Clinical Practice Guideline: **Achilles Tendon Repair**

Date of Implementation: **July 16, 2015**

Product: **Specialty**

GUIDELINES

American Specialty Health – Specialty (ASH) considers services consisting of CPT® Code 27650, 27652, or 27654 to be medically necessary for the treatment of Achilles tendon rupture ICD-10 Codes S86.011A – S86.019S.

For services consisting of CPT® code 27652, should a graft be medically necessary, a synthetic (as opposed to auto) graft requires verification of medical necessity prior to the services being performed given high cost and experimental and investigational status for this procedure.

Should an autogenous graft be medically necessary for the treatment of chronic Achilles tendon rupture, procedure code 20924 may be utilized. This procedure consists of autogenous graft through separate tendon incision. CPT® code 20924 should be billed separately unless the code descriptor references the harvesting of the graft or implant (e.g., includes obtaining graft).

CPT® Codes and Descriptions

CPT®Code	CPT® Code Description
20924	Tendon graft, from a distance (e.g., palmaris, toe extensor, plantaris)
27650	Repair, primary, open or percutaneous, ruptured Achilles tendon
27652	Repair, primary, open or percutaneous, ruptured Achilles tendon, with graft (includes obtaining graft)
27654	Repair, secondary, Achilles tendon, with or without graft

BACKGROUND

While the Achilles tendon is stronger than any other in the body, it also is the most frequently ruptured (Rosenzweig and Azar, 2009). Treatment options for acute Achilles tendon rupture either include conservative and operative procedures. The selected course of treatment is determined by the patient history. For example, cases of delayed diagnosis

may not lend to conservative management due to lack of apposition of the tendon ends due to scarring and retraction. Cases of chronic rupture of the tendo-achilles will not respond to conservative treatment and will require operative repair – and may additionally require tendon graft. Conservative treatment options for Achilles tendon rupture may include casting in plantarflexion (aka equinus). Historically, this would include rest, pain control, serial casting, and eventually rehabilitation to maximize function. For example, long leg casting for 2-3 weeks, followed by short leg casting for another 8 weeks with non-weight bearing advised for the first 6 weeks. However, more recent protocols include functional bracing with immediate weight bearing up to full weight in a functional brace or prefabricated boot. Patients typically begin with the ankle plantar flexed up to 45° and systematically reduced to neutral over 6 to 12 weeks. This approach often includes active plantarflexion movements with limited dorsiflexion, gradually progressing to more aggressive strengthening exercises (Lu et al., 2019).

Surgical approaches to repair a ruptured Achilles tendon vary. The classic open approach involves a longitudinal incision exposing the ruptured tendon and suturing it directly. The more popular percutaneous (minimally invasive) approach uses a smaller incision with a clamp and sutures passed percutaneously through both proximal and distal portions of the ruptured tendon. In addition, the limited open techniques are a hybrid of the other two techniques to minimize tissue disruption.

Systematic reviews of randomized trials with pooled results evaluated various protocols to repair acute Achilles tendon rupture. The studies indicated that patients treated with a surgical approach were less likely to re-rupture their Achilles tendon. However, the same surgical group had a greater risk of complications including infection, nerve entrapment/injury, and fibrotic adhesions compared to those who received nonsurgical treatment.

Ochen et al. (2019) compared re-rupture rate, complication rate, and functional outcome after operative versus nonoperative treatment of Achilles tendon ruptures; to compare re-rupture rate after early and late full weight bearing; to evaluate re-rupture rate after functional rehabilitation with early range of motion; and to compare effect estimates from randomized controlled trials and observational studies in a systematic review and meta-analysis. Twenty-nine studies were included 10 randomized controlled trials and 19 observational studies. The 10 trials included 944 (6%) patients, and the 19 observational studies included 14,918 (94%) patients. A significant reduction in re-ruptures was seen after operative treatment (2.3%) compared with nonoperative treatment (3.9%). Operative treatment resulted in a significantly higher complication rate than nonoperative treatment. The main difference in complication rate was attributable to the incidence of infection (2.8%) in the operative group. A similar reduction in re-rupture rate in favor of operative treatment was seen after both early and late full weight bearing. No significant difference in re-rupture rate was seen between operative and nonoperative treatment in studies that

used accelerated functional rehabilitation with early range of motion. Authors concluded that operative treatment of Achilles tendon ruptures reduces the risk of re-rupture compared with nonoperative treatment. However, re-rupture rates are low and differences between treatment groups are small. Operative treatment results in a higher risk of other complications. The final decision on the management of acute Achilles tendon ruptures should be based on patient specific factors and shared decision making. Lu et al. (2019) investigated the role of early functional rehabilitation in acute Achilles tendon ruptures. Fourteen randomized controlled trials were identified. Pooled data demonstrated no difference in the complication rates, time taken to return to sports, total number of patients returning to work or sports, and satisfaction rate between the early functional rehabilitation and conventional cast immobilization groups. Early functional rehabilitation significantly decreased the time taken to return to work. Early functional rehabilitation for acute Achilles tendon ruptures appeared to be related to a shorter time taken to return to work; however, it did not affect the other variables between the groups.

