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A case of huge keloid at the cheek

Yanakta dev keloid olgusu

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Öz

Keloid ve hipertrofik skar dokuları, sıklıkla ciltte yara iyilesmesini takiben gelişen ve nedeninin çoğu kez bilinmediği aşırı kollajen doku formasyonudur. Bu dokular, sıklıkla piercing, travma, yanık gibi olayları takiben normal doku-yara sınırında olusur, spontan gerileme göstermez ve eksizyon sonrası tekrarlama oranı yüksektir. Tedaviye yönelik hem cerrahi hem de cerrahi olmayan teknikler uygulanabilir. Tedavi etkinliğini ortaya koymak için en az bir yıl takip gerekir. Yanakta kitle nedeniyle opere edilen hasta takibe alındı. Lokalizasyonu ve görünümü ile ilginç bulunan olgu tedavi açısından literatür eşliğinde sunulmuştur.

Anahtar kelimeler: Keloid, yanak, kollagen, hipertrofik skar dokusu

Abstract

Keloids and hypertrophic scar tissues result from excessive collagen deposition. The cause of deposition is not known yet, and it usually develops after healing of a skin injury. These tissues are frequently formed at the border of normal tissue and wound after traumas like piercing, burning, etc. They usually do not regress spontaneously and tend to recur after excision. Treatment methods of keloids include both surgical and nonsurgical methods. At least one year follow-up period is necessary to fully evaluate the effectiveness of therapy. The patient underwent surgery on his cheek mass was followed. This case is presented for its interesting appearance and location with a literature review.

Keywords: Keloid, cheek, collagen, hypertrophic scar tissue

Introduction

Keloid is an excessive fibrous tissue proliferation following wound healing and its reason usually can not be identified. Keloid is a recurrent lesion and generally doesn't regress spontaneously. Therefore to prevent the development is more important than cure. In treatment; covering dressing, compression, intralesional corticosteroid, cryotherapy, excision, radiotherapy, laser therapy, and interferon treatment can be used (1,2). Hypertrophic scar and keloid are variations of typical wound healing. A typical wound heals in 6-8 weeks according to the balance between anabolic and catabolic processes. At that level the strength of wound tissue is about 30-40% of normal tissue. During maturation of the scar, the tension strength of the scar results from the crosslinking of collagen fibers. At that point the scar is usually hyperemic. In time it becomes a white, flat and mature scar. During the healing period it can be an imbalance between anabolic and catabolic processes. If more collagens are synthesized, scar tissue begins to develop in every directions, passes over the skin level, and becomes hyperemic again. This tissue is called as keloid or hypertrophic scar (1,2,3). We reported a case operated due to a giant keloid on her cheek and followed during one year.

Case Report

During a health screening in Mauritania a 38-year-old female patient was detected with a mass on her right cheek about 7 years. The patient was living in a socia-economically poor area and she had a wound in her cheek 8 years ago and it began to grow in time. In clinical examination we detected a painless, mobile, 7x6 cm sized mass with medium hardness at right angulus mandibula level and it was covered with a normal black skin (Figure 1). The mass had a smooth surface and a wide stalk. The mass was excised surgically and antibyotherapy and dressing was applied in postoperative period (Figure 2). In one year postoperative observation it was not seen any recurrence.

Figure 1. The mass sized 7x6 cm with medium hardness at right angulus mandibula level and covered with a normal black skin

