

Cutaneous Schwannoma of the Foot

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GOAL

To describe a case of cutaneous schwannoma of the foot

OBJECTIVES

Upon completion of this activity, dermatologists and general practitioners should be able to:

1. Outline the epidemiology of schwannomas in general and schwannomas of the foot.
2. Explain the histologic features of schwannomas.
3. Discuss associated syndromes and therapy of schwannomas.

CME Test on page 130.

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Schwannomas usually present as solitary subcutaneous tumors adherent to a peripheral nerve. A solitary cutaneous schwannoma presenting as a solitary cutaneous nodule on the foot of a 19-year-old male is described. This is an unusual presentation of schwannoma. Saucerized excision

produced an excellent result with no adverse effect on function or cutaneous sensation.

Schwannoma, also referred to as neurilemoma, is usually an encapsulated subcutaneous benign neoplasm that derives from the nerve sheath. Commonly found in association with cranial nerves (especially the acoustic nerve), schwannomas may arise anywhere along the course of a nerve. Schwannomas of the foot are uncommon, and dermal schwannomas are rare.¹

Case Report

A 19-year-old male presented with a 1-year history of a solitary lesion on the dorsum of his left foot. This nodule caused hypoesthesia directly over the lesion but nowhere else on his foot. The increasing size began to interfere with wearing combat boots. He had periodically self-treated this lesion with

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FIGURE 1. Schwannoma on dorsum of right foot.

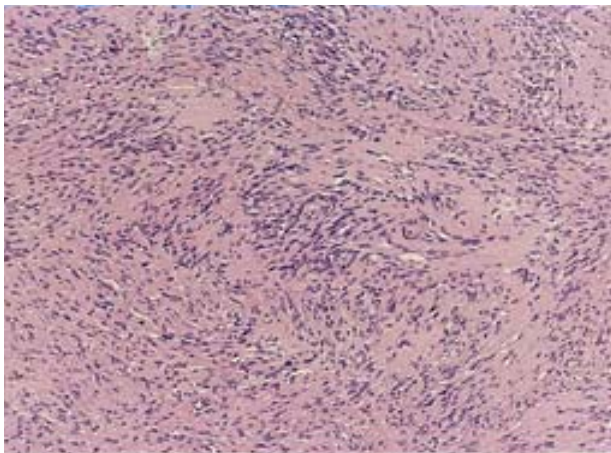


FIGURE 2. Histologic examination of cutaneous nodule demonstrates typical characteristics of a benign schwannoma.

over-the-counter wart medications. His past medical history was unremarkable with no family history of neurofibromatosis or previous trauma at the site of the lesion. Review of systems was unremarkable.

Physical examination revealed a pediculated fleshy firm nodule of 1-cm diameter on the dorsum of his left foot (Figure 1). Neurovascular examination of the foot was normal with good sensation to light touch and temperature. The patient's dorsalis pedis pulse was easily palpated, and he had brisk capillary refill.

Removal of the lesion was achieved by saucerized excision under local anesthetic. The patient experienced no complications or neurologic compromise postexcision and, after 2 months, has healed with no evidence of recurrence.

Comment

Schwannomas occur most commonly during the fifth decade of life. The mean age of occurrence is

46 years. In one large study, schwannomas represented 5% of all benign soft-tissue tumors, and only 9% of these schwannomas were found in the foot or ankle.² Schwannomas occur equally in both sexes.³ Schwannomas of the foot are commonly found in the deep tissues.^{4,11} Associated symptoms include pain and dysesthesia related to nerve compression. Belding¹² reported a case of tarsal tunnel syndrome due to a schwannoma.

Histologically, the schwannoma is typically well encapsulated by perineurium. The neoplasm consists of areas of high cellularity (Antoni type A) that alternate with myxoid edematous areas (Antoni type B)(Figure 2). Cells in Antoni type A tissue have a tendency to align, creating palisades of stacked nuclei separated by anuclear areas of stacked cytoplasmic extensions (Verocay bodies). The residual nerve of origin may be seen compressed to the side.¹³ Requena and Sanguenza¹⁴ describe distinct histological variations of schwannoma that include cellular, ancient, and plexiform. Other classical variations include angiomatoid, granular, myxoid, pigmented, epithelioid, and pacinian schwannomas.¹⁴

Schwannomas are typically found as solitary nodules. Jacobson and Edwards⁶ suggest a traumatic origin for schwannomas, citing a study by Masson in which trauma produced neurilemmomas. Syndromes associated with multiple schwannomas are neurofibromatosis (especially type 2)^{15,16} and schwannomatosis.^{17,18}

Most schwannomas are found associated with larger peripheral nerves and are subcutaneous. The nerve giving rise to this particular schwannoma was inconspicuous and superficial. The lack of symptoms suggests that it may have been derived from a terminal cutaneous nerve.

The treatment of choice for these lesions is excision. Benign solitary schwannomas rarely become malignant,¹⁵ and wide excision is not required. Careful dissection of the nerve will generally preserve nerve function. In the present case, the schwannoma was superficial with no visible associated nerve. Saucerized excision produced an excellent result.

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