Angiokeratoma Presenting as Plantar Verruca

A Case Study

Mark E. Dunnihoo, BS*
Ryan T. Kitterman, BS*
David Tran, DPM†

One of the more frequent pathologic conditions that podiatric physicians are confronted with is plantar verrucae. Plantar verrucae have been studied extensively in terms of morphological features and incidence in the population at large and in patients with human immunodeficiency virus infection. Solitary angiokeratomas can be morphologically similar to plantar verrucae, presenting as hyperkeratotic pedunculated lesions. We present a unique case study of a 40-year-old man with human immunodeficiency virus with a painful solitary angiokeratoma masquerading as plantar verrucae. The lesion demonstrated clinical signs consistent with those highlighted in the literature for verrucae, namely, showing as red and black lacunae, punctuated hyperkeratotic epidermis. We propose that solitary angiokeratomas should be an important part of a podiatric physician’s differential diagnosis in the lower extremity owing to the similarity of morphological features with plantar verrucae. (J Am Podiatr Med Assoc 100(6): 502-504, 2010)

Angiokeratomas are classified as benign tumors that present as red or black vascular lesions. There are five accepted classes of angiokeratomas: angiokeratoma of Fordyce (angiokeratoma scroti), angiokeratoma of Mibelli (angiokeratoma acroasphyticum digitorum), angiokeratoma corporis diffusum, angiokeratoma circumscripium naeviforme, and solitary angiokeratoma. This case study focuses on solitary angiokeratomas. This clinical case is consistent with other morphological studies of solitary angiokeratomas, which are often found to be lesions associated with acanthosis, hyperkeratosis, and dilated vascular spaces with organizing thrombi in the papillary dermis.1, 2 Solitary angiokeratomas are more prevalent than are the other classifications of keratomas, composing 70% to 83% of the cases.3 It has also been shown that 63% of solitary angiokeratomas are found on the lower extremities.4 Plantar verrucae possess many characteristics similar to solitary angiokeratomas. Verruca plantaris is commonly classified as a vascular lesion that presents as pedunculated, hyperkeratotic, and punctated (Figs. 1 and 2).5-7 Plantar verrucae are one of the most common dermatologic abnormalities seen in podiatric medicine.6 One study8 of children in Australian schools showed that 6% of warts found in 2,491 students were plantar verrucae. The current literature suggests that there is a higher incidence of plantar verrucae in human immunodeficiency virus-positive (HIV+) individuals.5, 7

Owing to variability in the appearance of solitary angiokeratomas and their similarity to other lesions, angiokeratomas are difficult to diagnose and are often misdiagnosed. For these reasons, the only definitive measure of diagnosis is through biopsy and obtaining a pathologic report.

Angiokeratomas and verrucae can be treated with pulsed-dye lasers. On the other hand, acidic treatments, such as cantharidin, are more conventionally used for debridement of plantar verrucae.6 Acidic treatments are not an option for use with angiokeratomas because they disrupt the dilated vasculature, causing unnecessary bleeding.

Case Report

A 40-year-old, HIV+, man presented to the podiatry clinic at Highland Hospital in Oakland, California,
with a painful lesion at the fourth metatarsal head on the plantar aspect of his left foot. Owing to the location of the lesion, the patient felt pain at a level of seven of ten during walking and other daily activities that caused pressure to the area. The patient denied any trauma leading to the onset of the lesion. The patient’s medical history was significant for HIV infection and no known allergies to medications. A thorough lower-extremity physical examination was performed. The patient’s neurovasculature status was benign, and he demonstrated no musculoskeletal abnormalities.

Dermatologically, the patient demonstrated a painful lesion on the plantar aspect of the left fourth metatarsal head (Fig. 3). It measured approximately 1.2 × 1.5 cm and appeared punctuated, containing vascularization, and was hyperkeratotic. A differential diagnosis of a plantar verruca and a possible angiokeratoma was determined from the appearance of the lesion. To ascertain the definitive diagnosis, a 4-mm punch biopsy sample was obtained and was sent to a pathology laboratory. The biopsy was performed using standard sterile procedures, and the patient was educated regarding after-procedure care for the area (Figs. 3 and 4). The definitive biopsy report concluded that the lesion was an angiokeratoma (Fig. 5). The patient was reevaluated and sutures were removed in a timely manner. Options for treatment were discussed with the patient as appropriate. Verbal consent was acquired for all images and information presented in this study.

**Conclusions**

We presented a case of a solitary angiokeratoma mimicking a plantar verruca. Podiatric physicians
should be aware of these similarities because solitary angiokeratomas and plantar verrucae have differing treatment plans and protocols. Because angiokeratomas are vascular lesions, treating them with simple curettage or cantharidin may lead to complications of bleeding. Because the current literature suggests that there is a higher incidence of plantar verrucae in HIV+ individuals,\textsuperscript{5,7} it is not unreasonable to postulate that there may be correlations with HIV and a higher incidence of solitary angiokeratomas in this population of patients as well. Further research is required to arrive at a definitive correlation.

**Financial Disclosure:** None reported.  
**Conflict of Interest:** None reported.

**References**


![Figure 5. Histologic slide from the pathology report confirming a solitary angiokeratoma.](image-url)