

RUPTURES OF THE TIBIALIS ANTERIOR TENDON

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Closed rupture of the tibialis anterior tendon is an uncommon occurrence.¹⁻¹⁹ The first case of a tibialis anterior tendon rupture was published by Bruning in 1905.¹ The first published report in the American literature was by Burman in 1934.² In 2000, Trout et al performed an extensive literature review and noted approximately 49 cases of closed anterior tendon ruptures, with 42 of the cases occurring in males.³ Anzel reviewed 1014 cases of tendon ruptures with only 10 involving the anterior tibial tendon; all 10 were secondary to open injuries.⁴ The largest study was performed by Markarian in which 16 cases of tibialis anterior tendon ruptures were reported, including 10 closed ruptures and 6 lacerations.⁵

Rupture of the tibialis anterior tendon usually occurs in males older than 45 with no antecedent history of trauma.^{2,6,7,8} Patients, typically, present months after the injury with minor symptomology. The tibialis anterior tendon may rupture spontaneously or by open or closed trauma^{1,9} Table 1. The patient with closed trauma usually presents with a bulbous mass at the level of the ankle joint, with no palpable tendon distal to the mass. The patient complains of frequent tripping or a “slapping” of the foot during gait.^{2,6}

Ouzounian and Anderson reviewed 12 cases of tibialis anterior tendon ruptures and classified the ruptures into two categories: (i) atraumatic, seen in low functioning, elderly patients and (ii) acute traumatic rupture, also seen in elderly patients. Atraumatic injuries, generally

present with a history of a painless foot drop that spans several months and are typically treated conservatively with bracing and/or observation. Acute traumatic ruptures are commonly in athletic injuries. The patients typically complain of acute pain, which subsides quickly.¹³ The trauma is often minimal.

Markarian et al evaluated patients with tibialis anterior tendon ruptures and also developed two categories: “acute” and “acute on chronic” anterior tibial tendon ruptures.⁵ Clinically, acute ruptures will have an associated distal tibia fracture or laceration and an discontinuity noted within the tendon. On the other hand, acute on chronic ruptures are closed injuries caused by sudden plantarflexion and eversion on a dorsiflexed foot. The patient will complain of a sharp pain at the anterior aspect of the ankle. After the initial incident, the patient will have difficulty ambulating, but will eventually resume ambulation with a noticeable gait abnormality with decreased coordination, foot slap and frequent stubbing of toes. Patients will be unable to dorsiflex their feet with pain noted along the course of the tendon.⁵

Both conservative and surgical treatments have been advocated for closed ruptures. Conservative treatment is reserved for elderly patients, patients with chronic ruptures and less active patients. Surgical intervention is recommended as the treatment of choice for young and active patients or those with acute tendon ruptures.

Table 1

CAUSES OF TIBIALIS ANTERIOR TENDON RUPTURES

Open, Direct Trauma

- a.) Lacerations
- b.) Contusions that penetrates skin
- c.) Degloving injuries
- d.) Stab wounds

Closed, Indirect Trauma

- a.) Blunt injuries
- b.) Contusions that does not penetrate skin
- c.) Forced plantarflexion

Spontaneous Ruptures

- a.) Corticosteroid injections
- b.) Diabetes Mellitus
- c.) Rheumatoid Disease
- d.) Inflammatory Arthritis
- e.) Gout
- f.) Hyperparathyroidism
- g.) Senility
- h.) Impingement

ANATOMY

The tibialis anterior is the largest anterior compartment muscle and provides dorsiflexion of the ankle joint and inversion of the subtalar and midtarsal joints primarily during swing phase, heel strike and early stance phase of the gait cycle.^{3,20,22} The tibialis anterior muscle, which is innervated by the deep peroneal nerve, originates from the proximal half of the anterior tibia, lower lateral tibial condyle, lateral tibia and the interosseous membrane and inserts on the plantar medial base of the first metatarsal and the plantar medial aspect of the medial cuneiform.²⁰ The tibialis anterior muscle becomes tendinous at the lower and middle one third of the tibia before becoming enclosed in a synovial sheath which passes beneath the superior and inferior extensor retinaculum to its insertion.²¹

