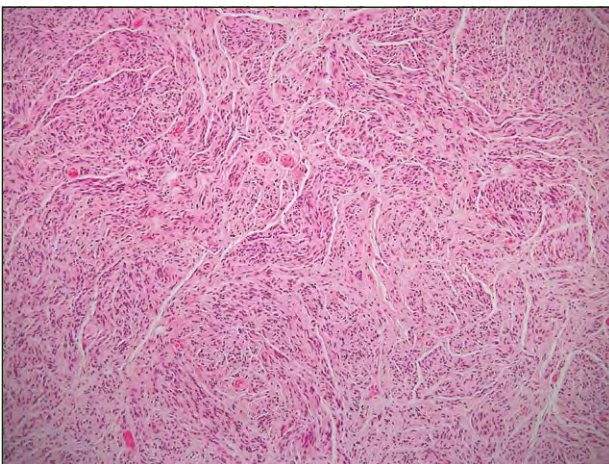


H&E, original magnification $\times 40$.



H&E, original magnification $\times 100$.

The best diagnosis is:

- a. neurofibroma
- b. palisaded encapsulated neuroma
- c. piloleiomyoma
- d. schwannoma
- e. traumatic neuroma

PLEASE TURN TO PAGE 177 FOR DERMATOPATHOLOGY DIAGNOSIS DISCUSSION

L. David Hall, MD; Tammie Ferringer, MD

Dr. Hall was from and Dr. Ferringer is from the Department of Dermatology, Geisinger Medical Center, Danville, Pennsylvania. Dr. Ferringer also is from the Department of Laboratory Medicine. Dr. Hall currently is from Ackerman Academy of Dermatopathology, New York, New York.

The authors report no conflict of interest.

Correspondence: L. David Hall, MD, Ackerman Academy of Dermatopathology, 145 E 32nd St, Floor 10, New York, NY 10016 (lawrence.hall@downstate.edu).

Palisaded Encapsulated Neuroma

Neuromas are nerve sheath tumors in which Schwann cells and axons are present in roughly equal amounts. There are 2 major subtypes: traumatic neuromas and palisaded encapsulated neuromas (PENs). Palisaded encapsulated neuromas, or solitary circumscribed neuromas, typically present as solitary flesh-colored papules on the face in middle-aged patients.¹ A well-circumscribed, round to oval nodule typically is seen in the dermis encased by a delicate, often incomplete connective tissue capsule (Figure 1). The prevalence of presentation on the face is suggested by adjacent vellus hair follicles and sebaceous glands.² The tumor is composed of interwoven fascicles of spindled cells displaying wavy nuclei with tapered ends separated by clefts (Figure 2), an artifact of tissue processing.³ A traumatic neuroma represents a proliferative response following extrinsic damage to a nerve fiber and can occur at any body site.

Similar to PENs, traumatic neuromas are composed of nerve fascicles separated by clefts, but the fascicles are arranged haphazardly and embedded in fibrous scar tissue, signifying prior injury (Figure 3).⁴ The interlacing smooth muscle bundles of piloleiomyoma may simulate PEN at low-power view; however, on closer inspection the spindled cells have elongated nuclei with blunt ends (cigar shaped) and often have perinuclear vacuoles (Figure 4). Schwannoma (neurilemmoma) is an encapsulated proliferation of Schwann cells located within the deep dermis or subcutis, in

contrast to PEN, which commonly presents as a superficial papule on the face. Schwannoma is a biphasic tumor composed of variable amounts of hypercellular (Antoni type A neurilemmoma) and loose hypocellular (Antoni type B neurilemmoma) tissue. In Antoni type A neurilemmoma areas, spindled cell nuclei may be arranged in rows or palisades, with the intervening

