

## Solitary Pilar Leiomyoma of the Finger: A Case Report

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### Abstract

A case of a solitary pilar leiomyoma of the finger in a 47-year-old female is presented. Although leiomyomas of the hand have been described, they typically originate from the smooth muscle of vascular structures. The present case is a leiomyoma derived from smooth muscle of the arrector pili muscle. This has not been reported in the literature. The lesion was excised, symptomatic improvement was achieved, and there are no signs of recurrence at early follow-up

**Keywords:** Arrector pili; Benign hand tumor; Leiomyoma

### Introduction

Leiomyomas of the hand occur rarely due to the scarcity of smooth muscle located in the hand [1]. Potential sources of smooth muscle tumors of the hand include vessel walls, sweat glands, and arrector pili muscles. Leiomyomas of the hand are predominantly vascular in origin (Boyd). Current literature does not describe any confirmed cases of a leiomyoma of the hand that originated from the arrector pili muscles.

### Case Report

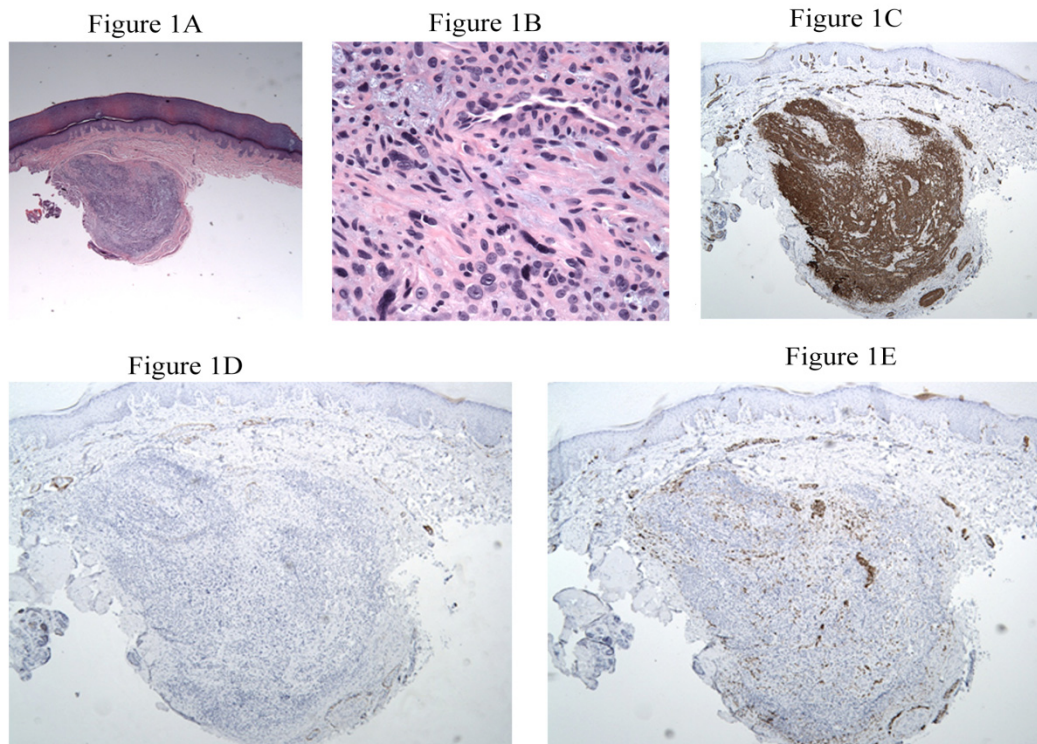
A 47-year-old right hand dominant female presented with a 3-year history of sensitive and painful area on the ulnar aspect of distal phalanx of the left small finger. Initially, this area had not been associated with a palpable mass, but the patient noted a recent history of a mass as well as increased pain over a 6-month period. The patient denied any injury to the area, or history of similar lesions. Past medical history was significant for hypertension, asthma, bilateral inguinal hernias status post laparoscopic herniorrhaphy 5 years prior, and a history of superior mesenteric artery dissection with an associated thrombus which was subsequently stented in approximately 1-year prior. Medications included clopidogrel, hydrochlorothiazide, aspirin, escitalopram, cetirizine, and fluticasone nasal spray.

Physical exam demonstrated a palpable 1mm nodule on the ulnar aspect of distal phalanx of the small finger. A pin point area of erythema was noted in the center of the nodule. The mass was immobile, tender to palpation, and a radiating pain in the fingertip was elicited with percussion of the mass. Capillary refill was less than 2 seconds. Sensation was slightly diminished in the fingertip, and motor and joint exam were normal.

The potential differential diagnoses of soft tissue tumors of the finger are numerous and included epidermal inclusion cyst, neuroma as the most likely source [2]. The patient was referred to physical therapy for desensitization, but she returned to clinic approximately 2 months after the initial presentation without symptomatic improvement. The decision was made to proceed with excision of the lesion.

An incision was made on the ulnar aspect of the small finger distal phalanx, where the mass was palpated. Blunt dissection was used to identify the most superficial aspect of the lesion. Tissue planes were developed between the lesion and the surrounding tissues. The digital artery and nerve were identified and were not found to be associated with the lesion. The neurovascular structures were carefully dissected freely. The lesion was then completely excised, and the specimen was sent to pathology. The wound was thoroughly irrigated, hemostasis was obtained. The skin edges were approximated with interrupted nylon sutures, and a sterile dressing was applied.

The final pathology was consistent with leiomyoma originating from the arrector pili muscle. It stained positive for smooth muscle actin and negative for S100 and epithelial membrane antigen by immunohistochemistry (Figures 1A, B, C, D, E).



**Figures 1(A-E):** A. The tumor was well circumscribed within the superficial to mid-dermis as seen with pillar type smooth muscle tumors of the skin. B. Slide showing cellular pleomorphism and rare mitoses. C. The tumor was strongly positive for smooth muscle actin. D. The tumor was negative for epithelial membrane antigen. E. The tumor was negative for S-100.

The patient was evaluated in clinic 2 weeks postoperatively. The sutures were removed, the wound had healed appropriately, and the patient noted symptomatic improvement. At a 12-month follow-up visit, the patient had no complaints, and there was no evidence of recurrence at early follow-up.

## Discussion

Leiomyomas are benign neoplasms derived from smooth muscle. They commonly occur in the uterus but are known to appear wherever smooth muscle is located including the gastrointestinal tract and cutaneous structures. Cutaneous smooth muscle can be found in the sweat glands, genital and areolar skin, vascular structures, and the arrector pili muscles associated with hair follicles [3]. Neoplasms derived from the latter are termed pilar leiomyomas. Although rare, hand leiomyomas have been well described. A review of the literature reveals that leiomyomas of the hand are predominantly vascular in origin, more specifically the tunica media layer of venous structures [4]. Pilar leiomyomas

are rarely found in the upper extremity and are not described in the hand in the current literature [1,4-6].

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