Jaing et al. (2012) performed a meta-analysis comparing the efficacy of surgical vs. non-surgical treatment for acute Achilles tendon rupture. Among the ten RCTs meeting inclusion criteria (894 patients) the operation treatment group had superior outcomes to the non-operative treatment group for lower risk of re-rupture, and returned to work more quickly, but had a greater risk of complications (i.e., scar adhesions, superficial infection and nerve sensation disturbance). In addition, Wilkins et al. (2012) performed a meta-analysis of seven trials (677 patients) which found open surgical repair correlated with a significantly lower rate of re-rupture compared to those who received nonoperative treatment. Although, the occurrence of surgical complications (i.e., deep infections, scar complaints, and sural nerve sensory disturbances) were all significantly greater among the surgical patients ($P=0.113$, $P<0.001$, and $P<0.001$, respectively).

With regard to the issue of tendon re-rupture, a stratified meta-analysis of 10 randomized controlled trials (RCTs) involving a total of 826 patients concluded that when functional rehabilitation with early range of motion was implemented, tendon re-rupture rates were comparable comparing surgical to nonsurgical patients (risk difference = 1.7%, $p = 0.45$). While surgical patients returned to work 19.16 days sooner ($p = 0.0014$), surgery was associated with an absolute risk increase of 15.8% ($p = 0.016$ in favor of nonoperative treatment) for complications other than re-rupture (Soroceanu et al., 2012).

According to McMahon et al. (2011) a systematic review and meta-analysis of 6 RCTs (277 patients) reported that percutaneous minimally invasive surgery (136 cases) decreased the likelihood of superficial wound infection and increased patient satisfaction when compared to conventional open surgical repair (141 cases). Further, no differences were observed between these two surgical methods based on re-rupture rates, incidence of tissue adhesion, or reported sural nerve injury.

Meta-analyses performed by Suchak et al. (2006) identified 6 studies (315 patients) meeting inclusion criteria. Among these postoperative patients, when early functional treatment protocols were implemented (e.g., ankle mobilization and full weight-bearing with an orthosis), patients reported more "excellent" subjective responses to treatment compared to those who received postoperative immobilization (e.g., casting). Further, this aggressive functional rehabilitative approach had no negative impact on re-rupture rates.

Willits et al. (2010) conducted an RCT comparing operative and nonoperative treatment in 144 patients with acute Achilles tendon rupture. Both groups received accelerated functional rehabilitation that included early weight-bearing and early range of motion exercises. There was no clinically significant difference between these groups in re-rupture rates, range of motion, strength, Leppilahti score or calf circumference. A Cochrane review noted the method of rehabilitation may also play an important role in the outcome of ruptured Achilles tendon treatment. The evidence points to the use of early functional (e.g., weight-bearing) rehabilitation, regardless of operative or non-operative management (Kearney & Costa, 2012).

McCormack & Bovard (2015) conducted a meta-analysis to evaluate postoperative rehabilitation options following surgical repair of acute Achilles tendon rupture measured against primary outcomes of patient safety and satisfaction. Randomized controlled trials comparing clinical and/or patient-reported outcomes between patients receiving early functional postoperative ankle motion and weight bearing (bracing group), and traditional ankle immobilization with a non-weight bearing rigid cast (cast group) were eligible for inclusion. Fourteen articles were identified as potentially eligible; 10 sufficient-quality randomized controlled trials involving 570 patients were included for meta-analysis. Five of the six trials measuring the time interval showed a faster return to prior sporting level in the bracing group. Subjective patient outcomes were significantly better in the bracing group (for good and excellent results, p=0.01; OR, 3.13; 95% CI 1.30 to 7.53). There was no difference in major complications between the two groups (p=0.21; RD, -0.03; 95% CI -0.06 to 0.01). Dynamometry and anthropometry measurements favored functional rehabilitation at 6-12 weeks postoperative; however, by 6 months postoperative, the differences were negligible. The authors concluded that early dynamic functional rehabilitation results in higher patient satisfaction and is as safe as traditional ankle immobilization with a non-weight bearing cast following surgical repair of acute Achilles tendon rupture.

Patients who may not be candidates for surgical repair of a ruptured Achilles tendon include those with poorly controlled systematic diseases (e.g., diabetes) and those with vascular compromise or nerve problems involving the foot (Kou, 2010). In addition, surgery performed exclusively for cosmetic or aesthetic reasons would not be considered medically necessary (ACAFS, 2020).

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.

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