, Sant'Anna CC. Quality of life in children and teenagers with atopic dermatitis. *An Bras Dermatol.* 2012;87(5):717–23.
7. Ogawa R, Akaishi S, Hyakusoku H. Differential and exclusive diagnosis of diseases that resemble keloids and hypertrophic scars. *Ann Plast Surg*. 2009 Jun;62(6):660-664. doi: 10.1097/SAP.0b013e31817e9d67.
8. Butler PD, Longaker MT, Yang GP. Current progress in keloid research and treatment. *J Am Coll Surg.* 2008;206(4):731–41. DOI: 10.1016/j.jamcollsurg.2007.12.001
9. Moshref SS, Mufti ST. Keloid and hypertrophic scars: comparative histopathological and immunohistochemical study. *Med Sci*. 2010;17:3 22. DOI: 10.4197/Med. 17-3.1

10. Ehrlich HP, Desmoulière A, Diegelmann RF, et al. Morphological and immunochemical differences between keloid and hypertrophic scar. *Am J Pathol*. 1994;145:105 113.