OLGU SUNUMU CASE REPORT

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Seborrheic Keratosis Over Graft Site in a Young Male

Genç Bir Erkekte Greft Bölgesinde Seboreik Keratoz

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ABSTRACT Seborrheic keratosis are common, benign epidermal tumours that present as asymptomatic, pigmented papules with a stuck-on appearance. Stucco keratosis is a type of seborrheic keraosis which has a scaly verrucous surface and can be scrapped off by scratching. Seborrheic keratosis is usually associated with advancing age and ultraviolet light exposure. Herein, we describe a case of stucco keratosis present only over the full thickness skin graft site in a young male. The tumours developed soon after skin grafting was done for a defect produced after a road traffic accident. Skin grafts are associated with skin barrier dysfunction and lymphatic compromise which may produce immunocompromised cutaneous districts and lead to seborrheic keratosis.

Keywords: Keratosis, seborrheic; skin transplantation; skin tumour

ÖZET Seboreik keratoz, asemptomatik, yapışık görünümlü pigmentli papüller olarak ortaya çıkan, yaygın ve benign epidermal tümörlerdir. Stukko keratoz, pullu verrüköz bir yüzeye sahip olan ve kaşımayla sıyrılabilen bir seboreik keratoz türüdür. Seboreik keratoz, genellikle ilerlemiş yaş ve ultra viyole ışığa maruz kalmayla ilgilidir. Burada, genç bir erkekte sadece tam kalınlıktaki deri grefti bölgesinde mevcut olan bir stukko keratoz vakası tanımlanmıştır. Bir trafik kazası sonrası oluşan bir defekt için deri grefti yapılmasının ardından kısa bir süre sonra tümörler gelişmiştir. Deri greftleri, bağışıklığı baskılanmış kutanöz bölgeler meydana getirebilen ve seboreik keratoza yol açabilen cilt bariyeri disfonksiyonu ve lenfatik sistem bozukluğu ile ilişkilidir.

Anahtar Kelimeler: Keratoz, seboreik; deri transplantasyonu; deri tümörü

Seborrheic keratoses (SK) are common, benign epidermal tumours characterised by proliferation of immature keratinocytes. They usually develop after the age of 50 years with ageing and cumulative UV exposure being the most common predisposing factors.[1] SK can be of various types such as dermatosis papulose nigra, stucco keratosis, melanoacanthoma, irritated SK etc. Stucco keratosis is a type of SK which usually presents over the dorsum of hands and feet and can be characteristically scrapped off. We present a case of multiple stucco SK exclusively at the site of skin graft in a 20 years old male being treated for non-union fracture of both bones of the right leg.

CASE REPORT

A 20-years-old male was referred from orthopaedics department for complaints of multiple warty lesions over the skin graft site present on the right leg for 2 years. The patient informed that the lesions were asymptomatic and could easily be scraped off. There was no history of itching or crusting. The patient had suffered a road traffic accident 2.5 years back which led to open fracture of both bones of the right leg. He was managed conservatively for 3 months followed by external fixation and the skin defect was covered with a full thickness skin graft taken from left forearm.

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On examination, multiple well-defined brownish papules with verrucous surface and overlying black dots were present discretely over the grafted skin on the dorsal aspect of right leg (Figure 1). The grafted skin was apparently normal with normal sensations. Linear atrophic scars were seen near the graft site. Rest of the cutaneous examination revealed no abnormality. Differential diagnosis that were considered were stucco keratosis, verruca, tuberculosis verrucose cutis and chromoblastomycosis.

Histopathological examination of papules revealed keratinized stratified squamous epithelium with hyperkeratosis, anastomosing strands of basaloid cells and increased pigmentation with sub-epithelium showing mild chronic inflammatory infiltrate (Figure 2a). Pseudo-horn cysts were sparsely present (Figure 2b). A diagnosis of reticulated type of stucco keratosis was made. Patient was successfully treated with electrocautery of the lesions.

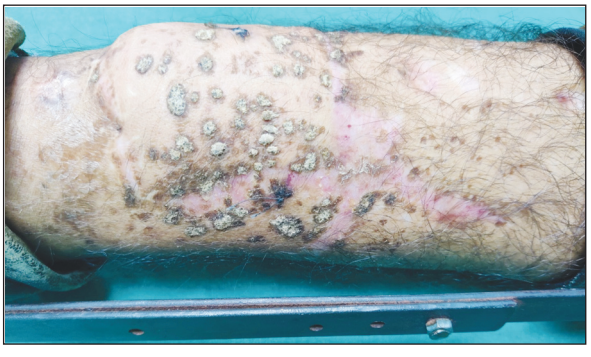

FIGURE 1: Multiple well defined brown coloured papules with verrucous surface over the grafted skin on the dorsal aspect of right leg.

An informed consent form was obtained from the patient.

DISCUSSION

SK are one of the most common skin tumours encountered in clinical practice and teledermatology consultations.[2] They present clinically as solitary or multiple, round to oval, yellowish brown to black papules with a stuck-on appearance. They are usually seen on head and neck area, extremities or any other hair bearing area but spare the mucosae and palms and soles. Stucco keratosis is one of the variants of SK being unique in the fact that it can easily be removed by scratching.

