



SUBUNGUAL SQUAMOUS CELL CARCINOMA – A RARE CASE REPORT

Plastic Surgery

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ABSTRACT

Squamous cell carcinoma of the nail bed is rare and commonly diagnosed late as it looks like other more common benign lesions, such as fungal infection, onychomycosis, or viral wart. Presentation is not specific and diagnosis rests on biopsy of the lesion. This condition can be easily misdiagnosed, especially if there is preceding trauma. Here we present an elderly male who came to us with complaints of pain over right thumb since last 2 months with no history of trauma but history of nail biting is present. Biopsy revealed squamous cell carcinoma. We proceeded with amputation of the distal phalanx following which his post-operative period was uneventful. Subungual squamous cell carcinoma though rare should be considered in lesions around the nail that fail to resolve after adequate conservative management.

KEYWORDS

Rare, Squamous cell carcinoma, Nail bed, Surgery

Introduction

Squamous celled epithelioma also called squamous cell carcinoma (SCC) of the nail bed or sulcus is a well-known but rare, first recorded by Sigel in 1937, Bunnell in 1944 and Willis in 1948.[1] Some literature described its first reported cases by Velpeau in 1850.[2] Till 1948, some fifteen cases involving the hand have been recorded in the literature, mostly in men over the age of sixty years.[1] About 150 cases have been reported in the literature.[2,3] Although SCC of the nail bed is a rare disease, it is the most commonly observed malignant subungual tumor. It usually involves the thumb, the index finger and only rarely, the toes.[3] Subungual SCC runs an indolent course and may present with minimal symptoms.[4] Diagnostic confusion emerges because many chronic lesions of the nail bed may be clinically similar to SCC such as verruca vulgaris, onychomycosis, pyogenic granuloma, nail dystrophy, exostosis, chronic paronychia, psoriasis, melanoma and keratoacanthoma.[3,5] The etiology for lesions in the nail bed remains unknown but most likely due to repetitive trauma and chronic inflammations and infections particularly associated with human papilloma virus (HPV), especially type 16.[6] Other possible causes include chronic trauma, chronic inflammation, exposure to ionizing and/or solar radiation and arsenic. Although SCC of the nail bed is considered a low-grade malignancy, bone invasion and metastasis to the regional lymph nodes may occur. Fatal dissemination is only very occasionally reported.[3]

Case Report

A 72 year old male presented to us with pain over the nail of the right thumb for the past 2 months. There is no history of external trauma but the patient bites his nails on a regular basis. There is no history of discharge, bleeding or any ulceration. He was treated by a dermatologist for paronychia in the recent past. He is a known case of cardiac illness for which a pacemaker was placed in 2010. On examination, there was no obvious deformity of the nail plate but he had severe pin point tenderness over the subungual region of the right thumb. A provisional diagnosis of glomus tumour was made. X-ray showed no abnormality. (Fig. 1)



Fig. 1 – Plain radiograph of the right hand showing no abnormality. Since he had a pacemaker, MRI could not be done. We proceeded to explore surgically. Under local anaesthesia and tourniquet control, the nail plate was lifted off. The area of tenderness showed a firm 5mm nodule with unhealthy nail bed tissue which was excised till the bone and sent for histopathology. (Fig. 2)



Fig. 2 – Subungual region of right thumb showing unhealthy nail bed tissue. The nail plate was repositioned with 3-0 nylon sutures and a compression dressing was applied. Microscopic examination showed tissue lined by stratified squamous epithelium exhibiting full thickness dysplasia with an infiltrating neoplasm composed of highly pleomorphic cells in sheets. The cells have abundant eosinophilic cytoplasm and pleomorphic vesicular nuclei with prominent nucleoli. Bizarre cells, areas of necrosis and mixed inflammatory cell infiltrates

were also seen, suggestive of a moderately differentiated squamous cell carcinoma. (Fig. 3,4)

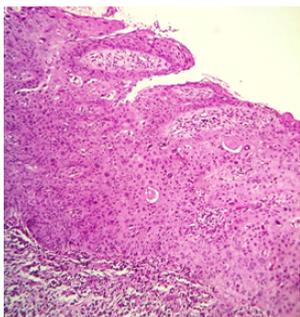


Fig. 3 - The epithelial lining shows full thickness dysplasia (H&E, 10 X)

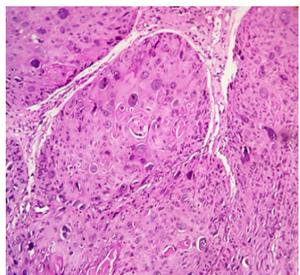


Fig. 4 - Section shows nests of polygonal cells with pleomorphic vesicular nuclei and abundant eosinophilic cytoplasm (H&E, 10X)

With the histopathology report, we proceeded to do amputation of the distal phalanx of the right thumb at the interphalangeal joint level and closed the wound primarily. (Fig. 5)



Fig. 5 – Post-amputation picture

Discussion

Squamous cell carcinoma of the nail bed was first described in 1850 by Velpeau.[7] The actual incidence is not known but the common age of occurrence appears to be in the 5th decade. The aetiology is not known but a few possible causes that have been suggested are chronic infections, radiation exposure, human papillomavirus (HPV), burn scars, chronic exposure to sun and chronic dermatitis have been implicated.[8] Squamous cell carcinoma arising from a psoriatic nail bed has been reported.[9] A few authors have reported crush injury, fishbone penetration and paper staple puncture as the cause of trauma preceding subungual squamous cell carcinoma.[10] Squamous cell carcinoma of the nail bed can have varied clinical presentations, resembling chronic paronychia, verruca vulgaris, pyogenic granuloma, ulcerative lesion or present as a small swelling. Most of the reported cases involve the thumb. Differential diagnoses include delayed healing of traumatic wound, chronic nail biting, paronychia and fungal infections. Others include pyogenic granuloma, verrucous carcinoma, subungual metastasis, acral amelanotic melanoma, verrucae vulgaris, subungual keratoacanthoma. Verrucous carcinoma is rare-it usually occurs in the 6th decade of life and it presents as a slow-growing, fungating, recalcitrant and exophytic mass.[11] Subungual keratoacanthoma is a rapidly growing tumor, which presents as a rapidly growing painful mass. X-rays show a lytic, cup-shaped erosion of the distal phalanx. Healing occurs rapidly. A plain X-ray therefore is useful to determine if there is bone involvement. A biopsy often clinches the diagnosis. The treatment of squamous cell carcinoma of the nail bed depends on the extent of the tumor[12]. Moh's micrographic surgery has been used in the early stage of the disease to minimize tissue loss.[13] For lesions with no bone involvement, wide local excision with no less than 4 mm of normal

tissue from the margins of the tumor should be done along with reconstruction of the remaining digit. Reconstruction can be done with full-thickness skin graft or local flaps. Among the local flaps that have been described are a dorsal V-Y flap, a Brunneli flap and a lateral pulp flap.[14] For lesions with bone involvement, amputation is the treatment of choice. The level of amputation depends on the extent of bone involvement. Radiation therapy has been recommended for the salvage of unresectable subungual squamous cell carcinoma. Our patient did not give history of external trauma but of nail biting. It was difficult to get an adequate margin of safety to preserve his digit and hence decision for amputation was taken.

CONCLUSION

Squamous cell carcinoma of the nail bed is a rare condition. Awareness about the condition and a high index of suspicion is necessary to make an early diagnosis. Nail lesions not responding after initial treatment should be biopsied. Early detection of this condition can avoid digital amputation.

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