significant valgus deformity of the great toe was combined with a normal intermetatarsal angle in 13 feet, and in only one foot the intermetatarsal angle (11°) was slightly increased. Our experience supported the concept that congenital hallux valgus is a primary deformity and not a consequence of an increased intermetatarsal angle. Therefore, the above-described treatment is directed toward the primary deformity. When detected in infancy, we emphasize the importance of early treatment. Reports in the literature about the treatment of congenital hallux valgus in infancy are scarce.

Tachdjian7 advised passive stretching and corrective casts. We used corrective plastic splints, as they maintain the permanent corrective force on the deformity, and, in our opinion, make treatment shorter. The splint is light and tolerable by the infant, and the mother can handle it easily.

REFERENCES


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leiomyomas of the lower extremity

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Leiomyomas are solid or vascular tumors derived from smooth muscle, rarely reported in the lower extremity. They are divided into three main classifications: cutaneous, which includes tumors of pilor arrector and genital origins; vascular; and leiomyomas of deep soft tissue. The tumors arise singly or in groups, and follow the same distribution as smooth muscle: the skin and subcutaneous tissues, the arrector tissue of hair follicles, the sweat glands, and blood vessels, as well as in the erectile tissues of the nipple, scrotum, penis, and labia.1

In addition to the skin and deep soft tissues, leiomyomas can be found in the genitourinary, gastrointestinal, and respiratory tracts, the retroperitoneum, and even in the eye.2 The vast majority of cases occur in the uterus, where they are more commonly referred to as fibroids. Reports of leiomyomas prior to the development of electron microscopy may be inaccurate because of the difficulty in distinguishing this lesion from other tumors of muscular and fibrous origin. Because of their scarcity, solitary leiomyomas are usually not included in the differential diagnosis of a mass lesion in the lower extremity, although the astute clinician may have several clues which could lead to a correct preoperative diagnosis.

CASE REPORT

A 68-year-old man presented with a chief complaint of a painful mass in the left foot, medial to the great toe metatarsal-phalangeal joint. He noted a swelling for 15 to 20 months, but the mass had increased over the past 8 months. Although the lesion was not spontaneously painful, it was tender to touch, and he noted onset of a sensory deficit distal to the mass. He also complained of difficulty with shoe wear because of the prominence of the mass along the medial border of the foot. He denied any other pertinent illnesses.

On physical examination, the patient had normal pedal pulses. A 2 cm mass was evident in the region described, and was tender to
palpation. No discoloration was evident. The mass was mobile and firm. A Tinel’s test over the mass caused a sharp, shooting pain to radiate into the medial aspect of the great toe. Sensory examination revealed a deficit to light touch along the distribution of the dorsal digital nerve. Range of motion at the metatarsal-phalangeal joint was normal. Radiographs showed a soft tissue swelling without calcification. Laboratory tests were all within normal limits. Differential diagnosis included ganglion, neurora, lipoma, neurofibroma, tophus, and glomus tumor.

On April 15, 1988, an encapsulated mass of white tissue was excised. The mass was long directly over the dorsal digital artery and nerve, which had to be carefully dissected free. At 8-month follow up, the patient was asymptomatic, with no evidence of recurrence. His sensory examination returned to normal.

A 1.5 cm × 1 cm × 1 cm well-circumscribed mass was received. Cut surface revealed a homogenous white-tan, finely granular soft tissue. No areas of calcification or necrosis were appreciated. Hematoxylin-eosin stained slides showed the tumor to be composed of bundles of spindle-shaped cells with eosinophilic cytoplasm and blunt-ended nuclei, characteristic of smooth muscle cells. A moderate amount of myxoid ground substance was present between cells. There was no pleomorphism or mitotic activity. Immuno-histochemical studies showed the tumor to be positive for desmin, but negative for S-100 protein and fibronectin.

Ultrastructurally, both spindled and round cells were identified. Numerous dense bodies and intermediate filaments were present within the cytoplasm of some of the cells. Prominent rough endoplasmic reticulum and free ribosomes also were seen. Terminal plates and pinocytotic vesicles were present along the plasma membranes. A basal lamina was present overlying the surface of the cell. A leiomyoma was diagnosed.

**DISCUSSION**

In 1937, Stout² wrote an extensive review on solitary cutaneous and subcutaneous leiomyomata, describing the anatomic distribution
Fig 5: Photomicrograph of leiomyoma showing elongated, blunt-ended nuclei within a prominent myxoid stroma. Hematoxylin and eosin.