Though the exact etiopathogenesis of SK is not known, age and sun exposure are considered to be the most important risk factors. Though younger people can have occasional SK, its prevalence and number is associated with age.[3] Ultraviolet light exposed skin and ageing are typically associated with higher levels of amyloid precursor protein. This protein is a marker of chronic inflammation in keratinocytes and has been seen in age-related Alzheimer's disease.[4] Up-regulation of immune factors such as endothelin-1 (EDN-1) and tumour necrosis factor alpha have also been recently described in the pathogenesis.[1] High levels of tumour necrosis factor alpha causes increased levels of EDN-1 in the lesional skin, which is

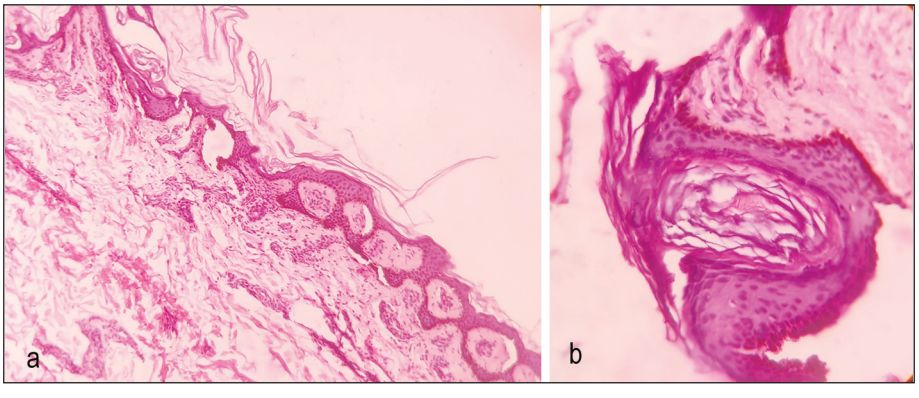

FIGURE 2: a) Mild hyperkeratosis, acanthosis, papillomatosis with anastomosing strands of basaloid cells in epidermis and mild chronic inflammatory infiltrate in the dermis. (H&E, x10); **b)** Pseudo horn cyst seen in the section (H&E, x400).

a strong keratinocyte derived mitogen and enhances melanin production. This may be responsible for pigmentation in SK. These tumours have also been associated with smoking in a Chinese study.[5]

Grafted skin exhibits impaired skin barrier, increased trans-epidermal water loss and sectoral immune dysfunction, which may lead to a state of chronic inflammation at the site of skin graft as seen in ageing skin or with ultraviolet light exposure. Further, the lymphatic compromise at the site of graft in conjunction with the dysregulated immune response may produce an immunocompromised cutaneous district predisposing the grafted skin to the development of inflammatory and neoplastic diseases.[6] These factors may have contributed to occurrence of SK at the graft site in our patient.

The histopathology of SK shows great variability. The commonest type of the disease is the hyperkeratotic type, which shows mild hyperkeratosis, acanthosis and papillomatosis. Numerous pseudohorn cysts are seen, which appear so due to the cross-sectioning of horny invaginations. The reticular or adenoid type of SK seen in our patient shows mild hyperkeratosis and papillomatosis with a thin, double row of reticular acanthosis. Horn pearls are uncommonly seen.[4] This variety is classically seen over sun exposed areas of the body.

Treatment options are variable and include cryosurgery, electrodessication, shave excision, curettage, laser ablation and application of chemicals such as hydrogen peroxide, trichloroacetic acid, tazarotene, imiquimod, dobesilate, calcitriol and diclofenac gel.[7]

There have been case reports of SK developing at the site of inflammatory skin diseases such as pityriasis rubra pilaris and generalized eczematous dermatitis.[8] However, development at the site of skin graft or surgery is very rare. Satterfield and Haas described the development of eruptive confluent SKs in a 63 year old lady at the site of full thickness skin graft placed after surgery for melanoma at the left lower eyelid.[9] They hypothesized that growth factors induced by the healing graft site stimulated the appearance of SKs. Another report from Korea described the development of irritated SK at the incision site of previous lacrimal surgery in an 83-year-old female.[10] Epidermal growth factor was hypothesized to be responsible for the lesion.

The occurrence of SK exclusively at the site of skin grafting in our patient provides an insight into the pathophysiology of skin grafts and SK and their relationship with skin ageing, inflammation and immune dysregulation. More studies on the subject are needed to uncover this relationship.

Source of Finance

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Muhammad Adıl;* ***Design:*** *Saima Naaz, Mohammad Adıl, Suhailur Rehman;* ***Control/Supervision:*** *Mohammad Adıl, Syed Suhail Amin;* ***Data Collection and/or Processing:*** *Saima Naaz, Mohammad Adıl, Syed Suhail Amin, Suhailur Rehman;* ***Analysis and/or Interpretation:*** *Saima Naaz, Mohammad Adıl, Syed Suhail Amin, Suhailur Rehman;* ***Literature Review:*** *Saima Naaz, Mohammad Adıl;* ***Writing the Article:*** *Saima Naaz, Mohammad Adıl, Suhailur Rehman;* ***Critical Review:*** *Saima Naaz, Mohammad Adıl, Syed Suhail Amin;* ***References and Fundings:*** *Syed Suhail Amin;* ***Materials:*** *Muhammad Adıl.*

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