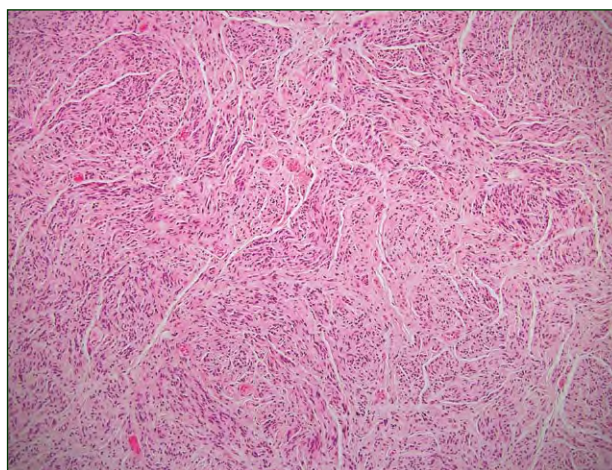


Figure 2. Fascicles of spindled cells displaying wavy nuclei with tapered ends. The fascicles are separated by clefts, a consequence of tissue processing (H&E, original magnification $\times 100$).

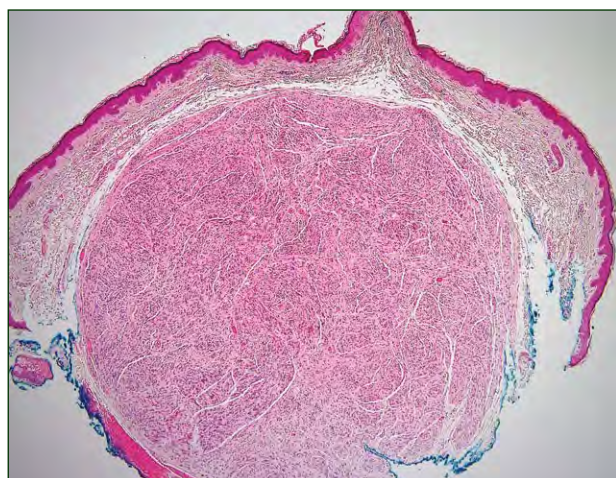


Figure 1. Well-circumscribed dermal nodule composed of fascicles of spindled cells with intervening clefts (H&E, original magnification $\times 40$).

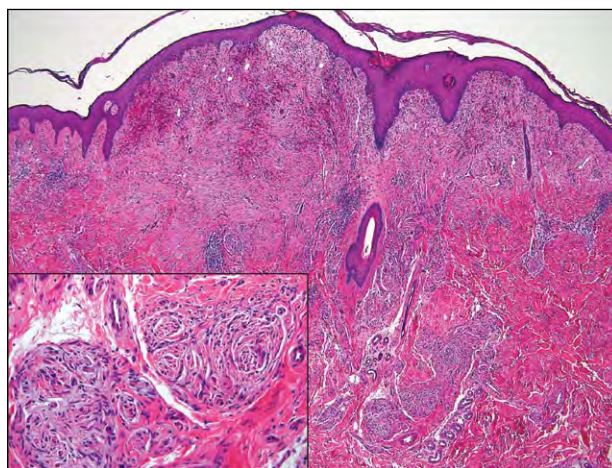


Figure 3. Superficial scar with an underlying proliferation of nerve fascicles in a haphazard irregular arrangement (H&E, original magnification $\times 40$). Note the nerve fascicles of various sizes and shapes embedded in fibrous scar tissue (H&E, original magnification $\times 200$ [inset in bottom left corner]).

