

# Surgical Management of Squamous Cell Carcinoma of the Plantar Forefoot

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## Statement of Purpose

Diagnosis and management of squamous cell carcinoma is instrumental in preventing further disease progression and metastasis. The purpose of this case study is to highlight the identification and appropriate surgical management of a plantar forefoot squamous cell carcinoma in conjunction with surgical oncology.

## Literature Review

Squamous cell carcinoma (SCC) is a rare but serious condition that can result in debilitating circumstances. While rare, it remains the most common soft tissue malignancy in the foot <sup>(1)</sup>. The incidence has been reported as 0.6 to 3% <sup>(2)</sup>, though a review of 511 cutaneous foot tumors found SCC to account for 14% of the lesions <sup>(3)</sup>. First described by marjolin in 1828, with associations of osteomyelitis and draining wounds <sup>(4)</sup>, these lesions can easily be disregarded as regular wounds or other pathologies due to varying clinical presentations. Early recognition and diagnosis is important to mitigate higher risk of metastasis and recurrence, though a study of 308 patients reported greater than 9 month delay in noticing lesions and formal diagnosis highlighting a significant challenge in time to treatment <sup>(5)</sup>. Wide excision or amputation with extensive wound care post excision remain mainstays of treatment <sup>(6)</sup>. Frozen sections can aid in ensuring complete resection and minimizing recurrence and metastasis <sup>(7)</sup>. Metastatic rates of SCC are 1.2-5% <sup>(8)</sup>, and in order to rule out metastasis, sentinel node biopsies remain an important step in the workup. The prognosis for all SCC is generally very good with an overall mortality rate of 1-2% <sup>(9)</sup>.

## Case Study

This 65-year-old male with past medical history of chronic low back pain and mixed hyperlipidemia presented to clinic as a referral with a large fungating 4.5 cm x 4.0 cm x 1.4 cm soft tissue mass of multiple years present beneath the first metatarsal head. Patient complaining on increased pain associated with mass over the past 3 to 4 months. Has been limiting the way he is able to walk and has become very painful to walk on. He was previously told that this was a plantar wart or ulceration at various outside hospitals and failed wart treatments and wound care. A shave biopsy confirmed squamous cell carcinoma and MRI revealed abutment of the mass adjacent to the abductor hallucis and flexor hallucis longus. A left inguinal lymph node biopsy was obtained by surgical oncology which was determined to have no malignancy. Surgical oncology then booked the patient for wide excision in which the podiatry department was requested to be involved for potential reconstructive/coverage options intraoperatively. During the wide resection, a frozen section was taken and tagged at the 12 o'clock position and sent to pathology which came back with close margins. Multiple spot margins were then taken in the deep and surrounding tissue which all returned benign. Following the procedure, there was a large defect with exposed flexor tendon. It was determined that there was no need for immediate reconstruction or soft tissue coverage, and the area was allowed to granulate in. In the 2 months following the procedure, the wound filled in well with granulation tissue over the the exposed tendon. Dressings initially consisted of bacitracin and non-adherent dressing with a dry dressing immediately following surgery which was progressed to hydrogel and a non-adherent dressing, followed by wet to dry dressings, and finally medical grade sterile manuka honey and dry dressing to be changed every other day by home health care.

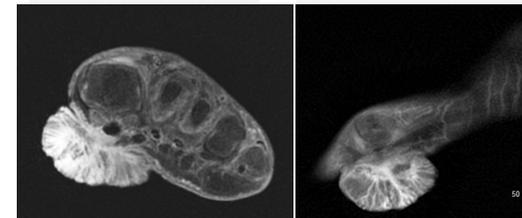
## Imaging/Clinical Photos



Figure 1: Preoperative Plantar surface clinical picture



Figure 2: Preoperative medial aspect clinical picture



Figures 3 and 4: Short axis and sagittal T1 MRI imaging



Figure 5: Intraop image post wide resection



Figure 6: Most recent post op clinical image

## Analysis and Discussion

Squamous cell carcinoma in the foot is exceptionally rare. While reported as the most common skin cancer in the foot, the incidence is 0.6 to 3.0% <sup>(2)</sup>. Due to local invasion and often long delays in diagnosis, adequate resection is necessary to avoid recurrence and further complications. Nizamoglu et al described the importance of frozen sections, as 29% of patients would have retained positive margins without frozen sectioning <sup>(7)</sup>. In our case frozen sectioning proved to be a valuable adjunctive procedure to ensure adequate resection of a locally invasive squamous cell carcinoma while preserving as much structure and function as possible.

## References

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