Peterson et al performed an extensive histological study showing the tibialis anterior tendon to have a complete vascular network, which extends from the musculotendon junction to the tendon's insertion.²³ Peterson noted that there is a hypo-vascular zone at the anterior half of the tendon covered with a layer of oval shaped cells similar to chondroid cells measuring approximately 45 – 67 mm.²⁴ Controversy, however, exists regarding this area of hypovascularity. Geppert et al reported that there were no hypo-vascular regions. They analyzed the microvasculature of the tibialis anterior tendon and demonstrated that the intratendinous vascular supply of the tendon arises from the anterior tibial artery proximally and the medial tarsal arteries distally.¹⁰

CLINICAL FEATURES

Tibialis anterior tendon ruptures typically present in males older than 45 years of age. The patient usually relates a minor trauma, consisting of an excessive or forced unexpected plantarflexion, which eccentrically stresses the contracting tibialis anterior muscle.^{4,7,20} Patients may complain of chronic foot pain, dull and aching in nature, with apparent reduction of active inversion and dorsiflexion of the ankle compared to the contralateral side.^{3,9,12,13,20} Typically, the patient will not seek treatment after the initial injury because of the mild nature of the symptoms.^{7,11,20} In fact, Markarian et al studied 16 cases that illustrated an average of a 10-month delay in diagnosing the tibialis anterior tendon rupture.^{5, 20}

Closed tibialis anterior ruptures often present with a bulbous mass at the anterior medial aspect of the ankle joint due to the proximal retraction of the ruptured tendon that becomes adherent to the subcutaneous tissue.¹¹ Occasionally, a defect may be palpated. Active dorsiflexion of the ankle and manual muscle strength of

the tibialis anterior is usually less compared to the contralateral side.²²

Several authors report difficulty with gait manifested by a “foot slap” upon heel contact or steppage type gait.^{3,20,22} Patients will have difficulty walking on their heels and may trip on occasion due to the inability of the foot to clear the ground. Gait examination also reveals an everted heel during swing phase and extensor substitution. Dorsiflexion at the ankle joint will occur by utilization of the extensor hallucis longus and extensor digitorum longus muscles²⁰ (Figure 1).

When evaluating tibialis anterior tendon ruptures, it is important to rule out different pathologies including L4-L5 radiculopathy, peroneal nerve palsy and tibialis anterior tendonitis. Soft tissue tumors, which may mimic the bulbous mass sometimes seen in tibialis anterior tendon ruptures, may represent giant cell tumor, fibroma of the tendon sheath, ganglion cyst, elastofibroma, lipoma, liposarcoma and epidermal inclusion^{6,25} (Figure 2A, B).

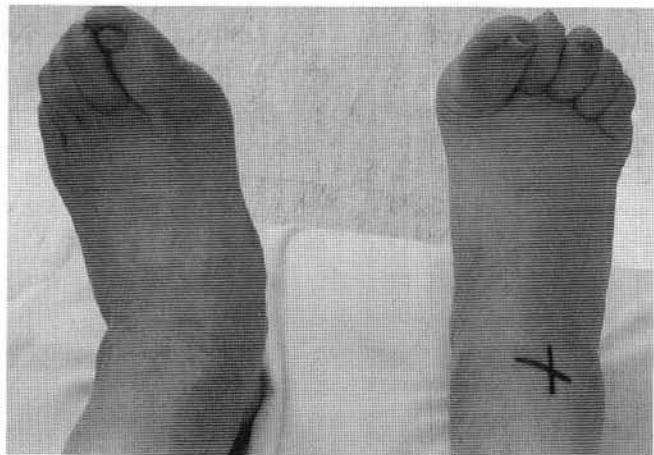


Figure 1A. A 65 year old male with IDDM and peripheral neuropathy who related frequent tripping with a noticeable dropfoot; Patient and spouse questioned the possibility of a stroke. Note the dorsiflexed digits on the right foot due to extensor substitution utilizing the EHL and EDL muscles.

