

## CASE

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### Multiple painful nodules on the back

A 43-year-old middle-eastern woman was visited with a 15-year history of multiple painful cutaneous nodules on her back. The first lesion appeared on her back when she was 28 years old. As she aged, the lesions became larger, more numerous, and more painful with cold or physical contact. Her medical history was not significant.

The patient's medications included naproxen, calcium-D, and vitamins. Her family history was notable as her brother had developed similar cutaneous lesions. Physical examination revealed more than 30 pinkish papules, measuring up to 1 cm in diameter, in a grouped arrangement on her back (Figure 1). The complete blood cell count, serum chemistry profile, and serum erythropoietin levels were within normal limits. Abdominal ultrasonography was normal.

A skin biopsy specimen was obtained from a nodule on her back (Figure 2).

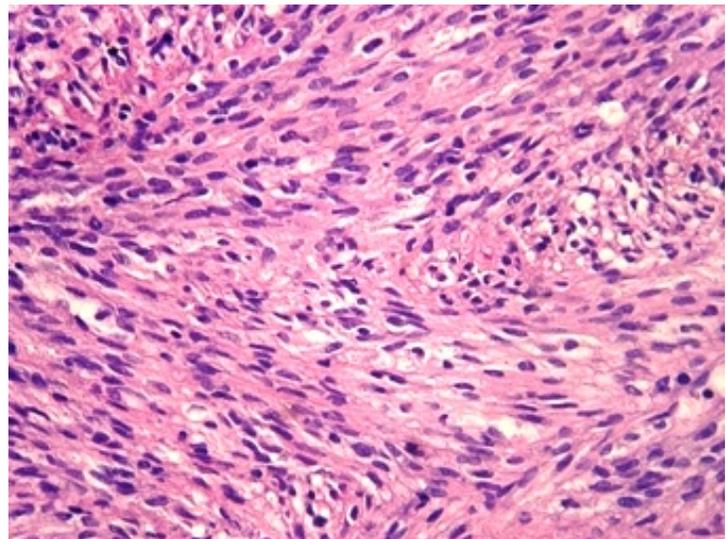
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### What is your diagnosis?

Move on to next page for the answer and discussion.



**Figure 1:** Pinkish papules, measuring up to 1 cm in diameter, in a grouped arrangement on her back



**Figure 2:** A dense proliferation of spindle-shaped cells with eosinophilic cytoplasm and long nuclei was located in the dermis. (H&E\*40).

## Diagnosis: Cutaneous Leiomyoma

### Microscopic findings

The epidermis of the skin biopsy specimen was normal. A dense proliferation of spindle-shaped cells with eosinophilic cytoplasm and long nuclei was located in the dermis. These interweaving bundles of cells surrounded the vessels and the pilosebaceous apparatus. There was no cytologic atypia.

Cryotherapy was performed and Amlodipine therapy (5 mg/d) was initiated, but the patient was unavailable for follow-up, and the efficacy of the treatment could not be evaluated.

### Discussion

Leiomyoma is a benign cutaneous neoplasm derived from arrector pili muscle (piloleiomyoma), mammillary, dartoic or labia/vulval muscle (genital leiomyoma), or the walls of blood vessels (angioliomyoma).<sup>1</sup> These firm intradermal nodules are reddish brown, range in size from several millimeters to 1 centimeter, and have a grouped linear or dermatomal arrangement.<sup>2</sup> They are more frequently localized to the face, back, and the extensor surface of the limbs, are usually painful or tender, and develop spontaneously or are induced by cold, emotions, touch, pressure, or trauma. Usually, they progress gradually. Transformation into leiomyosarcoma is rare.

Pilar leiomyomas consist of a proliferation of smooth muscles from the arrector pili muscle, without significant cytologic atypia.<sup>3</sup> These numerous dermal nodules have ill-defined margins and may extend to the subcutaneous fat. Many clinical features are associated with multiple cutaneous leiomyomas. Polycythemia due to the erythropoietin like activity of leiomyomas has been described.<sup>4</sup>

Gene mapping of both multiple cutaneous leiomyomas and hereditary leiomyomatosis with renal cell cancer has been localized to a common locus on 1q42.3-q43.<sup>5</sup> The candidate gene encodes

fumarate hydratase, an enzyme of the tricarboxylic acid cycle.<sup>6</sup>

Surgical excision of painful cutaneous leiomyomas can be performed, but the recurrence rate is high, particularly in patients with multiple lesions.<sup>2</sup> In some cases, cryotherapy, electrotherapy, and carbon dioxide laser ablation therapy have resulted in partial improvement of lesion-associated pain. In one case, oral gabapentin therapy substantially reduced the pain.<sup>7</sup>

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