Case Report

Subungual Squamous Cell Carcinoma Masquerading as Chronic Common Infection

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Subungual squamous cell carcinoma is a rare disease that has been frequently misdiagnosed as benignity due to lack of awareness among doctors. The author reports a typical case of subungual squamous cell carcinoma in a 49-year-old Thai farmer who presented with a 4-year history of chronic persistent discharging ulcer at the nail bed of the left middle finger after experiencing a minor trauma to the hyponychium. Initially, he was treated as benign infection but the condition did not improve. The nail bed was biopsied and subungual squamous cell carcinoma was finally diagnosed. One small left epitrochlear lymph node and one large left axillary lymph node were palpable. He underwent amputation of the neck of the middle phalanx of the left middle finger, and biopsy of ipsilateral epitrochlear lymph node and dissection of the affected axillary tissue. The histological examination confirmed the diagnosis of subungual squamous cell carcinoma with left epitrochlear and axillary lymph node metastasis. Radiotherapy was planned.

Keywords: *Carcinoma, Squamous cell, Nail diseases*

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Subungual squamous cell carcinoma is a rare entity. Because it is nonspecific, benign looking and an indolent natural history of disease, diagnosis is often delayed for years[1]. Clinical presentations extremely vary and include leuconychia, subungual hyperkeratosis, trachonychia, subungual tumoural syndrome, longitudinal erythronychia, and melanonychia[2]. Therefore, the mistaken benign or more common infectious processes frequently diagnosed are verruca vagaris, onychomycosis, chronic paronychia, chronic osteomyelitis, pyogenic granuloma, subungual exostosis, glomus tumor, keratoacathoma, melanotic naevi, traumatic dyschromia of the nail plate, nail deformity, and ingrown nail[2-4]. Exploratory nail plate removal is a key for successful diagnosis but is often delayed owing to lack of awareness[5].

Case Report

A 49-year-old farmer presented to Srisangworn Sukhothai Hospital in August 2008 with a 4-year history of chronic persistent discharging ulcer at the radial aspect of the nail bed of the left middle finger after experiencing a minor trauma to the hyponychium. Two years later, he suffered from pain and swelling over the affected distal phalanx. The radial side of the nail plate was trimmed by himself for pain relieving. He gave a history of wart infection at the dorsum of the right foot when he was 7 years old. The case was unsuccessfully treated as chronic paronychia and fungal infection, respectively. Four months after initial presentation, the doctor biopsied the ulcer and discovered a poorly differentiated subungual squamous cell carcinoma. Physical examination revealed an exudating ulcer at the radial aspect of the nail bed, extending to the lateral nail fold and nail groove. The affected distal phalanx was erythematous, warm, swollen, and tender. One ipsilateral epitrochlear lymph node (1*0.5*0.5 cm in size) and one freely, non-tender, and movable axillary lymph nodes (2*2*2 cm in size) were palpable. Culture during biopsy uncovered moderate growth of *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Proteus mirabilis.* Roentgenograms of the left middle finger and chest were normal as well as ultrasound of the upper abdomen. The whole body technetium bone scanning showed an area of slightly increased radio

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tracer accumulation of the right clavicle but bony metastasis was not suspected by an orthopedic surgeon due to clinical irrelevance and negative magnetic resonance imaging of the right clavicle. Amputation at the neck of the middle phalanx of the left middle finger, open biopsy of the affected epitrochlear lymph node and ipsilateral level I-II axillary dissection were performed. Histological examination unmasked poorly differentiated invasive subungual squamous cell carcinoma, invading soft tissue and fascia with intact bony element (Fig. 1). The resected margins were tumor free. One epitrochlear lymph node metastasis was seen as well as one metastatic squamous cell carcinoma out of the twenty-six axillary lymph nodes was observed. Adjuvant radiation treatment was planned.

Discussion

Subungual squamous cell carcinoma is a tumor occurring in the epithelium of the nail bed, the matrix, the nail groove, or the lateral nail fold[6]. The tumors frequently found in subungual tissues include squamous cell carcinoma, Bowen's disease, melanoma, basal cell carcinoma, and keratoacanthoma[7]. Although being a rare disease, it is the commonest malignant subungual tumor[1,4,6,7]. The incidence is highest in the 50-59 year range[8]. Eighty-four percent of the affected individuals involve the fingers and the rest are in the toes. The most affected among the fingers and toes are thumb and great toe, respectively[9,10]. Most of them involve only a single digit[7]. The clinical features are various including chronic pain and swelling over the affected finger of a year's duration, fungating digital mass, malanotic macule, benign nail plate dyschromia, onychomychosis, chronic paronychia, frank ulceration, regional and distant metastasis[1-4,6-10]. Findings raising suspicion of subungual squamous cell carcinoma include nodularity, bleeding, ulceration, and unresponsiveness to conservative treatment[8]. The correct diagnosis which is often delayed for an average of 4 years[1], up to 40 years[11] attributes to masking by the nail plate, lack of awareness, and misled by secondary infections[8,12]. Fortunately, it is considered a low-grade malignancy and less aggressive than squamous cell carcinoma arising in other parts of the body[1,13]. Kurokawa et al demonstrated expression of cytokeratin 14, 16, and 17 in tumor nests of subungual squamous cell carcinoma specimen, compatible with its indolent clinical prognosis[14]. Most cases are invasive[2]. Bony involvement ranges from 17-66%[1,7,8,10,11]. Axillary lymph node involvement is uncommon. Distant metastasis is rare and fatal[1,6,9-11].

