



Absence of fibulae and marked varus deformity. All 5 rays are present.



Marked equinus deformity with talus and calcaneum almost parallel to the longitudinal axis of the tibia.

chi 1979). Bilateral congenital complete absence of the fibulae associated with equinovarus deformity, may be a distinct syndrome not previously reported.

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References

Achterman C, Kalamchi A. Congenital deficiency of the fibula. *J. Bone Joint Surg (Br)* 1979; 61: 133-7.

Coventry M B, Johnson E W Jr. Congenital absence of the fibula. *J. Bone Joint Surg (Am)* 1952; 34: 941-5.

Farmer A W, Laurin C A. Congenital absence of the fibula. *J Bone Joint Surg (Am)* 1960; 42: 1-12.

Harmon P J, Fahey J J. The syndrome of congenital absence of the fibula. Report of three cases with special reference to pathogenesis and treatment. *Surg Gynecol Obstet* 1937; 64: 876-8.

Thomson T C, Straub L R, Arnold W D. Congenital absence of the fibula. *J Bone Joint Surg (Am)* 1957; 39: 1229-37.

Westin G W, Sakai D N, Wood W L. Congenital longitudinal deficiency of the fibula. *J Bone Joint Surg (Am)* 1976; 58: 492-6.

Degenerative tear of the tibialis anterior tendon after corticosteroid injection—augmentation with the extensor hallucis longus tendon, case report

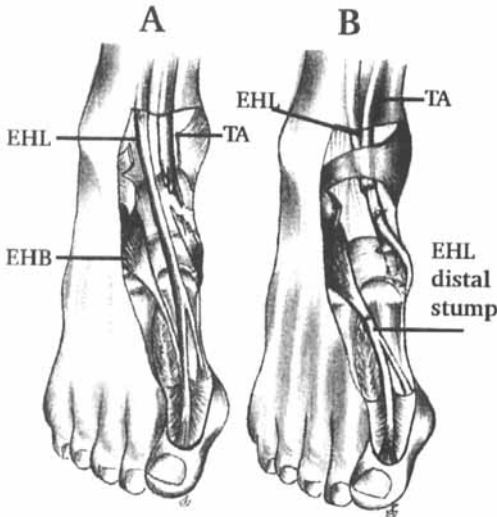
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A 52-year-old physician, active in recreational sport, suffered pain for 2 months in the dorsum of his left foot. Bethamethasone 7 mg was injected in the anterior tibialis tendon sheath. 4 months later and 2 weeks before his admission, when climbing stairs, his left foot hit the stair's edge, sharply plantiflexing the foot. The pain increased and he could not extend the foot.

The tibialis anterior tendon was tender and a gap was felt. A presumptive diagnosis of tear of the tibialis anterior tendon was suggested and confirmed by MRI.

We decided to repair the lesion. During the operation, it became clear that a direct repair was not feasible due to severe degeneration of both stumps. The extensor hallucis longus tendon was transferred and sutured parallel to the tibialis anterior proximal stump. The conjoint tendon was passed through a tunnel in the medial cuneiform bone and then sutured back to itself. Thus, the extensor hallucis longus bridged the gap, while keeping the important insertion of the tibialis anterior tendon into the medial cuneiform bone. The extensor hallucis brevis was cut



The tear in the tibialis anterior tendon (A). Restoration (B) of the tibialis anterior insertion to the medial cuneiform. The extensor hallucis brevis insertion to the proximal phalanx was sacrificed, but the important distal phalanx dorsiflexion is performed by that muscle. TA tibialis anterior, EHB extensor hallucis brevis, EHL extensor hallucis longus.

and sutured end-to-end to the distal stump of the extensor hallucis longus. The lower limb was immobilized in a below-knee cast for 2 months with partial weight bearing. Motion exercises were begun later on.

At follow-up 1.5 years later, the foot was pain-free and the patient could extend the ankle and big toe. The strength of ankle dorsiflexion was 4/5 and the strength of big toe extension was rated 5/5.

Discussion

Subcutaneous rupture of the tibialis anterior tendon has been recently reviewed by Bernstein (1995). He found only 24 reported cases, which were commonest in men aged over 45 years. The trauma was usually minor, indicating a previously damaged tendon. In the patient with low functional demand, a period of cast immobilization and non-weight bearing may be sufficient (Moskovitz 1971, Benzakein et al. 1988), although full dorsiflexion strength may not be recovered.

The patient with high functional demand will benefit from an operative repair of the tendon (Bernstein 1995). Direct end-to-end tendon repair (Mensor and Ordway 1953) is recommended by Greer-Richardson (1992). When the repair is under high tension, a sliding lengthening of the tibialis anterior proximal stump can be employed (Kashyap and Prince 1987).



Maximal left ankle and big toe dorsiflexion 1.5 years postoperatively.

Extensive degenerative changes in the tendon substance, when operative treatment is delayed or because of corticosteroid injections, can compromise an end-to-end repair. The extensor hallucis longus tendon—which has an action similar to that of the tibialis anterior tendon—can be used to bridge the gap and reconstruct the medial cuneiform bone insertion. Tenodesis by suturing the extensor hallucis brevis to the distal extensor hallucis longus stump restores of the big toe extension.

In our patient, the function after this delayed repair was comparable to that after acute end-to-end repair.

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References

- Benzakein R, Wakim A, DeLauro T M et al. Neglected rupture of the tibialis anterior tendon. *J Am Pod Med Assoc* 1988; 78: 529-32.
- Bernstein R M. Spontaneous rupture of the tibialis anterior tendon. *Am J Orthop* 1995; 24: 354-6.
- Greer-Richardson E. Disorders of tendons. In: Campbell's operative orthopaedics (Ed. Crenshaw A H). Mosby Year Book, St. Louis 1992.
- Kashyap S, Prince R. Spontaneous rupture of the tibialis anterior tendon. *Clin Orthop* 1987; 216: 159-61.
- Mensor M C, Ordway G L. Traumatic subcutaneous rupture of the tibialis anterior tendon. *J Bone Joint Surg (Am)* 1953; 35: 675-80.
- Moskovitz E. Rupture of the tibialis anterior tendon simulating peroneal nerve palsy. *Arch Phys Med Rehabil* 1971; 52: 431-3.