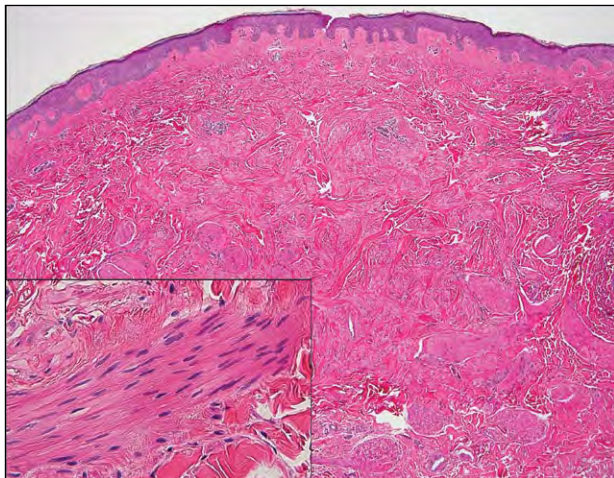


Figure 4. Nonencapsulated dermal proliferation of spindle cells arranged in interwoven fascicles, separated by dermal collagen and clefts (H&E, original magnification $\times 40$). Smooth muscle cells display elongated, cigar-shaped nuclei and perinuclear vacuoles (H&E, original magnification $\times 400$ [inset in bottom left corner]).

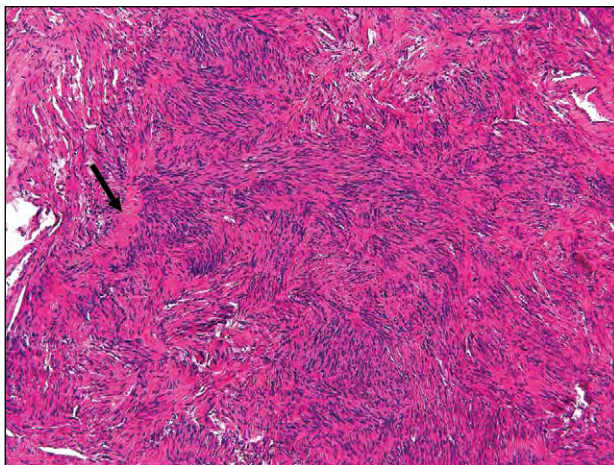


Figure 5. Antoni type A neurofibroma tissue representative of schwannoma consists of spindle-shaped Schwann cells arranged in fascicles, with nuclei arranged in palisades and rows forming the Verocay body (arrow)(H&E, original magnification $\times 200$).

eosinophilic material forming the characteristic Verocay bodies (Figure 5). Antoni type B neurofibroma areas consist of irregularly scattered Schwann cells within a loose myxoid stroma, often with focal

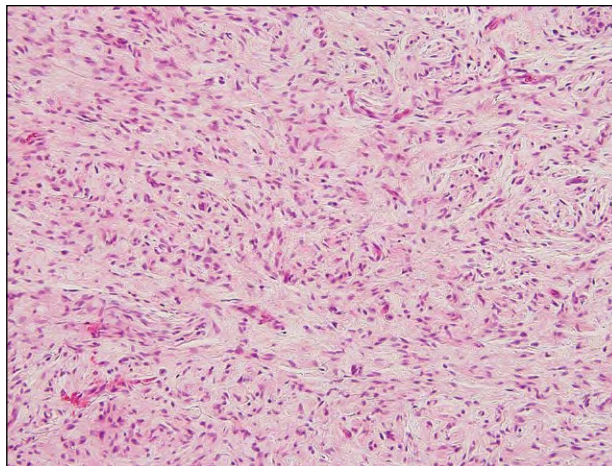


Figure 6. Neurofibroma displays haphazard spindle cells with wavy or comma-shaped nuclei within a fine fibrillar and myxoid stroma. Mast cells may be prominent within the myxoid stroma (H&E, original magnification $\times 200$).

degenerative changes, including hemosiderin deposition and microcystic changes. A neurofibroma is a nonencapsulated tumor of spindle cells with wavy or comma-shaped nuclei and scattered inflammatory cells, predominantly mast cells, within a fibrillar, collagenous, or myxoid stroma (Figure 6). Neurofibromas lack the well-developed fascicles of PENs. Although axons are present within neurofibromas, they are not seen in a 1:1 ratio with Schwann cells, as in neuromas.

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