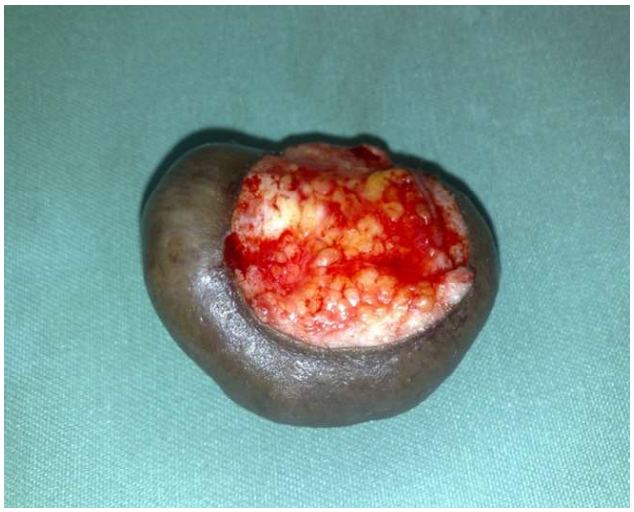

Figure 2. The picture of the mass excised surgically

Discussion

Distinctively from normal skin, it contains high vascularity, high mesenchymal cell density and dense epidermal layer of cells. It is difficult to distinguish hypertrophic scar and keloid from each other in the early phase of formation. Mature lesions are easier to differentiate clinically. It is important in terms of histological differentiation that the keloid has large, dead and aggregated collagenous tissue but the hypertrophic scar doesn't (4). Histologically keloids and hypertrophic scars are seperated from normal scar tissue as considering high vascularization, high mesenchymal cell density, inflammatory cell infiltration and thickened epidermal cell layer. There are activated fibroblast types in both types, but those seen in keloid lesions are more inactive. Vascular structures are similar in keloids and hypertrophic scars. They contain a lot of occluded small vessels. Differential histological finding is the large, eosinophilic hyaline-like collagen fibers that are specific only to keloids and not found in the hypertrophic scars. This is also known with the name of keloidal collagen. However, it is not always possible to see this definitive histological finding. Keloidal collagen can only be detected in 55% of the keloids (5). Keloid tissue can be a discomfort reason cosmetically. Generally, there is no mortality, but placement of some keloids can cause contractures in the joints and may increase morbidity leading movement disorders. Keloids and hypertrophic scars can be painful or pruritic (1,4). Physical (earrings and piercing applications) and also pathological (acne… etc) traumas are defined as the primary reasons at keloid formation (1,2,3). Incidence is more in whites than in blacks. It is rarely seen in albinos. It is more common in younger age group and in women than in men due to the wide using of earrings. However it is approximately equal in other age groups (2,4). Preliminary of keloids are common in 10-30 ages. Keloid formation is reduced in advanced ages. But the increase of the procedure such as coronary by-pass etc. can cause the formation of presternal keloids in older ages. Keloids in ear, neck and abdomen are accompanied with pedicles. Whereas, the keloids in the chest and extremities are disposed to grow superficially. The lesions do not contain skin appendages like hair follicles (4). In Caucasians, keloids are seen in face (especially in chin and ear lobe), upper extemities, presternal area, lower extremities and abdomen with a descending order. In black race, keloids are seen in earlobe, face, neck, lower extremity, chest and abdomen with a descending order (4). There is not an effective treatment method which can be used alone for keloids. Location, hugeness, depth, lesion size, duration are important to determine the treatment type. Both surgical and non-surgical methods can be used separately or in combination (6,7).

It is essential to prevent the development of keloids before the treatment. Fundamentally, it is very important to behold the surgical techniques, suture all surgical wounds with minimal tension, pay attention for the incision not to exceed the joint intervals, follow the skin folds in chest incisions as much as possible. Covering bandages, compression, intralesional steroids and interferon application, radiotherapy and laser treatment can be regarded among the medical treatment methods of keloid and hypertrophic scars (1,2).

Covering bandages (dressing); It is used by covering the scar with a silicone gel dressing. Antikeloidal effect depends on the spreading and hydration combination (1,4).

Compression; The decreasing adhesivity of collagen fibers has been shown with an electron microscopy in compression applied tissues. In a study, it was reported that the button compression (sandwich shaped button application to the earlobe after excision) has been shown to be prevent the recurrence for 8 months to 4 years (1,4).

