Clinical Practice Guideline: Ostectomy for Tarsal Coalition

Date of Implementation: September 17, 2015

Product: Specialty

GUIDELINES
American Specialty Health – Specialty (ASH) considers services consisting of CPT Code 28116 to be medically necessary for the excision of tarsal coalition upon meeting ALL of the following criteria:

1. When supported by a diagnosis of other specified congenital deformities of feet (tarsal coalition), diagnosis code Q66.89
2. Confirmation of coalition by radiographs, CT, or MRI
3. The symptoms of the coalition must include 2 or more of the following:
   • Severe pain when walking or standing
   • Muscle spasms in the leg, causing the foot to turn outward when walking
   • Flatfoot (in one or both feet)
   • Walking with a limp
   • Stiffness of the foot and ankle
4. Failure of at least 2 of the following non-operative treatments
   • Physical therapy
   • Orthotics/bracing
   • Shoe modification
   • Activity modification
   • Medications
   • Injections

CPT CODES AND DESCRIPTIONS

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<th>CPT Code</th>
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<td>28116</td>
<td>Ostectomy, excision of tarsal coalition</td>
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BACKGROUND
CPT code 28116 describes an ostectomy procedure for the excision of tarsal coalition. A tarsal coalition is an abnormal connection that develops between the tarsal bones of the foot. This may lead to limited motion and pain in the feet. The tarsal bones include the calcaneus (heel bone), talus, navicular, cuboid, and cuneiform bones. These bones work together to provide the motion necessary for normal foot function.
Tarsal coalition is a congenital bony, cartilaginous, or fibrous connection between the tarsal bones, which may result from a congenital failure of differentiation in the developing fetal foot. Coalitions which are fibrous or cartilaginous during the first years of life can later start to ossify leading to the development of pain and deformity. Tarsal coalitions commonly involve the talocalcaneal and calcaneonavicular bone. Additionally, patients frequently have more than one coalition in the same foot and 50% of patients have bilateral coalition.

The radiographic evaluation of a suspected tarsal coalition should begin with plain anteroposterior (AP), lateral, and oblique radiographs of the foot. The diagnosis of calcaneonavicular, talonavicular, and calcaneocuboid coalitions can usually be made using plain radiographs, while the talocalcaneal variety is difficult to view. Both CT scans and MRI are helpful for complete evaluation (McCarthy et al., 2010).

Pain is the principal symptom associated with tarsal coalition. Other symptoms may include restricted subtalar motion, rigid flatfoot deformity, a limp with higher levels of activity, and peroneal spasms. The American Academy of Orthopaedic Surgeons reports that nonsurgical treatment of tarsal coalitions includes rest, orthotics, temporary boot or cast, and injections. Should nonsurgical treatment fail to ease pain or improve function, then surgical methods including resection (ostectomy) or arthrodesis are recommended.

Talocalcaneal coalition often leads to a flatfoot deformity in children. However, the optimum surgical procedure for talocalcaneal coalition combined with flatfoot has not been definitively determined. Zhou et al. (2014) conducted a review of current literature to provide an overview of the current knowledge about etiology, biomechanics, classification, diagnosis, and treatment options for talocalcaneal coalitions with flatfoot in children. The goal of conservative treatment for patients with talocalcaneal coalition and flatfoot is to limit subtalar and midtarsal joint range of motion in an effort to reduce pain and muscle spasms. Conservative treatments include arch supports, a short-leg walking cast, immobilization in neutral or a slight varus position, and anti-inflammatory medications. Current surgical techniques include bar resection with or without interposition in the resection gap, subtalar joint arthrodesis, and also extra-articular arthrodesis in the sinus tarsi. It is generally accepted to perform a single resection of coalition for a painful small talocalcaneal coalition that is associated with a wide, healthy posterior facet and minimal valgus deformity of the hindfoot. However, most of coalitions in talocalcaneal middle facet are associated with rigid pes planovalgus, therefore, simple resection is not suitable for all talocalcaneal coalition cases due to the variation in anatomy and deformity (Zhou et al., 2014).

According to the American College of Foot and Ankle Surgeons (ACFAS) guideline for the treatment of tarsal coalition in patients with pediatric flatfoot (Vanore et al., 2004), surgical consideration should be given to those who fail to respond to nonsurgical
treatment. Surgical treatment depends on the type of coalition. Resection of the coalition may be indicated for individuals without significant deformity or arthrosis. In some cases, arthrodesis may be the procedure of choice.

There are little patient-reported data on functional outcomes of tarsal coalition resection in children and adolescents. Mahan et al. (2014) carried out a study to evaluate the medium-term (>2 year) outcomes in patients who have had surgical excision of their symptomatic tarsal coalition and to compare patient-based outcomes in patients who have calcaneonavicular (CN) coalitions to those with talocalcaneal (TC) coalitions (N=63). Twenty-four patients had bilateral surgery. TC coalitions were present in 20 patients (32%); CN coalitions were present in 43 patients (68%). Overall, mean modified AOFAS score was 88.3 and mean UCLA activity score was 8.33 at an average of 4.62 years after surgery. Patients who had TC coalitions had similar modified AOFAS scores (88.4) and UCLA activity scores (8.4) when compared with those with CN coalitions (88.0 and 8.3, both not significant). Of the 73% patients who reported that their activity levels were not limited by their foot pain, the mean AOFAS score was 93.9 and the mean UCLA activity score was 8.9; 32 of these were CN and 14 were TC coalitions. Of the 27% patients who reported that their activity levels were limited by their foot pain, the mean AOFAS score was 72.9 and the mean UCLA activity score was 6.9; 11 of these were CN and 6 were TC coalitions. There was a statistically significant difference in these groups both in modified AOFAS score (P<0.0001) and UCLA activity score (P=0.006). There was no difference in outcomes between those who were treated for a TC and CN coalition. The patient-reported outcomes after surgical excision of tarsal coalition indicated that >70% of patients' activities were not limited by pain and their functional outcome was very good. A few patients continued to have problems with ongoing foot pain and activity limitations. Additionally, the type of coalition did not seem to be an indicative factor in determining outcome.

Patients with a preexisting hindfoot deformity, who undergo resection (with or without soft tissue interposition) of a tarsal coalition, may present with recurrent pain and worsening planovalgus deformity due to the secondary effect of soft tissue contractures (lateral ligaments, peroneal tendons, calf muscles). Physiotherapy and insoles may help some patients. Depending on the flexibility of the hindfoot and the presence or otherwise of joint degeneration, joint-preserving corrective procedures or corrective arthrodesis may be needed (Gougoulias et al., 2014).

**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, 2017).

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 in a Health Care Facility (CPG 159 – S) clinical practice guideline for information.

References


Gougoulias, N., O’Flaherty, M., & Sakellariou, A. (2014). Taking out the tarsal coalition was easy: but now the foot is even flatter. What now? Foot Ankle Clin, 19(3), 555-568. doi: 10.1016/j.fcl.2014.06.011


