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Case Report

Squamous cell carcinoma of nail bed: A great mimicker

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Introduction

Squamous cell carcinoma of nail bed is a rare low-grade malignancy, preferentially involving the digits of hands and thumb in particular. It mimics various common disorders of nail and does not have any specific clinical sign or symptoms, hence it is frequently misdiagnosed or takes a long time for diagnosis. These patients consult various surgeons and dermatologist and are invariably treated for chronic paronychia, onychomycosis, subungual wart or psoriasis before diagnosis is finally established. Delay in diagnosis is primarily because of the benign looks of the lesion and consequent

reluctance of biopsy. We report a 64-year-old patient of squamous cell carcinoma of nail bed whose diagnosis was delayed by more than 2 years. It highlights the need of sensitising physicians, surgeons and dermatologists about this condition. Timely diagnosis and intervention can obviate the need of amputation, one of the most demeaning surgeries.

Case report

A 64-year-old male patient, presented with deformity of nail and an irregular growth from lateral nail fold of right thumb of 2-year duration. The lesion initially presented as pus discharge along with intermittent pain. He self medicated himself with over the counter medications for about 6 months, without any relief. He later consulted general physician, surgeon and dermatologists over next 2 years, who treated him for paronychia, onychomycosis and subungual viral wart in form of antibiotics, antifungals and even underwent total nail avulsion with excision of growth thrice. In spite of surgical intervention, the excised tissue was not sent for histopathological examination. After every surgical intervention, growth recurred along with deformity of the nail plate. There was no history of trauma, burns, nail biting, and habitual scratching of nail. The recurrence of growth even after several surgeries prompted the possibility of malignancy.

Examination revealed an irregular, verrucous, brown to blackish, firm, tender growth arising from nail bed along lateral nail fold with dark discoloration (melanonychia) and onychodystrophy of lateral aspect of nail plate of right thumb.

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Fig. 1 – Irregular, verrucous, brown to blackish, firm, growth arising from nail bed along lateral nail fold and onychodystrophy thumb right.

Distal margin of nail was irregular, and cuticle was damaged (Fig. 1). Other nails of both the hands and feet were normal. There were no lymph nodes at elbow or axillary region or any cutaneous lesions suggestive of metastasis in the adjacent

Fig. 3 – Post-op photographs after 4 weeks with graft in situ.

skin or along the limb. 40% KOH mount of the nail showed no fungal elements, and fungal culture also did not yield any growth. Radiograph of right hand showed no bony involvement. Computerized tomography (CT) scan of right hand showed soft tissue growth with no bony involvement. Total nail avulsion with excision of the growth along lateral nail fold Rt thumb nail was done. The excised tissue was sent for culture and histopathological examination. Culture showed Methicillin-resistant staphylococcus aureus which was treated with suitable antibiotics. Histopathological examination revealed focal areas of full thickness dysplasia in the form of loss of polarity, nucleomegaly, and prominent nucleoli with mitosis infiltrating into underlying subepidermis, consistent with well-differentiated squamous cell carcinoma (Fig. 2). The patient was referred to reconstructive surgeon who performed wide local excision of nail bed of right thumb followed by perforator-based first dorsal metacarpal artery flap with Hatchet rotator advancement flap (Fig. 3). The patient

Fig. 2 – Photomicrograph showing (A) nail bed with nail plate (vertical arrow), areas of dysplastic squamous epithelium (arrow head) and areas of infiltrative squamous cell carcinoma (horizontal arrow), H&E ×10. (B) Details of infiltrating squamous cell carcinoma, H&E ×100. (C) Detailed high power view of infiltrating edge of lesion with large atypical cells showing hyperchromasia and single cell keratinization, H&E ×400.

responded favourably, thumb was preserved and he also had full range of movement.

Discussion

Squamous cell carcinoma of the nail is rare disease seen predominantly in males after the fifth decade of life.¹ It is frequently misdiagnosed and often confused with paronychia, onychomycosis, pyogenic granuloma, subungual warts or psoriasis. Since it is a low-grade malignancy and mimics various benign conditions, delay in diagnosis may vary from 1 to 14 years, and on an average, there is a delay of 4 years in diagnosis.² Involvement of hands is more common as compared to feet, and even in hands affliction of thumbs is more frequent.³ Possible etiological agents include human papilloma virus (HPV), chronic exposure to sun, radiation exposure, burn scars, smoking, chronic infections, congenital ectodermal dysplasia and chronic dermatitis.^{2,4} Guitart et al isolated HPV deoxyribonucleic acid from frozen tissue in 80% of patients with subungual squamous cell carcinoma majority being HPV 16 type.³