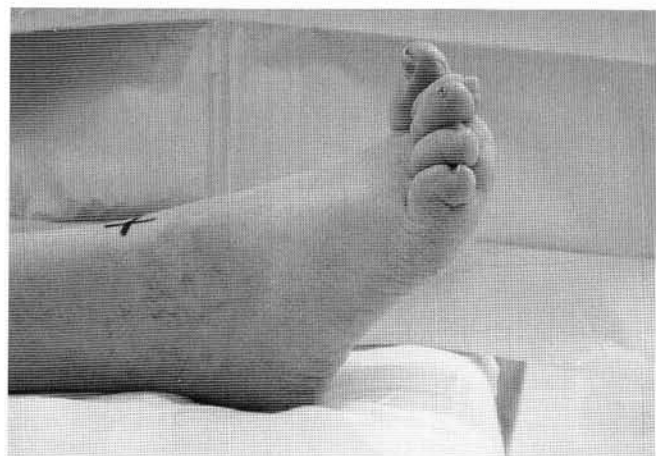


Figure 1B.

PATHOPHYSIOLOGY

Normal tendons do not rupture and there are specific pathological findings that predispose tendons to rupture.⁴ Kannus and Jozsa biopsied 891 spontaneously ruptured tendons, mostly occurring in Achilles tendon and biceps brachii muscle tendons comprising 79% of the study. A small percentage of the study included the tibialis anterior tendon. They noted four types of degenerative changes that occur in all tendon ruptures, either alone or in combination: (i) hypoxic degenerative tendinopathy, (ii) mucoid degeneration, (iii) tendolipomatosis and (iv) calcifying tendinopathy.¹⁵ It has been suggested that hypoxic degenerative tendinopathy occurs due to a decrease in arterial blood flow to the tendon, although this finding has not been established. Histologically, mucoid degeneration demonstrates thin collagen fibrils, large vacuoles and accumulation of glycoaminoglycans between the collagen fibers. Tendolipomatosis, which is a benign soft tissue tumor, decreases the tensile strength, which may disrupt the collagen fibers. Calcifying tendinopathy initially begins with fraying and degeneration of the tendon and, eventually, calcium deposits within the tendon make the tendon susceptible to rupture. In every rupture examined by Kannus and Jozsa, either one or a multiple of the above-mentioned degenerative changes were present.¹⁵

Spontaneous tendon ruptures may occur due to many pathological processes, including inflammatory arthritis, gout, rheumatoid arthritis, local steroid injections, hyperparathyroidism, osseous impingement, diabetes, systemic lupus erythematosus, chronic acidosis due to lead nephropathy, senility and degeneration.^{3,14,20} Patten and Pun reported a case of spontaneous rupture of the tibialis anterior tendon secondary to gout.



Figure 2A. Palpable soft tissue mass anterior aspect of the ankle which may be mistaken for the bulbous mass that may be present with tibialis anterior tendon ruptures.

Histologically, there were chalky white deposits within the substance of the tibialis anterior tendon, which displaced the normal fibers of the tendon.⁹ In addition, Velan and Hendel presented a case in which 7 mg bethamethasone was injected in the tibialis anterior tendon sheath and 4 months following therapy, the patient ruptured his tibialis anterior tendon.²⁶ Aydingoz presented a case involving a rupture of the tibialis anterior tendon in a patient with psoriasis. They felt that psoriasis as well as the topical corticosteroid cream, which was being applied for the psoriatic lesions on both shins, may have contributed to the tendon rupture.¹⁶