Corticotherapy; It precludes the collagen synthesis, glycosaminoglycan synthesis, inflammatory mediator production and excessive scar formation as reducing fibroblast proliferation. Triamcinolone acetonide (TAC) as a common steroid is applied 10-40 mg/ml intralesionally for 4-6 weeks. Effective response proportion to the treatment varies between 50-100% and recurrence changes between 9-50%. Recurrence is less than 50% with intralesional TAC application postoperatively after excision (4,8,9).

Radiotherapy; Using in keloid treatment is controversial. Despite the studies that has signified the efficacy and capacity to reduce the recurrence, safety is still speculative. In a retrospective study, recurrence was reported as 53% after the superficial X-ray application in 24 cases who had surgery before. Postoperative recurrence in patients who underwent interstisial radiation with Iridium 192 was found as 21%. The minimum dose should be 12 Gy after the excisional

surgery (4,8). Intralesional interferon implementation; Interferon (IF) gamma is a lymphokine that suppresses the collagen synthesis in vitro and in vivo. IF alpha, beta and gamma were shown to reduce the production of collagen I, III and IV. IF gamma can safely be used 0.05 mg every week up to 10 weeks intralesionally. Common side effect is the headache (7). Surgical treatments can be used alone or combined with the adjuvant therapies. Cryosurgery; Liquid nitrogen application leads to the formation of intracellular crystals, cell damage and anoxia of tissues by disrupting the micro-vascularity. Treatment requires 20-30 days reiteration. Nitrogen application should be kept short because of the possibility of depigmentation.

Excision; recurrence rate is reported lower when used combined with other non-surgical methods (2). Low recurrence after excision depends on the factors such as asepsis, nontraumatic technique, low tension of wounds, correct determining limits of wounds and good hemostasis (1,4). Different techniques have been reported for excision. One of these is the core excision of keloids. The authohors, core excision may be a new method that does not require adjuvant therapy (3). Another technique is the keloid filled flap. In this technique, the skin above the keloid mass is dissected and separated and the mass is completely removed. The flap is closed with 6-0 nylon suture. The patients were chased without giving adjuvant treatments. It is evaluated as a technique that will be developed due to the low recurrence rates (2).

Laser therapy; It facilitates a nontraumatic surgery without blood with cauterization and give a chance to the ablation of the keloid tissue with a carbondioxide laser. While the recurrence were 39-92% after the laser application alone, after the combination with steroid therapy; relapse was found as 25-74% and recurrence has been found 45-93% with the Argon laser utilization (1-4). At least, one year follow up is necessary to assess the full effectiveness of the keloid that has a very low rate of spontaneous regression and has a very high rate of recurrence after treatment period. The support with protection from infection and steroid therapies are as necessary as the excision for the patient who was operated for the formation of keloid at cheek.

In histological examination; epidermis became flattened and rete ridges were lost. Under epithelia, collagen tissue was thickened, formed nodular structure and eosinophilic stained whorled bundles. In between fibrotic collagen fibers were found (Figure 3-a). In Masson trichrome staining collagen and fibrous tissue were blue-green in color (Figure 3-b).

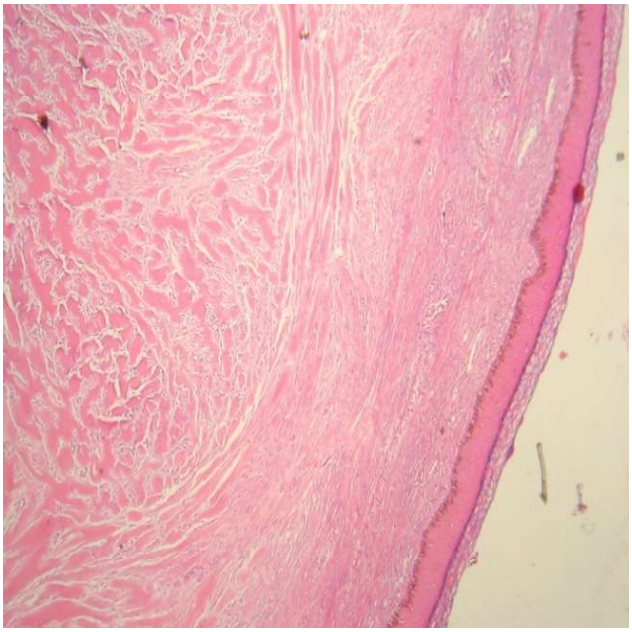

Figure 3-a. Histologically fibrotic collagen fibers were seen.

