

# Advanced Ulcerated Squamous Cell Carcinoma of the Hand with Locoregional Axillary Lymph Node Metastasis – Case Report and Literature Review

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## Abstract

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**BACKGROUND:** Cutaneous squamous cell carcinoma (SCC) of the hand is the most common soft-tissue malignancy in this particular region. A literature survey suggested a higher rate of metastases in advanced SCC of the hand compared to head-and-neck cutaneous SCC.

**CASE REPORT:** An 84-year-old man presented with an ulcerated firm tumour on the dorsum of his right hand. A diagnostic biopsy confirmed the diagnosis SCC. Imaging suggested an involvement of the tendons of digits 3 and 4. A diagnostic ultrasound suggested a loco-regional axillary lymph node metastasis. After discussion in the interdisciplinary tumour board, amputation of the affected digits followed by lymph node excision was recommended.

**CONCLUSIONS:** Advanced SCC of the hand requires interdisciplinary management. Amputation is part of the surgical spectrum in advanced cases.

## Introduction

Malignant skin tumours of the hand – although uncommon–may have a significant impact on professional and private life. About 15 % of all soft tissue malignancies occur in hand [1]. In a series of 407 patients cutaneous squamous cell carcinoma (SCC) comprised 70.8 % of all malignancies followed by basal cell carcinoma and melanoma.

The predominant localisation was on the dorsum of the hand [2], [3]. SCC of the palm is even more rarely [4]. Risk factors for SCC on the hand are exposed to ultraviolet light, radiation, arsenic or immunosuppression, and chronic ulcerations. SCC tend to invade subcutaneous adipose tissue, vessels, nerve sheaths, tendons, cartilage, and bone. The 5-

year-rate of metastatic disease is about 5% [5].

Surgery provides a lower relapse rate than non-surgical treatment, i.e. 3% versus 33% [3]. A multidisciplinary approach is essential to manage the advanced disease. Amputation of fingers is rarely required but may become unavoidable in advanced disease [6].

## Case Report

An 84-year-old man presented with an ulcerated firm tumour on the dorsum of his right hand. He reported that the lesion had been slowly growing

for more than two years but started to increase more rapidly for three to four months. Since then it became ulcerated and showed a tendency of bleeding. His medical history was remarkable for diabetes mellitus type II and arterial hypertension.



Figure 1: Clinical presentation of an advanced, ulcerated cutaneous squamous cell carcinoma of the dorsum of the right hand

On examination, we observed a firm skin coloured tumour with central ulceration above the metacarpophalangeal joints of the third and fourth right digits (Figure 1). The tumour was adherent to underlying structures. The size was 4.2 x 3.8 cm. The lesion was painful under pressure.



Figure 2: Imaging of the patients; a) X-ray of the hand excluded bony tumour involvement; b) MRI of the hand suggested the involvement of the tendons digitus 3 and IV; c) Ultrasound image of the axillary lymph node metastasis

A diagnostic biopsy was performed. Histopathologic examination revealed a cutaneous SCC. The staging was initiated. MRI of the hand suggested the involvement of tendons and bony structures. Diagnostic ultrasound detected a

metastatic lymph node in the ipsilateral axilla. No distant metastases were detected (Figure 2). Laboratory investigations were unremarkable. In the interdisciplinary tumour board, a radical surgery with amputation of digits III and IV of the right hand was suggested followed by regional lymph node dissection.

An interdisciplinary team of hand surgeon and dermato-surgeon performed surgery of the primary tumour. After preparation of cutaneous palmar flaps, the tumour was excised with a safety margin of at least 5 mm. The vascular, nervous bundles of the 3<sup>rd</sup> and 4<sup>th</sup> digits were extensively electro-coagulated and cut. During metacarpophalangeal amputation, gout tophi were found in these joints and surgically removed. After preparation of flexor tendons, they were shortened and cut. The resulting defect was closed by palmar skin flaps (Figure 3).

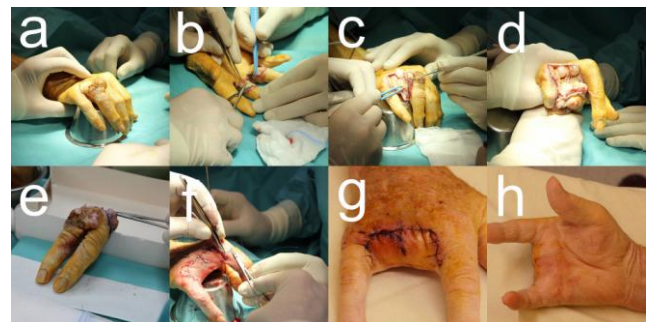


Figure 3: Surgery of the advanced cancer; a) Marking of the safety margins; b) Preparation of the palmar skin flaps; c) Electro-coagulation of vascular and nervous bundles; d) Exarticulation of digit 3 and 4; e) Surgical specimen; f) Suturing of the flaps; g) and h) Palmar and dorsal view 6 days after surgery

Histopathologic examination of the amputation specimen demonstrated a desmoplastic SCC with a tumour thickness of 11 mm. The investigation confirmed an R0 resection with 7 mm safety margins. Tumour stage and grading was pT2cN1cM0, G2, stage III. Gout tophi were also confirmed (Figure 4). In the postoperative care, physiotherapy was performed including compression therapy and joint mobilisation. After successful and uneventful wound healing on the hand, the patient underwent axillary lymph node removal in the department of surgery.

## Discussion

Advanced SCC of the hand has a poorer prognosis when it occurs in the skin overlying the dorsum of the proximal phalanges and web spaces), is ulcerated, has a macroscopic diameter greater than 20 mm, a tumour thickness greater than 4 mm, and an invasion to the subcutaneous fat or beyond [2].

Assessment of malignant tumours of the hand includes patient's history, clinical examination, imaging with computerised tomography (CT) or magnetic resonance imaging (MRI), and diagnostic biopsy for histopathology [1]. Since in the present patient, histopathology confirmed SCC. A diagnostic ultrasound suggested an isolated loco-regional axillary lymph node metastasis. The diagnosis of gout trophy was a surprise since no clinical or laboratory findings indicated a second metabolic disease – diabetes was already known and treated.

Amputation of a digit becomes the treatment of choice in case of tumour invasion to the periosteum, tumour size > 20 mm, or presence of satellite lesions. In a series of 74 patients with SCC on the hand, in 5.4 % finger amputation deemed necessary [7]. Regional node dissection should be performed if there are palpable nodes or imaging techniques demonstrating lymph nodes suspicious for metastasis [6]. The 5-year metastasis rate of cutaneous SCC, in general, has been estimated as 5%. Standardised effective medical drug therapy is yet not available. In a recent study on advanced and metastatic cutaneous SCC in general, the overall response rate to systemic therapies (mostly epidermal growth factor receptor-inhibitors) was 26% with a mean duration of response of only 5 months [8]. SCC on the hand has a higher propensity for metastases, ranging from 6% to 28% [9].

In the present case, metacarpophalangeal amputation followed by primary defect closure with skin flaps, and axillary lymph node dissection were performed [10]. The highest cure rates are achieved by surgical R0-resection [1]. The relapse rate after Mohs surgery is 1.2% [11]. The 5-year-survival rates are 88% to 92% for localized disease and 64% for advanced disease [12], [13].

In conclusion, the diagnosis of SCC of the hand should not be delayed ensuring the best possible treatment outcome. Tumour diagnosis can be hampered by other pathologies such as gout trophy in the present case. Treatment requires an interdisciplinary approach.

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