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An unusual case of sporotrichoid nodules: Metastatic cutaneous squamous cell carcinoma

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## Case Presentation

### **An unusual cause of sporotrichoid nodules: Metastatic cutaneous squamous cell carcinoma**

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## Abstract

A 63-year-old immunocompetent patient presented with a 4 month history of 12 painless nodules in a linear array on his right arm. He had a history of a surgery for a cutaneous tumor on the dorsum of his right middle finger about a year prior, but he did not follow up after the surgery. A differential diagnosis of sporotrichosis, atypical mycobacteria, deep fungal infection, and metastatic cutaneous squamous cell carcinoma (SCC) was considered. Skin biopsy revealed islands of dysplastic squamous cells and keratin pearls in a desmoplastic stroma in the deep dermis and subcutaneous tissue. The behavior of the disease was very aggressive, with rapid dissemination in a linear array, mimicking an infectious sporotrichoid spread. To our knowledge, this is the second case report of sporotrichoid metastases to the skin from cutaneous SCC in an immunocompetent patient.

**Keywords: squamous cell carcinoma, skin neoplasms/pathology, neoplasm recurrence, lymphatic metastasis, sporotrichosis, sporotrichoid pattern**

## Introduction

Squamous cell carcinoma (SCC) is the second leading cause of skin cancer in Caucasians and it may metastasize in more than 5% of cases. Studies from different decades and populations confirm that approximately 80% of the metastases involve the primary regional lymph nodes, but the presence of multiple cutaneous metastases in a sporotrichoid pattern is a very rare occurrence, mostly reported in immunocompromised patients.

We report a 63-year-old immunocompetent patient who developed 12 painless nodules in a linear array on his right arm that developed over four months.

## Clinical Presentation

A 63-year-old man, skin type II, presented to our clinic with multiple painless nodules of four months duration over his right arm. He claimed that the lesions started close to his wrist and then spread proximally. He had a history of a surgery for cutaneous SCC on the dorsum of his right middle finger (Figure 1) about a year prior, but he did not return for follow up after surgery.



**Figure 1:** The primary neoplasm on the dorsum of the right middle finger. A hyperkeratotic nodule with central ulceration.

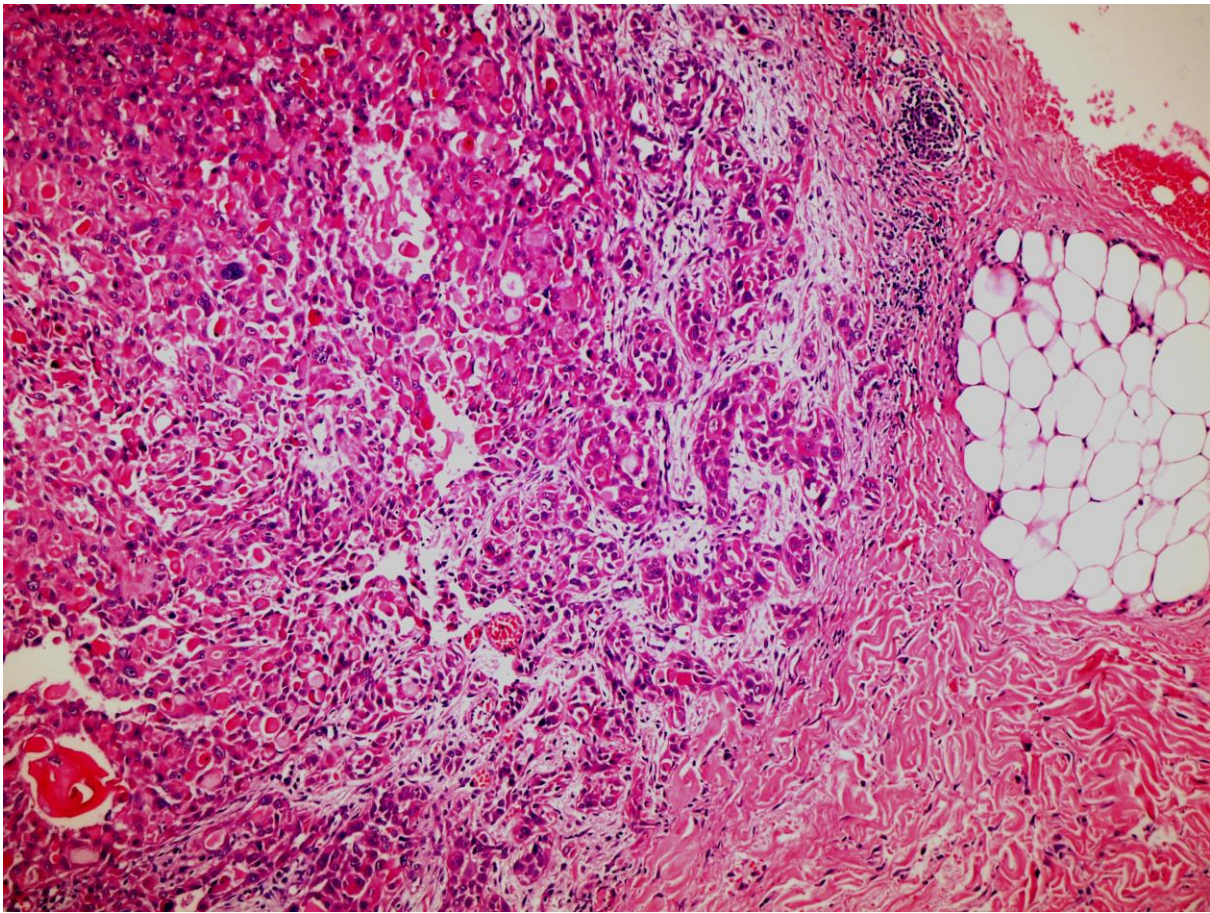
Cutaneous examination revealed, 12 dome shaped, violaceous, rubbery, nontender, subcutaneous nodules arranged in a linear fashion from wrist to elbow, present over the right forearm (Figure 2). Enlarged lymph nodes were palpated in the right axillary area.



