

## Lesser Digit Schwannoma: a Case Report

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### Statement of Purpose

- Digital tumors are a common pathology seen by foot and ankle surgeons.
- A schwannoma is a benign nerve cell tumor, but is quite rare in the lower extremity.
- Very few cases schwannoma associated with the digital nerve are presented in the podiatric literature.
- We present a case of an isolated lesser digit schwannoma, which presented without any neurological symptoms and was treated definitively with surgical excision.
- We conclude that the podiatric physician should include schwannoma as part of the differential diagnosis of digital tumors, especially in the setting of neurologic symptoms.

### Literature Review

A schwannoma is a benign tumor of neural origin that arises from the myelin sheath. While schwannoma is the most common solitary nerve tumor in the body, it is uncommonly found in the lower extremity. They usually presents as a slowly growing soft tissue mass; patients often experience pain with possible paresthesia or hypesthesia. Schwannomas rarely transform into malignancy. They most commonly present at middle age (1).

The prevalence of digital schwannoma in the lower extremity is unknown. Few cases have been reported of isolated digital schwannomas of the lower extremity (1-3). Most cases in the lower extremity appear to be in relation to the posterior tibial nerve (4-6), though they can arise in theoretically any of the nerves in the foot or ankle. A case series of upper extremity schwannomas showed only 20% of cases occurred in digital nerves (7), but no similar case series appears in the podiatric literature.

The mainstay of treatment includes surgical excision (8). They are usually well encapsulated, and lie outside of the nerve sheath. Thus, with careful dissection iatrogenic nerve damage is uncommon. Recurrence is similarly uncommon. Definitive diagnosis is achieved through histopathology.

### Case Study

- A 64 year old female with a past medical history of hypertension, anxiety, gastroesophageal reflux, and schizophrenia presented to our clinic for evaluation of a mass underneath her left third toe. She states the mass started 6 months ago and has been slowly increasing in size. She denied numbness and tingling in her foot.
- Exam showed a firm, immobile mass extending from the plantar sulcus to the third distal interphalangeal joint. Radiographs did not show any underlying osseous involvement. The working diagnosis at the time was a fibroma, and an MRI with contrast was performed.
- MRI showed a bilobed 2.1 x 1.4 x 1.9 cm mass without osseous nor tendinous involvement. The mass was hypointense on T1, and mostly hyperintense with some areas of hypointensity on STIR images. The mass showed diffuse enhancement by contrast. Though the findings were non-specific, the leading differential was again a fibroma.
- The patient elected for removal of the mass. The mass was almost immediately subcutaneous, and was well encapsulated and bilobed in appearance. It measured 2.0 x 1.0 x 1.0 cm and was rubbery and pale tan-gray with a thin membranous covering. No tears or ruptures were noted to the flexor tendon or digital fascia upon removal. The mass was sent for histology and diagnosed as a benign schwannoma, with characteristic palisading nuclear arrangements known as “Verocay bodies” (Figure 4).
- Post-operatively, the patient complained of numbness in her 3rd digit, but otherwise healed from surgery uneventfully. This was shown to be transient and full sensation to the digit returned within 3 months post-operatively.

### Discussion

- Schwannomas are benign nerve sheath tumors that rarely occur in the lower extremity. Most cases occur with pain, and often present with parasthesias. The patient in our case did not complain of any neurological symptoms. As such, Tinel’s sign was not performed. The leading diagnosis both clinically and on MRI was a fibroma. The mass was only correctly identified as a schwannoma on histology. Post-operative anesthesia of the digit confirms the neural origin of the tumor.
- A recent article in the International Journal of Dermatology suggest up to 20 differential diagnoses for soft tissue of the upper extremity digit (8). Apart from schwannoma, several of these are commonly encountered in the lower extremity, including fibroma, ganglion cyst, and glomus tumor. While uncommon, the podiatric physician should include peripheral nerve tumor as a possible differential diagnosis for any lesser digital mass.

### Figures



Figure 1

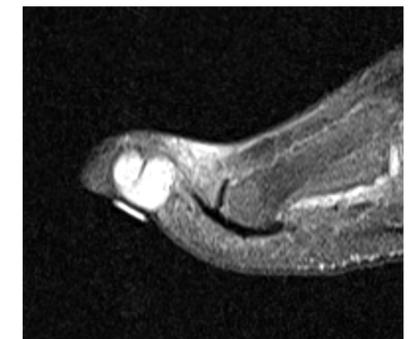


Figure 2



Figure 3

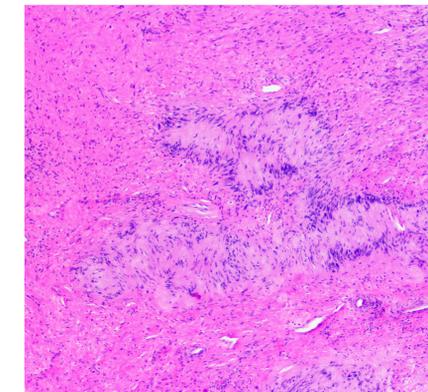


Figure 4

### References

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