Specific histopathological reports of tibialis anterior tendon ruptures can be found in the literature. Kayshap and Prince identified the tibialis anterior rupture site as a fusiform swelling that was filled with “putty like necrotic material”.¹⁴ Lapidus inspected the tibialis anterior tendon ruptures and found that on histological examination, extensive aseptic necrosis was present, along with hemorrhage at the necrotic area of the tendon.² Histologically, mucoid degeneration and gross fibrillation have been identified.² Kausch mentioned that in the elderly the tibialis anterior tendon has a tenuous blood supply in conjunction with decreased elasticity which leaves the tendon susceptible to rupture. Also, a decrease in reaction time and a delay in muscular contraction can contribute to anterior tibial tendon ruptures in the elderly.⁸

Kelkian mentioned that the tibialis anterior tendon rupture usually occurs within a triangular space formed by the medial attachment of the superior and inferior retinaculum.²¹ A search for an underlying disease entity may explain in full or part why a rupture occurs in some patients.

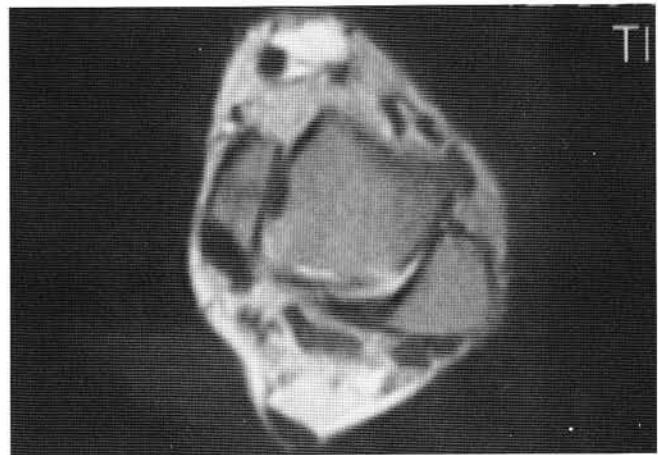


Figure 2B. Coronal T2 MRI image which shows increased signal intensity surrounding the tibialis anterior tendon consistent with a fluid filled inflammatory mass around the tendon. Tendon function was intact.

DIAGNOSTIC STUDIES

Although clinical evaluation is the cornerstone of tibialis anterior tendon pathology, ancillary studies can confirm the diagnosis and define the extent of the rupture. Radiographs may show an increase in soft tissue density that is well demarcated and isolated to the anterior aspect of the ankle, best visualized utilizing the lateral and oblique ankle views.^{2,27} Radiographs will also aid in ruling out occult fractures as well as avulsion type injuries.²² In addition, other osseous pathologies such as degenerative joint disease will readily be seen on conventional radiographs.

Magnetic resonance imaging (MRI) is an excellent tool to visualize soft tissue pathology and confirm a rupture or other disease of the tibialis anterior. Normal tendons will have decreased signal intensity in both T1 and T2 weighted images. A gap at the tibialis anterior tendon rupture site will be evident on a MRI with interposition of fat, fluid and/or scar tissue¹⁷ (Figure 3A,B). Occasionally, intrasubstance increase in signal intensity will be seen with fusiform thickening of the tendon.¹⁷ The individual interpreting the MRI should be aware of the “magic angle”, which may occur in the T1 weighted image when the tendon is positioned 55 degrees from the magnetic field.²² This phenomenon may show an uptake consistent with a tendon tear.²⁷ Other pathologies, such as soft tissue masses, peritendonitis, intratendinous deposits and enthesitis can

