The Foot 24 (2014) 94–98

Contents lists available at ScienceDirect

The Foot

journal homepage: www.elsevier.com/locate/foot

Case report

Verrucous carcinoma of the foot, not your typical plantar wart: A case study

Diandra K. Gordon[a], Erinn N. Ponder[a], B. Hudson Berrey[b], Melanie J. Kubik[c], Joseph Sindone[a,*]

[a] Department of Podiatric Medicine, The University of Florida & U/F Health Jacksonville Medical Center, United States
[b] The Department of Orthopaedic Surgery & Rehabilitation, The University of Florida & U/F Health Jacksonville Medical Center, United States
[c] Department of Pathology and Laboratory Medicine, The University of Florida & U/F Health Jacksonville Medical Center, United States

ARTICLE INFO

Article history:
Received 8 October 2013
Received in revised form 18 March 2014
Accepted 22 March 2014

Keywords:
Verrucous
Carcinoma Biopsy
Human papilloma
Virus

ABSTRACT

Statement of purpose: Verrucous carcinoma of the foot is often misdiagnosed initially as plantar warts. Delayed diagnostic treatments with the use of optimal biopsy techniques may result in significant hindrances for patient care and may often result in detrimental outcomes to the patient. With the use of various epidermal biopsy methods, early diagnostic treatment can be implemented to a slow-growing lesion unresponsive to topical agents preventing unfavorable pedal amputations.
Design: A case study of verrucous carcinoma of the foot with surgical resection was conducted along with a literature review.
Background: Verrucous carcinoma (VC) of the foot is known to be a rare, locally invasive, well-differentiated low-grade squamous cell carcinoma that may evolve from the human papilloma virus. This localized tumor of the foot often has low metastatic potential, however can be quite invasive. It is therefore pertinent to obtain adequate radiological studies when planning for surgical resection of this tumor. When localized to the foot, it often involves deep structures such as tendons, muscle & bone. Complete wide local excision of the tumor is essential to avoid recurrence. We present a case of verrucous carcinoma of the foot in a 46-year-old African American male with a past medical history of Human immunodeficiency virus (HIV) and Human papilloma virus (HPV). The patient refused a Transmetatarsal amputation. The loss of the third digit was a result of tissue loss following resection and an attempt to relocate a severely laterally dislocated 3rd digit, not PVD.

Published by Elsevier Ltd.

1. Literature review

We present a case of a 46yr old HIV/HPV positive African American male with a 10 year history of a misdiagnosed long-standing pedal lesion that eventually encompassed the entire lateral margin of his right foot. According to most recent findings in the literature, undiagnosed verrucous carcinoma (VC) will lead to unfavorable amputation and pedal deformity if resection of the growth is not conducted in a timely fashion. Several case studies suggest that HPV is responsible for the development & growth of VC. Because our patient was positive for the papillomavirus as well as the human immunodeficiency virus, failure to rule out this destructive neoplasm during its early onset course with a simple punch biopsy resulted in un-wanted ray resections and digital amputations of the foot (Figs. 1 and 2). Penera [2] reported a case study and reviewed the literature. He found 81 articles about Verrucous Carcinoma (VC). VC affects all age groups with a higher incidence in males than females. Treatment consisted of wide excision to amputation. The most common area reported of VC is the foot at 100 cases. H. Tomas Temple [3] reported on unplanned surgical excision of tumors of the foot and ankle. This was a retrospective review over 20 years for malignant soft tissue tumors. Temple demonstrated that unplanned surgical excision of soft tissue sarcomas of the foot and ankle resulted in more reoccurrence rates of the lesions. Unplanned excision of these tumors resulted in longer delay in treatment and complicated surgeries. A. Nishimura [4] reported on the adverse effects of soft tissue sarcomas. This was a retrospective study after reviewing 592 sarcomas between 1973 and 2009. This was narrowed down to 14 consecutive patients. Five patients were unplanned surgical excisions and nine were planned. Nishimura

* Corresponding author at: U/F Health, 655 West 8th Street, ACC Building, 2nd Floor, Jacksonville, FL 32209, United States. Tel.: +1 904 244 8203; fax: +1 904 2443457.
E-mail addresses: Joseph.Sindone@jax.ufl.edu, jsindone@aol.com (J. Sindone).

http://dx.doi.org/10.1016/j.foot.2014.03.009
0958-2592/Published by Elsevier Ltd.

Figs. 1 and 2. Verrucous carcinoma on the lateral aspect of the foot. The tumor displays an exophytic hyperkeratotic invasive mass, malodors discharge through several sinus tracts.

concluded that unplanned excisions had worse prognosis and more likelihood of recurrence.

2. Case study

A retrospective chart, histological and radiographic review was conducted on a 46-year-old African American male with a 20 month follow-up. The patient has had a long-standing 10 year history of a misdiagnosed plantar lesion of the foot by several podiatrists. He presented to our institution initially in 2011 complaining of a massive malodorous hyperkeratotic painful foot mass which encompassed the entire plantar-lateral margin of his foot approximately 11 cm (L) × 10 cm (W). The lesion initially presented to the patient as a small circular nodule which was treated with various topical wart medications by local podiatrists. He states that the lesion took 10 years to maximize this substantial growth, however has always been painful with recent findings of malodorous drainage and inability to bear weight fully to the lateral column of his right foot. His past medical history include HIV and HPV. He admitted to smoking 1 pack of cigarettes/day for the past 30yrs and occasional alcohol intake, however negative for drug abuse/addiction. Upon initial evaluation of his right plantar foot mass, he was scheduled for a wide excisional biopsy procedure to remove the lesion along with completion of an MRI to detect the level of invasion to his right foot. An MRI of the right foot was obtained to further evaluate this extensively growing soft tissue mass. MRI results revealed an exophytic superficial mass associated with the distal aspect of the lateral forefoot. The MRI report revealed a lesion likely associated with squamous cell carcinoma or verrucous carcinoma of the foot. The post-operative pathology report revealed incomplete resection and positive margins

Fig. 3. MO view shows soft tissue mass encompassing the lateral margin of the right foot including the 4th & 5th digits.

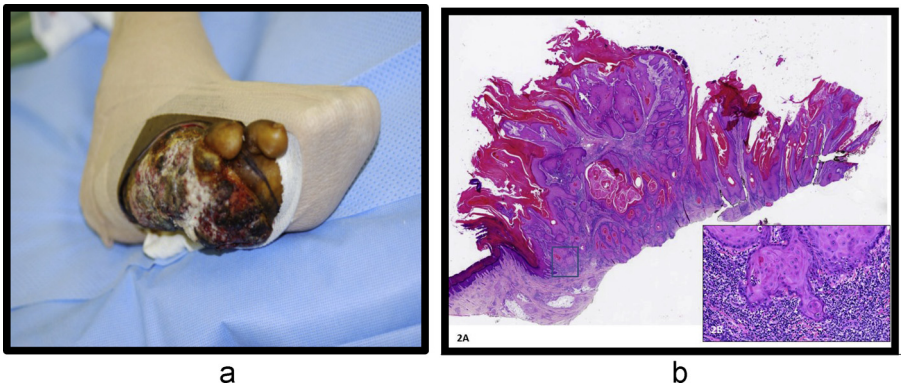

Fig. 4. (a) Intra op reveal lateral resected margin. (b) Low power view of verrucous carcinoma, with adjacent normal skin on the left. This well-differentiated squamous cell carcinoma is remarkable for its verrucous (papillomatous) architecture with hyperkeratosis. The inset (200×) highlights the well-differentiated invasive features.