It has myriads of clinical presentation, varying from chronic pain, nail deformity, subungual growth, ulcer of nail folds, and nail dystrophy to complicated superadded infections. Unlike malignant melanoma of nail bed, it is usually a slow growing, low grade tumour with <2% reported metastases.⁵

However, vigilant clinical examination and detailed history can assist in differentiating various diagnosis. Paronychia is infection of nail fold which maybe acute or chronic. Acute paronychia is usually due to bacterial infection present as severe pain, erythema, swelling and may be with frank suppurative abscess. Chronic paronychia is usually an allergic contact dermatitis to chronic exposure to detergents and water, and maybe it has superadded fungal infection. Pyogenic granuloma, also known as lobular capillary hemangioma, usually present as a rapidly growing friable, red mass which bleeds easily on trivial trauma. Verrucae vulgaris, common viral warts, may present as papillomatous growth of paronychia or as a subungual warty growth. Verrucous carcinoma occurs rarely as a slow-growing, fungating, recalcitrant and exophytic mass usually in late sixties.⁶ Acral lentiginous melanoma may involve the palmar surface of the hands or subungual areas.⁷ Subungual melanoma is rare, and like subungual squamous cell carcinoma, it affects the thumb and great toe in middle-aged and elderly patients. It may present with vast morphologies including chronic paronychia, subungual pigmentation, ingrown nail, split nail, or junctional nevus.⁸ Therefore, malignant melanoma is a close differential of subungual squamous cell carcinoma and should always be ruled out.

Treatment depends on the extent of digit involvement and metastasis. Digital amputation can be obviated, and conservative surgery may suffice if the malignancy is detected early. Moh's micrographic surgery is helpful in conserving adjacent healthy tissue.⁹ Some patients have also reportedly benefited from radiation therapy.¹⁰ This patient underwent wide local excision along with arterial flap. He responded favourably with preservation of morphology of the thumb along with full range of movement. During last 6 months of follow-up, the patient has been asymptomatic with no clinical evidence of recurrence.

This case report highlights that the squamous cell carcinoma of the nail bed is frequently misdiagnosed as it is a rare condition. Key to early diagnosis is high index of suspicion and biopsy in case the lesions are not responding to conservative treatment.^{11,12} A multidisciplinary approach is required for timely diagnosis, assessment and management of this condition.

Conflicts of interest

The authors have none to declare.

REFERENCES

1. Lai CS, Lin SD, Tsai CW, Chou CK. Squamous cell carcinoma of the nail bed. *Cutis*. 1996;57:341–345.
2. Carrol RE. Squamous cell carcinoma of the nail bed. *J Hand Surg*. 1976;1:92–97.
3. Guitart J, Bergfeld WF, Tuthill RJ, Tubbs RR, Zienowicz R, Fleegler EJ. Squamous cell carcinoma of the nail bed: a clinicopathological study of 12 cases. *Br J Dermatol*. 1990;123:215–222.
4. Mikhail GR. Bowen disease and the squamous cell carcinoma of the nail bed. *Arch Dermatol*. 1974;110:267–270.
5. Meesiri S. Subungual squamous cell carcinoma masquerading as chronic common infection. *J Med Assoc Thai*. 2010;93:248–251.
6. Wright PK, Vidyadharan R, Jose RM, Rao GS. Plantar verrucous carcinoma continues to be mistaken for verruca vulgaris. *Plast Reconstruct Surg*. 2004;113:1101–1103.
7. Plate AM, Steiner G, Posner MA. Malignant tumors of the hand and wrist. *J Am Acad Orthop Surg*. 2006;14(12):680–692.
8. Leppard B, Sanderson KV, Behan F. Subungual malignant melanoma: difficulty in diagnosis. *BMJ*. 1974;1(5903):310–312.
9. Goldminz D, Bennettr RG. Mohs micrographic surgery of the nail unit. *J Dermatol Surg Oncol*. 1992;18:721–726.
10. Kelly KJ, Kalani AD, Storrs S, et al. Subungual squamous cell carcinoma of the toe: working toward a standardized therapeutic approach. *J Surg Educ*. 2008;65:297–301.
11. Olaoye IO, Adesina MD. Subungual squamous cell carcinoma: report of two cases. *Internet J Surg*. 2013;30(4).
12. Arumugam M. Squamous cell carcinoma of the thumb nail bed. *Indian J Dermatol Venereol Leprol*. 2007;73:445.