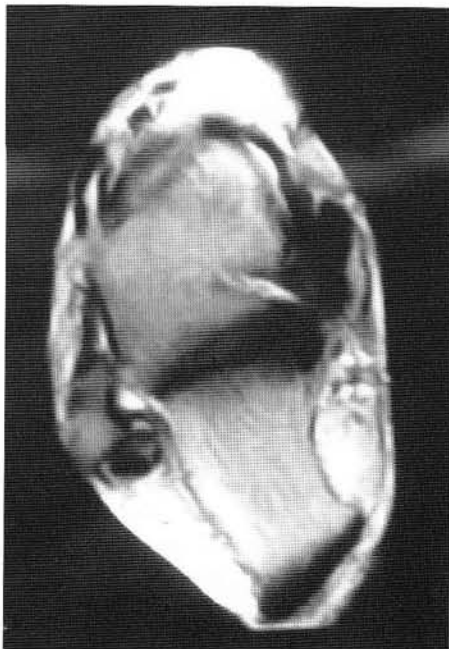


Figure 3A. Coronal T2 MRI image illustrating increase signal intensity at the level of the superior extensor retinaculum consistent with a complete rupture of the tibialis anterior tendon.

also be appreciated on MRI. Quality of the image and interpretation by a skilled and knowledgeable radiologist is a prerequisite to successful MRI evaluation.

Computed tomography (CT) scans may also be utilized in diagnosing tendon ruptures. Normal tendons appear homogenous, round to oval and less intense than muscle. Evaluation of a partial rupture reveals an increase in the width of the tendon with radiolucency noted within the tendon. Complete ruptures, on the other hand, will show a defect in the tendon being filled with fat or fluid (e.g. hematoma).²² The disadvantages of a CT scan include the inability to visualize tendons in the coronal and sagittal planes and the decreased reliability of the scans for structures that are not osseous. CT is clearly inferior to MRI for identifying tendinopathy.

Ultrasonography, is a relatively inexpensive and noninvasive test, and may show a retracted stump and hypoechoic effect indicating discontinuity of the tendon.^{8,17} Sonograms can show frank tears as well as intratendinous ruptures. Ultrasonography is also advantageous since this test may be used on patients with cardiac pacemakers and orthopedic implants which are, otherwise, contraindicated in magnetic resonance imaging.²² A renewed interest in ultrasonography is being seen and is likely to see increased interest in the future. It is unlikely to replace MRI as the study of choice although it has definite indications. The cost of ultrasonography may make it preferable to MRI.

Tenography, which is a visualization of tendons within a tendon sheath utilizing a radiopaque dye, is a technically difficult and invasive study. Tenograms may yield false negatives when the dye is deposited incorrectly into an adjacent tendon sheath. False positives may result



Figure 3B. Sagittal STIR MRI image showing increased signal intensity along the tibialis anterior tendon sheath with frank complete rupture and proximal retraction of the tendon to level of the superior extensor retinaculum.

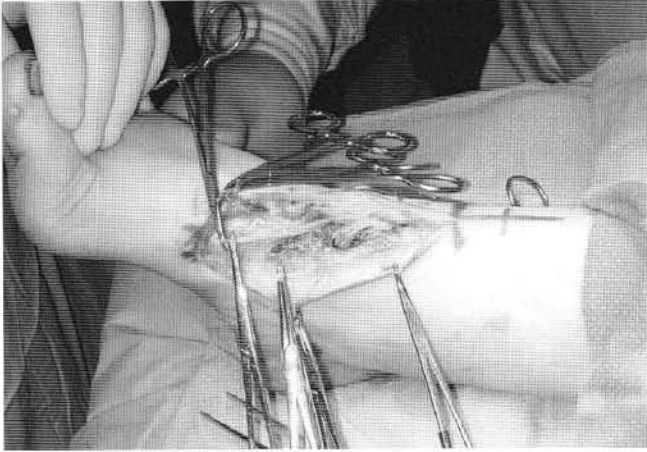


Figure 4A. Rupture of the tibialis anterior tendon with a 6 cm gap. Notice the bulbous, hemorrhagic proximal stump.



Figure 4B. Primary repair of the tibialis anterior tendon with extensor hallucis longus tendon transfer.

if the dye is injected outside the tendon sheath, resulting in the appearance of a rupture.²² Tenography is mentioned for historical purposes only. It may be of value in cases when contraindication(s) precludes a more sophisticated study such as an MRI or ultrasound.

