The best diagnosis is:

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

H&E, original magnification ×40.

H&E, original magnification ×100.
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. 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. 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. 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). 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 1. Well-circumscribed dermal nodule composed of fascicles of spindled cells with intervening clefts (H&E, original magnification ×40).

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 ×100).

Figure 3. Superficial scar with an underlying proliferation of nerve fascicles in a haphazard irregular arrangement (H&E, original magnification ×40). Note the nerve fascicles of various sizes and shapes embedded in fibrous scar tissue (H&E, original magnification ×200 [inset in bottom left corner]).
eosinophilic material forming the characteristic Verocay bodies (Figure 5). Antoni type B neurilemmoma areas consist of irregularly scattered Schwann cells within a loose myxoid stroma, often with focal degenerative changes, including hemosiderin deposition and microcystic changes. A neurofibroma is a nonencapsulated tumor of spindled 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 PEs. Although axons are present within neurofibromas, they are not seen in a 1:1 ratio with Schwann cells, as in neuromas.

REFERENCES