Piloleiomyoma Mistaken for Postacne Scarring

LCDR Jeffery A. Stone, MC, USN; CDR Alan L. Morrison, MC, USN

Piloleiomyomas are benign, smooth muscle neoplasms arising from the arrectores pilorum muscles in the skin. They differ in size and number and are often cold and painful or sensitive to touch. Piloleiomyomas, though not exceedingly rare, may not be expected in the differential diagnosis for multiple skin nodules. We present a case of a piloleiomyoma that was initially diagnosed as postacne scarring.

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Cutaneous leiomyomas are benign, slow-growing, smooth muscle tumors. They are thought to arise from vascular smooth muscle (angioleiomyomas), arrector muscle of hair follicles (piloleiomyomas), tunica dartos of the scrotum, smooth muscle of the labia majora, and the mammillary smooth muscles of the areola (genital leiomyomas). These neoplasms are classified broadly as either vascular or nonvascular.

Angioleiomyomas initially present as a solitary nodule on the extremities in middle-age or elderly patients.[1-3] In contrast, genital leiomyomas, which are the rarest form, can appear at any age usually as a single lesion.[1,3]

Piloleiomyomas are the most common cutaneous smooth muscle tumors, occurring either as a solitary neoplasm or as multiple neoplasms. They may be found on the neck and face, trunk, and extensor surfaces of the extremities. They can occur at any age but usually are found in the second and third decades of life, are equally common in men and women, and have no racial predilection. There have been reports of multiple piloleiomyomas occurring in family members; inheritance is autosomal dominant with variable penetrance.[4] Pain often can be elicited by changes in pressure, temperature, or sexual excitation.[1,5]

On clinical examination, these tumors usually present as firm, tender or nontender papules, nodules, or plaques, ranging in size from several millimeters to several centimeters in diameter.[5] Discoloration of the overlying skin is common, varying in color from reddish violet to mother-of-pearl. However, piloleiomyomas may present as nodules without discoloration of the overlying skin.[1,3]

Treatment options in the past have included excision, but with multiple lesions, this may be impractical. The use of nifedipine and phenoxybenzamine has been shown to decrease the pain and sensitivity when surgical excision is not an option.[3,6,7] Cosmetically, some experts have suggested dermabrasion or depilatories, or, in the areas of the face, allowing the pilosebaceous unit time to grow and then removing the hairs.[3,7]

Case Report

A 27-year-old white man presented to his primary care physician for evaluation of numerous cystic-type papules and nodules on his face (Figure 1). Further investigation revealed the lesions had been present for 10 years and slowly growing during that period. In addition, the patient's mother also had experienced similar symptoms, in that she was treated for acne as an adult but had no discrete nodules. The patient's medical history revealed numerous treatment modalities for acne vulgaris. The patient reported periods of episodic pain associated with cold temperatures.

Findings from the physical examination revealed varying sizes of erythematous papules and nodules on both cheeks. The nodules were firm and fixed in the dermis. There was no evidence of ice-pick scarring or other active pustules. Nodulocystic acne was suspected, and the patient was referred to a dermatologist for consideration of isotretinoin therapy. The dermatologist who examined the patient determined that the diagnosis was consistent with either acne vulgaris or rosacea and

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Dr. Stone is stationed on the USS La Salle COMSIXTH FLT, Gaeta, Italy. Dr. Morrison is from the Laboratory Department, Naval Hospital, Pensacola, Florida.

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Reprints: LCDR Jeffery A. Stone, USS La Salle, Medical Department, FPO AE 09577-3320 (e-mail: stonej@lasalle.navy.mil).

treated him with tetracycline 500 mg twice a day for 6 months.

After 6 months of therapy, the patient returned for a follow-up examination, complaining of constant ingrown hairs and of nicking his facial bumps while shaving. Results of a reexamination revealed that some of the previously noted papules had regressed, while several new 1-cm plaques had appeared. Postacne scarring was diagnosed, and the patient was given localized steroid injections of triamcinolone acetonide 10 mg/mL with follow-up at 4 weeks.

Approximately one month later, the patient was reevaluated and underwent several shave biopsies. Histopathologic examination of the shave biopsies revealed a subepithelial spindle cell proliferation consistent with piloleiomyoma (Figure 2). Further diagnostic studies were needed, and the patient consented to multiple punch biopsies. Histopathologic examination of the punch biopsies showed fascicles of spindle cells consistent with piloleiomyoma (Figure 3).

Several plastic surgeons and dermatologists were consulted for discussion of treatment options for this patient. Although dermabrasion and laser resurfacing were possible treatment modalities, they were not recommended because of the depth of involvement. Likewise, surgical excision was not considered because of the number of neoplasms and associated morbidity. Because of the severity of this condition and the poor prognosis associated with the aforementioned treatments, the patient was encouraged to let his facial hair grow.

Figure not available online

Figure 1. Patient with facial piloleiomyomas.