TREATMENT

Although the treatment for tibialis anterior tendon ruptures is somewhat controversial, most literature recommends conservative management for chronic ruptures, as well as, ruptures occurring in the elderly or sedentary patients. Surgical management is indicated for younger, more active patients who present within 3 to 4 months after injury.^{22,24} The age of the patient, functional status, stage of rupture and chronicity should be considered when developing a treatment plan. Treatment of this clinical entity must be tailored to the individual.

Conservative therapy may consist of shoe modifications, bracing and a nonweightbearing short leg cast with the foot in a dorsiflexed and inverted position for 4 to 6 weeks.²² An ankle foot orthosis may be indicated in these patients after therapy due to some loss in muscle strength and ankle joint dorsiflexion.

Several surgical techniques have been described to treat tibialis anterior tendon ruptures. These techniques include direct primary repair, tendon grafts, tendon transfers and tendon reconstruction.

A few authors recommend direct primary repair for acute tibialis anterior ruptures.^{5,11,20} Primary tendon repair may be accomplished with nonabsorbable suture utilizing Bunnel, Kessler-Tajima, Krakow or modified Kessler suture techniques.^{22,28}

Multiple procedures have been utilized for tibialis



Figure 4C. Closure of the deep fascia along the entire course of the repaired tendon. Patient went on to a full functional recovery.

anterior tendon ruptures that are not amenable to direct primary repair. Tendon grafts are a viable surgical option to bridge a large deficit of a ruptured tibialis anterior tendon. Mensor and Ordway suggested the use of the extensor tendon of the fifth digit as a free tendon graft.²⁹ Forst et al used the peroneus brevis tendon as a free graft to bridge a 9 cm deficit.^{1,14} Beckers and Verburg utilized a plantaris tendon graft in conjunction with the fourth tendon of the extensor digitorum longus muscle to reestablish tibialis anterior tendon function.¹ Gaulrapp

Table 2

SURGICAL REPAIR OF TIBIALIS ANTERIOR TENDON RUPTURES

| Name | Year | Technique | # of cases | Outcome |
|------------------------|------|--|------------|--|
| Bruning | 1905 | Primary repair | 1 | Good |
| Burman | 1934 | Primary repair | 1 | Good |
| Lapidus | 1941 | 1. Anterior tibial tendon free graft 2. Free Tendon graft from extensor digitorum longus to 5th digit | 2 | 1. Good 2. Minor loss of motion, Fair |
| Moberg | 1947 | 1. Primary repair 2. Primary repair 3. Primary repair | 3 | 1. Good 2. Limited dorsiflexion 3. Good |
| Mensor and Ordway | 1953 | 1. Tendon sutured to navicular with stainless steel wire 2. Primary repair | 2 | 1. Good 2. Good |
| Meyn | 1975 | Primary repair | 1 | Good |
| Dooley et al | 1980 | 1. Primary repair 2. Primary repair 3. EHL transfer | 3 | 1. Good 2. Good 3. Poor |
| Kashyap and Prince | 1987 | 1. Proximal slide lengthening of tendon with primary repair of tendon ends | | Good |
| Benzakein et al | 1988 | Removed fibrous mass | 1 | Good |
| Rimoldi | 1991 | Primary repair | 1 | Good |
| Barnett and Hammond | 1991 | Primary repair | 1 | Good |
| Stuart | 1992 | Primary repair | 1 | Good |
| Ouzounian and Anderson | 1995 | 1. Proximal tendon lengthened and reinserted to bone 2. EHL transfer 3. EHL transfer/sliding tendon repair 4. Primary repair 5. Reinsertion of tendon to cuneiform 6. Interposition EDL tendon graft 7. Interposition EDL tendon graft | 7 | 1. Improved function 2. Improved function, slight weakness 3. Improved function, EHL lag 4. Full function 5. Full function 6. Full function 7. Improved function |
| Forst et al | 1995 | Free Peroneus brevis tendon graft | 1 | Good |
| Velan and Hendel | 1997 | EHL transferred and augmented to proximal stump of tibialis anterior tendon | 1 | Good |
| Kauch and Rutt | 1998 | Primary repair | 1 | Good |
| Miller and Mahan | 1998 | Proximal advancement of anterior aspect of tendon and reinserted with Mitek anchor | 1 | Good |
| Markarian et al | 1998 | 1. Direct repair of tendon through a bony tunnel in medial cuneiform 2. Primary repair 3. Repair tendon to navicular with mitek anchor 4. Primary repair 5. Repair of tibialis anterior/EHL transfer to medial cuneiform. Tenodesis to EDB. Revisional TMT arthodesis 6. Tibialis anterior reconstruction. EDL 2, 3 tendon graft to bridge deficit. Tenodesis distal stump to EDB 7. Repair of tibialis anterior with EHL transfer and tenodesis of distal stump to EDB 8. Primary repair | 8 | Questionnaire Scores 1. Poor 2. Good 3. Good 4. Good 5. Fair 6. Good 7. Good 8. Good |
| Burks and Lundeen | 1999 | Primary repair | 1 | Good |
| Trout et al | 2000 | Proximal advancement flap from central 1/3 of tendon, tenodesed to medial cuneiform with 4-0 screw and acetyl washer | 1 | Good |
| Otte et al | 2002 | Longitudinal flap created central 1/3 of tendon rotated posteriorly and distally to bridge deficit. | 1 | Good |