The proposed etiologies of the disease have been suggested; including chronic infection, trauma, congenital ectodermal dysplasia, radiation, tar, arsenic or minerals exposure, immunosuppresion, and previous human papilloma virus infection (HPV)[1,3-4,6-9].

The treatments rely on extent of disease, varying from Mohs micrographic surgery, wide local excision to amputation of the phalanx with or without

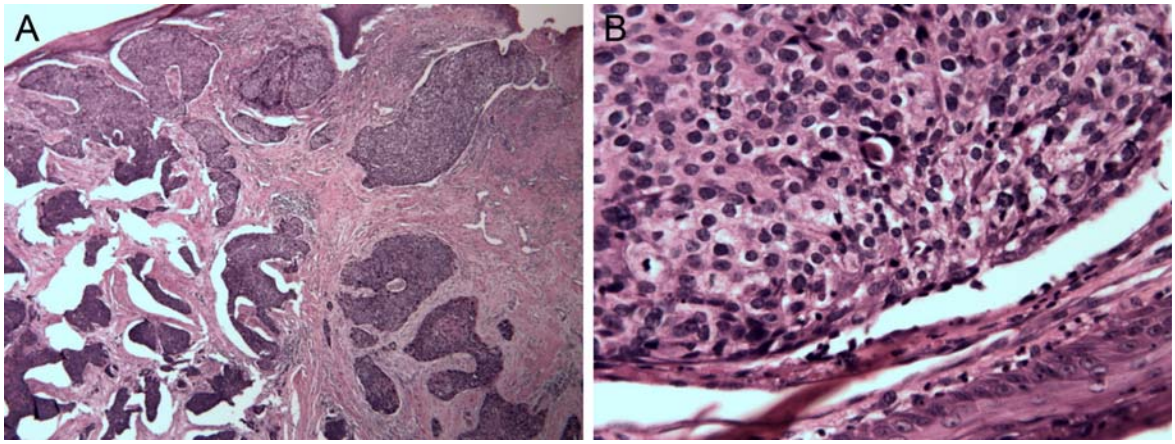

Fig. 1 Photomicrographs show sheets and islands of neoplastic primitive cells with pleomorphic hyperchromatic nuclei and frequent mitosis with focal squamous differentiation, invading the nail bed, soft tissue and fascia (A; H&E*4, B; H&E*40)

block lymph node dissection for invasiveness with and without lymph node metastasis, respectively[1,2,10,13]. Anecdotal reports suggested that radiotherapy might be useful[4,6,15,16]. A long term 3-10 years follow-up is recommended due to indolent course[4,16]. Relapse rate after surgical treatment is low (5%)[2].

The reported case is a typical subungual squamous cell carcinoma. A 49-year- old man presented with a chronic persistent ulcer over a nail bed of a finger, the possible risk factors of previous HPV infection in childhood and chronic infection of an affected finger, a delay in diagnosis and a regional lymph node involvement.

Conclusion

High index of suspicion for malignancy is prerequisite. Nail plate removal with nail bed biopsy is the rule for chronic persistent or recurrent nail bed lesion or in case that fails to respond to a reasonable trial of conservative treatment to rule out subungual squamous cell carcinoma.

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Subungual squamous cell carcinoma ปลอมแปลงเป็นโรคติดเชื้อเรื้อรังทั่วไป

สมชาย มีศิริ

Subungual squamous cell carcinoma เป็นโรคที่พบได้น้อยมาก ผู้ป่วยมักได้รับการวินิจฉัยผิดพลาดว่าเป็นโรคไม่ใช่มะเร็ง เป็นระยะเวลาหลายปี เนื่องจากแพทย์มิได้ตระหนักถึงโรคนี้ ผู้นิพนธ์รายงานกรณีศึกษาผู้ป่วยรายหนึ่งซึ่งมีลักษณะเป็นแบบฉบับของโรคนี้ ผู้ป่วยเป็นชาวนาไทยอายุ 49 ปี มาพบแพทย์ด้วยเรื่อง แผลเรื้อรังและมีน้ำเหลืองไหลซึมไม่เคยหาย ที่ใต้เล็บมือของนิ้วกลางข้างซ้าย ภายหลังจากได้รับบาดเจ็บเพียงเล็กน้อยที่ hyponychium ในเบื้องต้นผู้ป่วยได้รับการรักษาแบบโรคติดเชื้อทั่วไป ทว่าอาการก็ไม่ดีขึ้น แพทย์จึงตัดเนื้อเยื่อใต้เล็บที่เป็นโรคไปส่งตรวจและพบว่าเป็น subungual squamous cell carcinoma ในที่สุด แพทย์ยังคลำพบต่อมน้ำเหลือง epitrochlear ข้างซ้ายขนาดเล็ก และต่อมน้ำเหลืองที่รักแร้ข้างซ้ายขนาดใหญ่ได้อีกด้วย ผู้ป่วยจึงได้รับการผ่าตัดคอกระดูกท่อนกลางของนิ้วกลางมือซ้ายออก ตัดต่อมน้ำเหลือง epitrochlear และเลาะเนื้อเยื่อพร้อมต่อมน้ำเหลืองที่รักแร้ข้างเดียวกัน ผลการตรวจทางพยาธิวิทยายืนยันการวินิจฉัยโรค subungual squamous cell carcinoma ซึ่งลุกลามไปยังต่อมน้ำเหลือง epitrochlear และต่อมน้ำเหลืองที่รักแร้ข้างซ้าย ซึ่งแพทย์วางแผนจะฉายรังสีให้ผู้ป่วยต่อไป