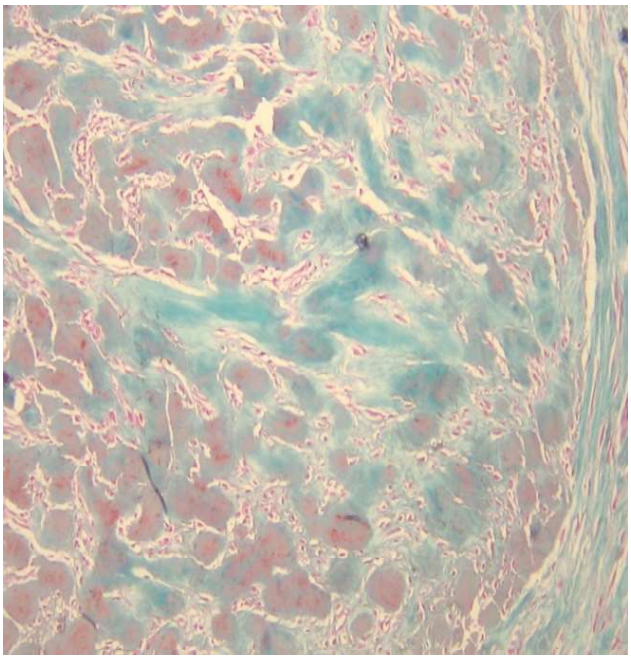

Figure 3-b. Masson trichrome staining collagen and fibrous tissue were blue-green in color

In approach it is important; to avoid surgical procedures that may result in keloid formation, to inform patients about piercings and earrings that may cause keloid formation, to treat keloid with minimal traumatic procedures and to inform the patient about high recurrence risk of keloid.

References

1. Burrows NP, Covell CR. Disorders of connective tissue: Keloids and hypertrophic scars. In: Burns T, Breathnach S, Cox N, Griffiths C, eds. Rook's Textbook of Dermatology, seventh ed. Oxford: Blackwell Publishing; 2004: 54-57.
2. Stern JC, Lucente FE. Carbondioxide laser excision of earlobe keloids. A retrospective study.Arch Otolaryngol Head Neck Surg. 1989;115:1107-11.
3. Lee Y, Minn K, Baek R, Hong J. A new surgical treatment of keloid: keloid core excision.Ann Plastic Reconstrc Surg. 2001;46:135-40.
4. Larrabee WF, East CA, Jaffe HS, Stephenson C, Peterson KE. Intralesioner interferon gamma treatment for keloids and hypertrophic scars. Arch Otolaryngol Head Neck Surg. 1990;116:1159-62.
5. Kim D, Kim E, Eo S, Kim K, Lee S, Bek H. A surgical approach for earlobe keloid; keloid filled flap. Plastic Reconstrc Surg. 2004;113:166-74.
6. Lindsey WH, Davis PT. Facial keloids. A 15 year experience. Arch Otolaryngol Head Neck Surg. 1997;123:397-400.
7. Atiyeh B, Costagliola M, Hayek N. Keloid or hypertrophic scar the controversy: Review of the literature. Annals of Plastic surgery 2005;54(6):676-80.
8. Shea R, Prieto VG. Fibrous lesions of dermis and soft tissue: Hypertrophic scars and keloids. In: Freedberg IM, Eisen AZ, Wolf K, Austen KF, Goldsmith LA, Katz SI, eds. Fitzpatrick's Dermatology in General Medicine, sixth ed. New York: McGraw-Hill Co.; 2003:998-1001.
9. Stucker FJ, Shaw GY. An approach to management of keloids. Arch Otolaryngol Head Neck Surg. 1992;118:63–67.