and Heimkes used the peroneus tertius as free graft to bridge an old tibialis anterior rupture.³

Tendon transfers constitute another surgical modality to help reestablish the function of the tibialis anterior muscle. A few authors report transferring the extensor hallucis longus tendon to the tibialis anterior tendon with the distal EHL stump tenodesed to the extensor digitorum brevis^{5,11,13,22,26} (Figure 4A, B, C). The Kelikian procedure transfers the second and third extensor digitorum longus to the tibialis anterior tendon and involves tenodesis of the distal stumps of the second and third extensor digitorum longus to the extensor digitorum brevis.^{5,21} Kelikian also utilized the posterior tibial tendon by redirecting the tendon through the interosseous membrane and reattaching it to the distal aspect of the tibialis anterior tendon or to the medial or intermediate cuneiform.²¹

Reconstruction of the tibialis anterior tendon is another viable surgical option. Trout et al utilized the central one third of the tibialis anterior tendon to bridge the ruptured deficit. The flap was rotated posteriorly and distally and tenodesed into the medial cuneiform utilizing a 4-0 mm cancellous screw and a polyacetal washer.³ Mensor and Ordway sectioned the navicular into a "trap door" and placed the tibialis anterior tendon into the navicular and fixated with stainless steel wire. Kashap and Prince utilized a slide lengthening of the proximal aspect of tibialis anterior tendon, which was augmented to the distal stump of the tendon.¹⁴ Miller and Mahan presented a case in which the tibialis anterior tendon ruptured at its insertion. They split the anterior portion of the tibialis anterior tendon in the frontal plane and advanced the tendon distally and sutured the tendon to its insertion utilizing Mitek anchors.¹⁹

Although there are different modalities in treating tibialis anterior tendon ruptures, the goal of the physician is to reestablish the function of the tibialis anterior muscle and prevent functional abnormalities (Table 2).

PROGNOSIS

Late sequelae has been associated with conservative treatment for tibialis anterior tendon ruptures which includes, but is not limited to, mild to moderate flatfoot deformity, decrease in ankle joint range of motion, lack in coordination or a slapping type gait and achilles tendon contraction.^{3,20} A literature review by Trout et al showed that approximately 23.5 % of patients treated conservatively experienced the complications mentioned above.³ Markarian found no difference in functional outcome in the elderly patients utilizing conservative versus surgical

methods. Markarian also found that the group treated conservatively had a higher incidence of lesser digit deformities.⁵ Dooley et al noted that if treatment is delayed more than three months, the patient loses dorsiflexory strength and ankle joint range of motion¹¹ (Table 3).