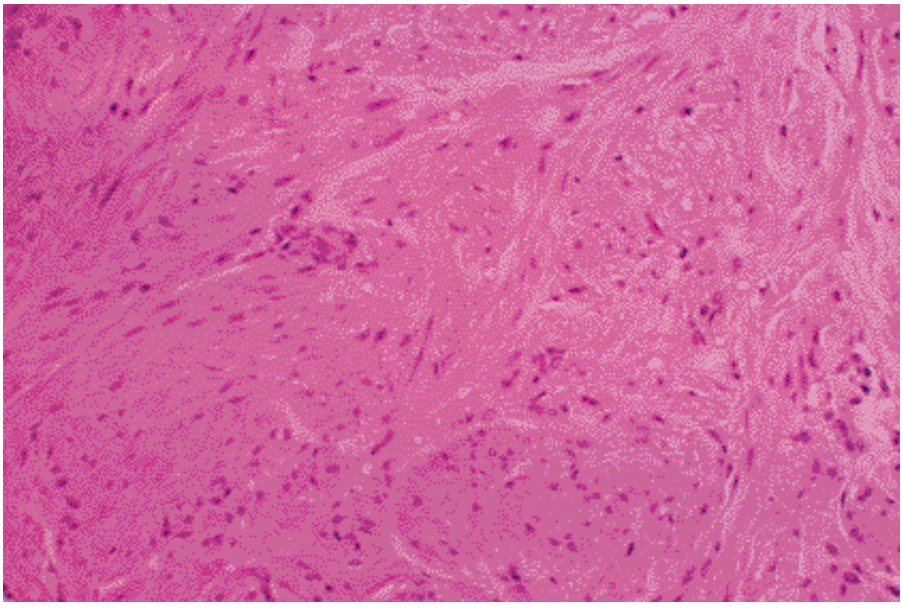

Figure 2. Smooth muscle cells with blunt-ended nuclei and cytoplasmic vacuoles (H&E, original magnification ×20).

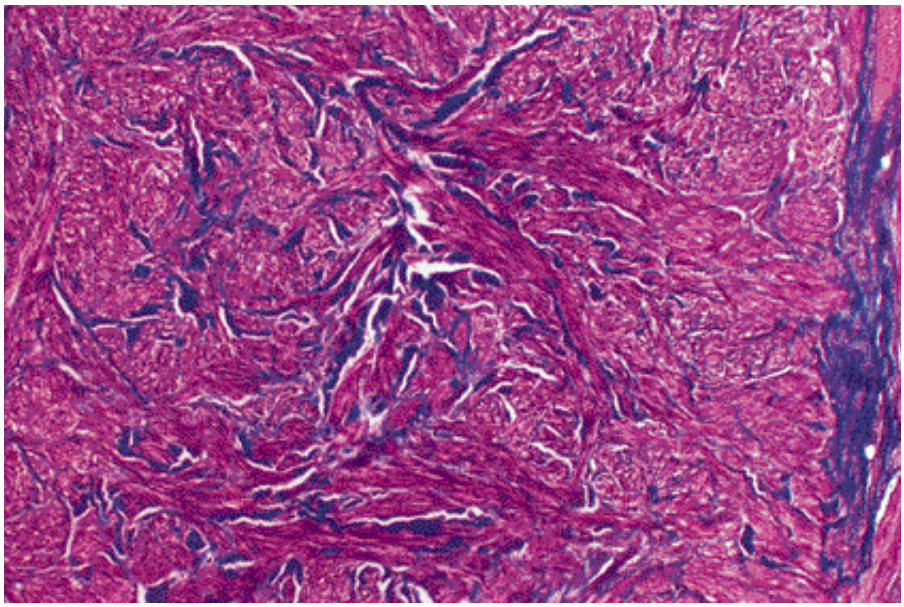

Figure 3. Brilliantly positive Masson trichrome staining with blue aniline shows collagen, and staining with red shows smooth muscle (original magnification ×40).

Comment

Virchow[8] first reported cutaneous leiomyomas in 1854, when he described the case of a 32-year-old man with many smooth muscle tumors that produced paroxysmal pains. Since then, there have been many reports showing that these tumors may be solitary and asymptomatic. Pain may precede or occur in conjunction with the tumors. Generally, most lesions are painless at onset but may progress and become painful with time. Cutaneous leiomyomas vary in size and may be almost indiscernible when very small.[1,8]

On histologic examination, piloleiomyomas are nonencapsulated but discrete dermal tumors, with interlacing bundles of smooth muscle intermingled with varying amounts of collagen bundles. The muscle fibers comprising the smooth muscle bundles generally are straight and contain centrally located, thin blunt-ended nuclei and slight vacuolization. A hematoxylin-eosin (H&E) stain of the smooth muscle and collagen was pink. However, further staining with aniline blue and Masson trichrome helps differentiate smooth muscle (which stains red and dark red, respectively) from collagen (which stains blue and blue or green, respectively).[2]

This case represents an atypical presentation of piloleiomyomas, which should be considered in the differential diagnosis of a patient with severe scarring from nodulocystic acne that does not respond to medical therapy.

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