Clinical Practice Guideline: **Repair of Rupture of Foot and Ankle Flexor or Extensor Tendons**

Date of Implementation: **September 17, 2015**

Product: **Specialty**

GUIDELINES

A. American Specialty Health – Specialty (ASH) considers procedures consisting of CPT Code 27658, 27659, 27664, and 27665 to be medically necessary for repair of flexor or extensor tendons **for the following diagnoses**:
   - Strain of Achilles tendon, sprain of other ligament of ankle, and strain of unspecified muscle and tendon at ankle and foot level (ICD-10 Codes S86.011A - S86. 019S, S93.491A - S93.499S, S96.919A - S96.919S)
   - Spontaneous rupture of tendons of foot and ankle (not amenable to casting or bracing) (ICD-10 Codes M66.271 - M66.279, M66.371 - M66.379, M66.871 - M66.879)
   - Abscess of tendon sheath or bursa, other specified bursopathies, synovial hypertrophy, and other specified disorders of synovium and tendon of lower leg, ankle and foot, other site and multiple sites (ICD-10 Codes M65.061 - M65.079, M65.08, M67.261 - M67.279, M67.28 - M67.29, M67.871 - M67.879, M67.88 - M67.89, M71.071 - M71.079, M71.08 - M71.09, M71.871 - M71.879, M71.88 - M71.89)
   - Unspecified disorder of synovium and tendon of lower leg, ankle and foot, other site, and multiple sites (not amenable to casting or bracing) (ICD-10 Codes M67.961 - M67.979, M67.98 - M67.99)

B. ASH considers procedures consisting of CPT Code 28200, 28202, 28208, and 28210 to be medically necessary for repair of the foot flexor or extensor tendons **for the following diagnoses**:
   - Strain of Achilles tendon, sprain of other ligament of ankle, and strain of unspecified muscle and tendon at ankle and foot level (ICD-10 Codes S86.011A - S86. 019S, S93.491A - S93.499S, S96.919A - S96.919S)
   - Spontaneous rupture of tendons of foot and ankle (not amenable to casting or bracing) (ICD-10 Codes M66.271 - M66.279, M66.371 - M66.379, M66.871 - M66.879)

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CPT CODES AND DESCRIPTIONS

CPT® Code	CPT® Code Description
27658	Repair, flexor tendon, leg; primary, without graft, each tendon
27659	Repair, flexor tendon, leg; secondary, with or without graft, each tendon
27664	Repair, extensor tendon, leg; primary, without graft, each tendon
27665	Repair, extensor tendon, leg; secondary, with or without graft, each tendon
28200	Repair, tendon, flexor, foot; primary or secondary, without free graft, each tendon
28202	Repair, tendon, flexor, foot; secondary with free graft, each tendon (includes obtaining graft)
28208	Repair, tendon, extensor, foot; primary or secondary, each tendon
28210	Repair, tendon, extensor, foot; secondary with free graft, each tendon (includes obtaining graft)

BACKGROUND

When a tendon ruptures it can be extremely painful and cause disability of the foot and ankle. Ruptures of ankle and foot tendons can occur from a single traumatic event (sprains and strains of ankle and foot, other tendon ICD-10 Codes S86.011A - S86. 019S, S93.491A - S93.499S, S96.919A - S96.919S). A nontraumatic rupture may occur in degenerative tendons where tendinosis causes a gradual attenuation and tendon rupture, as a result of certain systemic diseases, or steroid use among other possible factors. An untreated tendon rupture can result in damage to the joints of the foot and ankle. Any of these structures may rupture, resulting in a serious injury that may require surgical repair.

Tibialis Anterior Tendon Rupture

The tibialis anterior tendon is vulnerable to laceration because of its subcutaneous position over the anterior aspect of the foot and ankle. Laceration of this tendon may weaken dorsiflexion of the ankle and extension will be impacted, however, rupture of the tendon is rare because the tendon will remain intact due to the secondary action of the extensor hallucis longus (EHL) and extensor digitorum longus (EDL). The foot laceration should be evaluated if there is suspicion of partial or complete tendon rupture. The structures heal well and have minimal dysfunction when repaired acutely.

In rupture of the tibialis anterior tendon, the ruptured tendon end often becomes caught at one of the extensor retinacular layers and may be easily palpated beneath the skin. Nontraumatic tendon rupture usually occurs by partial avulsion from the insertion and elongation of the degenerative tendon within the inferior extensor retinaculum.

Tibialis anterior deficiency commonly presents with spontaneous rupture of the tendon at or near its insertion. It typically occurs in middle aged athletes and often accompanies other comorbid conditions such as diabetes, inflammatory arthritis, gout, obesity, and steroid use. The tendon in this location may demonstrate a zone of relative hypovascularity near its insertion that may predispose it to tendinosis and rupture in this area. Repair may be performed early or late, but the results of the surgery are better if repair is performed within the first 3 to 6 weeks. Non-operative treatment is acceptable for elderly, inactive patients, but primary or delayed repair is helpful for active individuals regardless of age.