Fig 6: Electron microscopy of leiomyoma. Numerous dense bodies and intermediate filaments are noted within the cytoplasm. Terminal plates and pinocytic vesicles are identified along the cell membrane.

of 95 cases reported in the literature. Of these, 37 cases (39%) arose in the lower extremity, and four were on the foot. Stout reported that there was no particular age of onset or predisposition by race or sex. He noted that the tumors were found more commonly on extensor surfaces and grew quite slowly and painlessly at first, often becoming painful later in the clinical course. The pain, which is often described as “sharp” or “stabbing,” can occur spontaneously or with changes in temperature. Some patients complain only of localized tenderness. Nerve fibers are rarely identified with a leiomyoma histologically, despite the clinical similarity of symptoms to neuromas. Some authors believe that violent contraction of the smooth muscle in the tumor causes attacks of paroxysmal pain.\(^3\) Solitary leiomyomas are generally small tumors, measuring a few millimeters in diameter, but can grow to very large proportions. Drew reported a leiomyoma of the upper extremity which measured 30 cm x 29 cm x 12 cm and weighed 19 lbs.\(^4\) The larger tumors are generally found in the deep soft tissue compartments. Changes in the size of the tumor have been associated with pregnancy. Duhig and Ayer noted that the vascular tumors have a predilection for middle age, and occur twice as commonly in women as in men.\(^5\) These findings led them to postulate a possible hormonal role in the development of the vascular type of leiomyoma. Forty-eight of 83 patients in their series had leiomyomas in the lower extremity (58%).

Since Stout’s original paper, cases of leiomyoma of the foot have been reported infrequently in the literature.\(^6,9\) Bulmer reported an additional 10 cases of solitary leiomyomata in 1967.\(^10\) Seven of these were in the lower extremity, and four involved the foot. As in Stout’s paper, none of the cases were diagnosed correctly preoperatively. Five of the seven patients with lower extremity tumors reported pain preoperatively. In three of the cases, calcification was evident on preoperative radiographs. Two of the tumors recurred despite seemingly adequate excision and benign histopathology.

**Conclusion**

Leiomyomas of the lower extremity are uncommon but should be included in the differential diagnosis of any extremity mass legion. Complaints of paroxysmal pain, intolerance to heat or cold, and rapid growth after a period of stability differentiate this lesion from others. Radiographic calcification, when present, also can help in the differential diagnosis. Although generally small, leiomyomas can grow to large proportions, particularly in the deeper soft tissue compartments. Surgical excision is the treatment of choice, and recurrence is rare.

**References**


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RESECTION OF PLASMOCYOTMA IN A PHALANX AND REPLACEMENT WITH AN AUTOGENOUS TOE PHALANX

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Occasionally, a portion of a phalanx must be removed. A number of methods can be used. \cite{1-5} Ray resection, bone implant, iliac bone graft, and allograft are some available procedures. The patient described below underwent resection of a plasmocytoma and replacement with an autogenous toe phalanx with a 25-year period of observation.

CASE REPORT

A 42-year-old right-hand dominant man was seen in April 1961 with a lesion of the proximal end of the proximal phalanx of the right ring finger (Figs 1A-B). He had resection of his eighth rib in 1958 and a lesion removed from his right leg in 1960. Both lesions were plasmocytomas histologically.

On April 17, 1961, the finger was opened through a longitudinal dorsal incision over the proximal phalanx of the right ring finger. At the same time, the proximal phalanx of the right second toe was removed and saved. The proximal portion of the base of the right ring finger was removed. The phalanx from the second toe was cut to fit the space left after removal of the tumor. It was fixed with two smooth pins (Figs 2A-B). One pin was removed on May 25, 1961 and the second on July 18, 1961.

The patient had a left proximal subcutaneous tumor over the left tibia removed in 1977 and later that year had a testicular resection for a tumor. In 1978, he underwent resection of a posterior articular subcutaneous tumor, in 1981 had a right acromion mass was removed, and, in 1982, a left lower abdominal mass was removed. All tumors were plasmocytomas. Radiation was used following tumor resection. The patient died February 2, 1986 at age 67 of complications of old age. The end result after 25 years is seen in Figures 3A-B, and Figures 4A-B. His function and strength were near normal and he

had an excellent autograft result. Once an autograft heals it will remain and serve a useful function. This patient had no symptoms referable to his second toe from which the proximal phalanx was removed.

There was subluxation of the metacarpophalangeal joint of the ring finger, undoubtedly associated with degeneration of the articulating joint surfaces which was probably inevitable. The range of motion of the joint was 0° to 80°, compared to 0° to 90° on the left hand. The tumor was simply resected and replaced by the autograft. No attempt was made to replace ligaments or capsule. Despite this, the patient's function and strength were near normal.