**Figure 2:** Dome shaped, erythematous, rubbery, nontender, subcutaneous nodules arranged in a linear fashion.

A differential diagnosis of sporotrichosis, atypical mycobacteria, deep fungal infection, and metastatic squamous cell carcinoma was considered. KOH smear, gram stained smear, PCR for mycobacteria and fungal culture were negative.

Skin biopsy revealed islands of dysplastic squamous cells and keratin pearls in a desmoplastic stroma in the deep dermis and subcutaneous tissue. The epidermis, superficial dermis, and mid-dermis were normal(Figure 3). Laboratory tests were within normal limits, but total body computed scan (CT) detected nodal involvement of the right axilla.



**Figure 3:** Islands of dysplastic squamous cells and keratin pearls in a desmoplastic stroma in deep dermis and subcutaneous tissue. The epidermis, superficial and mid-dermis were regular

The patient underwent surgery for tumor debulking and complete lymph node dissection of the axilla. Histopathologic examination of the axillary nodes revealed neoplastic infiltration. The patient was referred to the oncology department for further management.

## Discussion

Metastatic spreading to the skin of cutaneous SCC is a rare event in immunocompetent patients [1]. The diagnosis of cutaneous metastasis is based on history, clinical, and pathological criteria. Cutaneous metastasis does not arise from the overlying epithelium and is not preceded by premalignant changes. It usually appears in the dermis or subcutaneous fat. It is associated with a known primary cancer elsewhere [2,3].

To our knowledge, this ‘sporotrichoid’ pattern of spread was first reported by Gmyrek et al [4], who described a similar linear progression of primary cutaneous metastatic SCC in an immunosuppressed 83-year-old male patient. He had received long-term extracorporeal photophoresis with psoralen and UVA, three courses of radiation therapy, and short-term interferon alpha injections for a preexisting cutaneous T-cell lymphoma. In that case, the aggressive behavior of the tumor was likely related to the immunosuppression. In 2010, Ciocca et al [1] reported sporotrichoid metastases to the skin in an immunocompetent patient. Their patient, like ours, had no history of congenital or acquired immunosuppression. In our patient, the behavior of the disease was very aggressive, with rapid dissemination in a linear fashion, mimicking an infectious-like configuration such as is described with cutaneous *Mycobacterium marinum*, *Sporothrix schenckii*, *Leishmania braziliensis*, and *Nocardia brasiliensis* infections [5-8]. This is the second case report of a sporotrichoid metastases to the skin from cutaneous SCC in an immunocompetent patient.

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