Sammarco et al. (2009) performed a retrospective review of cases of patients with anterior tibialis tendon rupture who had undergone operative procedures. Nineteen (19) tibialis anterior tendon ruptures were surgically repaired in eighteen patients ranging in age from 21 to 78 years. Early repair was performed for one traumatic and seven atraumatic ruptures three days to six weeks after the injury. If the tendon ends could be approximated or if the tendon could be brought to its insertion, the ends were debrided, and a direct tendon repair was performed. In four cases, the tendon was repaired directly to bone with a suture anchor. Direct repair was achieved in the cases of seven ruptures, including four that underwent early repair and three that underwent delayed reconstruction. If the tendon ends could not be approximated or if the tendon could not be placed onto its insertion site, an interpositional tendon graft was used to bridge the gap and to reinforce the repair.

Flexor Hallucis Longus Rupture

Rupture of the flexor hallucis longus is uncommon but can occur in several areas. Tendon rupture can occur following corticosteroid injection into the tendon at the metatarsophalangeal joint. Symptoms include pain, sudden loss of active flexion at the interphalangeal joint, and weakness in flexion at the metatarsophalangeal joint. Chronic, complete, spontaneous rupture has also been reported in athletes. Treatment in athletes consists of surgical repair. If the tendon has retracted proximally, and cannot be reapproximated, it may be sutured using a tendon graft.

In some patients with low demands on the foot, complaints of a hyperextended distal phalanx rubbing on top of the shoe persist after repair with tendon graft. Arthrodesis of the hallux interphalangeal joint in 20 degrees of flexion may provide relief of symptoms without altering performance.

In a review of treatments in the management of chronic Achilles tendon rupture, flexor hallucis longus (FHL) tendon transfer was widely reported as treatment in twenty-two studies. Other tendon transfer methods, such as semitendinosus tendon transfer (ST transfer), peroneus brevis tendon transfer (PB transfer) and hamstring tendon transfer, were reported. in seven, six and two studies, respectively. A total of ten studies used gastrocnemius flaps with no augmentation, whilst six studies describe additional flexor hallucis longus augmentation. Direct repair techniques such as V–Y and Z plasty were

reported both as stand-alone techniques or combined with a synthetic acellular human dermal tissue matrix graft jacket (Arshad et al., 2021).

With respect to acute Achilles tendon rupture, the American College of Foot and Ankle Surgeons (2021) created a clinical consensus statement to address selected aspects of care of the acute Achilles tendon injury. The panel reached consensus on the statement that patients with increased risk factors for postoperative complications (diabetes, obesity, cigarette smoking) have special considerations with regard to deciding operative versus nonoperative management of the acute Achilles tendon rupture. The panel also agreed that acute partial Achilles tendon ruptures should be treated nonoperatively and that early weightbearing and progressive physical therapy should be used after repair or at initiation of nonoperative management.

PRACTITIONER SCOPE AND TRAINING

Practitioners should practice only in the areas in which they are competent based on their education, training and experience. Levels of education, experience, and proficiency may vary among individual practitioners. It is ethically and legally incumbent on a practitioner to determine where they have the knowledge and skills necessary to perform such services and whether the services are within their scope of practice.

It is best practice for the practitioner to appropriately render services to a member only if they are trained, equally skilled, and adequately competent to deliver a service compared to others trained to perform the same procedure. If the service would be most competently delivered by another health care practitioner who has more skill and training, it would be best practice to refer the member to the more expert practitioner.

Best practice can be defined as a clinical, scientific, or professional technique, method, or process that is typically evidence-based and consensus driven and is recognized by a majority of professionals in a particular field as more effective at delivering a particular outcome than any other practice (Joint Commission International Accreditation Standards for Hospitals, 2020).

Depending on the practitioner's scope of practice, training, and experience, a member's condition and/or symptoms during examination or the course of treatment may indicate the need for referral to another practitioner or even emergency care. In such cases it is prudent for the practitioner to refer the member for appropriate co-management (e.g., to their primary care physician) or if immediate emergency care is warranted, to contact 911 as appropriate. See the *Managing Medical Emergencies (CPG 159 – S)* clinical practice guideline for information.

References

American College of Ankle and Foot Surgeons (ACFAS) Position statement on cosmetic surgery (2020). Retrieved on May 11, 2023 from: https://www.acfas.org/policy-advocacy/policy-position-statements/acfas-position-statement-on-cosmetic-surgery

American Medical Association. (current year). Current Procedural Terminology (CPT) Current year (rev. ed.). Chicago: AMA

American Medical Association. (current year). ICD-10-CM. American Medical Association

Arshad, Z., Lau, E. J. S., Leow, S. H., & Bhatia, M. (2021). Management of chronic Achilles ruptures: a scoping review. *International orthopaedics*, *45*(10), 2543-2559.

Baxter, D. E., Porter, D. A., & Schon, L. (2008). *Baxter's the Foot and Ankle in Sport*: Mosby Elsevier

Joint Commission International. (2020). Joint Commission International Accreditation Standards for Hospitals (7th ed.): Joint Commission Resources

Naldo, J., Agnew, P., Brucato, M., Dayton, P., & Shane, A. (2021). ACFAS Clinical Consensus Statement: Acute Achilles Tendon Pathology. The Journal of foot and ankle surgery: official publication of the American College of Foot and Ankle Surgeons, 60(1), 93–101. https://doi.org/10.1053/j.jfas.2020.02.006

Sammarco, V. J., Sammarco, G. J., Henning, C., & Chaim, S. (2009). Surgical Repair of Acute and Chronic Tibialis Anterior Tendon Ruptures. *The Journal of Bone and Joint Surgery Am, 91*(2), 325-332. doi: 10.2106/jbjs.g.01386