Trout et al found that 4 out of 32 (12.5%) cases of closed tibialis anterior ruptures that were treated surgically experienced complications, which resulted in a decrease in ankle joint dorsiflexion.³ Of the 24 cases Bernstein reviewed, 44% had "some to full" recovery and 33% had no recovery with conservative treatment. On the other hand, 100% of patients treated surgically had "some to full" recovery.² Meyn reviewed 12 cases of closed tendon ruptures in which six cases were treated surgically. They concluded that all of the cases in their study developed a normal gait with those patients treated surgically having more dorsiflexion strength and motion compared to patients treated conservatively.⁴ Surgical intervention appears to restore a normal functional outcome compared to conservative treatment.

DISCUSSION

Ruptures of the tibialis anterior tendon are uncommon injuries but probably occur with far greater frequency than reported. The mere fact that there is often a significant delay of up to 10 months in the diagnosis of a tibialis anterior tendon rupture indicates the need for an increased awareness of this distinct clinical entity. Ruptures of the tibialis anterior tendon have significant effects on gait and ambulation, especially in active patients, regardless of age. Perhaps it should be thought of as a mild form of polio, as the effects of the two diseases are quite similar. Unfortunately, in comparison to other more common

Table 3

COMPLICATIONS OF TIBIALIS ANTERIOR TENDON RUPTURES

- Equinus deformity
- Decrease in muscle strength
- Gait abnormalities
 - Lack of coordination
 - Dropfoot
 - Frequent stubbing of digits
- Progressive flatfoot deformity
- Clawtoe deformities

tendon ruptures of the foot and ankle such as the Achilles tendon, tibialis posterior and peroneus longus or brevis, the signs and symptoms are less dramatic further hampering an early suspicion and diagnosis.

Accurate and timely diagnosis is highly dependent on an awareness of the condition and the maintenance of a high index of suspicion in any patient that complains of difficulty with normal walking which has occurred suddenly or over a relatively short period of time. A detailed physical examination should readily confirm the diagnosis or at the very least increase ones suspicion of its existence. Manual muscle testing, careful digital palpation and recognition of increased recruitment of the extensor hallucis longus and extensor digitorum longus are usually sufficient to confirm the diagnosis clinically. Gait observation provides further confirmation of a rupture of the tibialis anterior tendon.

A number of diagnostic tools are available to confirm the diagnosis of a complete or partial rupture of the tibialis anterior tendon, or intra or peritendinous disease. An MRI is the most common diagnostic imaging modality employed today, however, it is being challenged by new ultrasound technology which is likely to see increased recognition and use in the immediate future. An MRI will provide detailed information of the nature and extent of the pathology regardless of whether the tendon is rupture or not. A number of different pathologic entities, which can cause a functional rupture of the tendon, can be appreciated on MRI.

Acute complete ruptures of the tibialis anterior tendon deserve immediate surgical repair if preservation of function and avoidance of gait complications is desired. Any one of a number of conventional surgical techniques to repair a ruptured tendon should prove successful. In cases of delayed diagnosis, surgical intervention will clearly be more difficult and thus consideration should be given to a trial of conservative management. An AFO device is the most likely treatment to benefit patients who suffer from a symptomatic dropfoot or slapfoot type of gait. In cases of minimal symptomatology, surgical intervention is generally not indicated; symptomatic treatment is employed as necessary.

It is the hope of the authors that this publication will increase physicians' awareness of and ability to diagnose this distinct clinical entity leading to an improved and more timely and effective management. Prompt and accurate diagnosis with timely conservative or surgical management should minimize complications associated with ruptures of the tibialis anterior tendon.

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