Clinical Practice Guideline: **Percutaneous Fixation of Tarsometatarsal, Metatarsophalangeal, and Interphalangeal Joint Dislocation with Manipulation**

Date of Implementation: **October 15, 2015**

Product: **Specialty**

GUIDELINES

A. American Specialty Health – Specialty (ASH) considers procedures consisting of CPT Code 28606 to be medically necessary for the treatment of tarsometatarsal, joint dislocations when used for the treatment of **at least 1 of the following diagnoses**:
   - Dislocation or subluxation of tarsometatarsal joint (ICD-10 codes S93.321A - S93.326S)
   - Open dislocation of tarsometatarsal joint, including unspecified open wound of unspecified foot (ICD-10 codes S91.309A - S91.309S, S93.326A - S93.326S)

B. American Specialty Health – Specialty (ASH) considers procedures consisting of CPT Codes 28636, 28666 to be medically necessary for the treatment of metatarsophalangeal, and interphalangeal joint dislocations when used for the treatment of **at least 1 of the following diagnoses**:
   - Dislocation or subluxation of metatarsophalangeal joint (ICD-10 codes S93.121A - S93.129S, S93.141A – S93.149S)
   - Dislocation or subluxation of interphalangeal joint (ICD-10 codes S93.111A - S93.119S, S93.131A – S93.139S)

CPT CODES AND DESCRIPTIONS

CPT®Code	**CPT®Code** Description
28606	Percutaneous skeletal fixation of tarsometatarsal joint dislocation, with manipulation
28636	Percutaneous skeletal fixation of metatarsophalangeal joint dislocation, with manipulation
28666	Percutaneous skeletal fixation of interphalangeal joint dislocation, with manipulation

BACKGROUND

CPT codes 28606, 28636, and 28666 describe percutaneous procedures, which include manual manipulation and skeletal fixation (e.g., small pin or screw), for the treatment of tarsometatarsal, metatarsophalangeal, and interphalangeal joint dislocations. Foot injuries can be a challenging injury subset. These injuries, especially when overlooked, may result in considerable long-term disability as the result of posttraumatic arthritis. A high level of

suspicion, recognition of the clinical signs of injury, and appropriate radiographic studies are needed for correct diagnosis.

Treatment for a toe and forefoot fracture is dependent upon the location of the injury and type of fracture. Indications for percutaneous fixation include, but are not limited to, complicated soft tissue environment, areas of known hypovascularity, minimal or no displacement of fracture fragments, and well-reduced fractures with closed reduction techniques (McMillen & Gruen, 2011). Joint displacement is most commonly identified on x-ray; however, CT and MRI scans can also be helpful in diagnosis. The goal of surgery is to realign and stabilize the joints. Some injuries may require a patient to have an arthrodesis procedure, which encourages the bones to grow together in the areas of damaged cartilage.

Open reduction internal fixation is the standard surgical management method for traumatic osseous injury to the foot and ankle. Stable anatomic reduction frequently yields optimal results. Treatment of fracture dislocations with cast immobilization alone generally yields poor results, such as extended immobilization, loss of reduction, and eventual need for arthrodesis (Baker et al., 2008). Additionally, the outcomes will be significantly poorer if operative treatment is delayed for more than 6 months.

Central metatarsal fractures are defined as fractures of the second, third, and fourth metatarsals. These fractures often occur distally at the metatarsal heads. Percutaneous fixation of distal metatarsal fractures has been described in two ways - the fifth metatarsal head can be used to stabilize the fractured central metatarsal, or by retrograde intramedullary percutaneous pinning of each individual central metatarsal fracture. Alternatively, most distal metatarsal fractures of the fifth metatarsal can be treated conservatively (McMillen & Gruen, 2011).

Dislocation or fracture-dislocation of the interphalangeal joints of the great toe is mostly dorsal. Closed reduction is successful in most cases but can be irreducible due to entrapment of the plantar plate and sesamoid, requiring open reduction. Dislocation of the distal interphalangeal joint of other ties can also be easily reduced by closed method except when there is interpositioning of the plantar plate, requiring open reduction. Dislocation of the proximal interphangeal joint of the other toes can be easily reduced by applying traction over the tip of the toes, and reduction remains stable except when there is buttonholing in the capsule or interposition of the sesamoid bone or the plantar plate, or fracture dislocation which requires open reduction and fixation by K-wires (Sureshwar & Kumar, 2010).

Currently, open reduction is advocated when it is necessary to remove bone fragments, interposed capsule, or cartilage and to confirm the accuracy of reduction with direct exposure. However, closed or percutaneous reduction methods can be attempted in injuries with minimal disruption. In a high-risk patient, surgical management with closed reduction and percutaneous fixation may be the most appropriate option to limit devitalization of the

soft tissue envelope. Percutaneous reduction is first attained through longitudinal traction achieved by applying traction at the ankle joint. Transverse and sagittal plane correction can then be reduced manually with digital pressure. Dorsiflexing the toes at the metatarsophalangeal joints creates stability at the tarsometatarsal joint by engaging the plantar fascia and flexor tendons.

Treatment of Lisfranc joint dislocation by closed or open means is still a matter of debate. Percutaneous screw fixation is an effective, safe and relatively simple method of treating tarsometatarsal joint trauma (Stavrakakis et al., 2019). Anatomic restoration and postoperative rehabilitation of displaced fracture-dislocations of the tarsometatarsal junction of the foot are essential. Wagner et al. (2013) carried out a retrospective study to examine the results of percutaneous reduction and screw fixation in low-energy Lisfranc fracture dislocation injuries that were treated with early weight-bearing and rehabilitation (*N*=22) at an average follow-up of 33.2 months. The study evaluated the quality of reduction in the postoperative digital radiographs; subjective satisfaction; American Orthopaedic Foot and Ankle Society (AOFAS) score; time required to return to work, recreational activities, and low-impact sports; and complications. The quality of reduction was anatomic or near anatomic in 100% of cases. The subjective satisfaction reported by patients was very good, with complete satisfaction in 90.9% of the patients. The AOFAS average was 94 points (range, 90-100 points). Average return to work was at 7 weeks (range, 6-9 weeks), recreational activities 7.2 weeks (range, 6-9 weeks), training for low-impact sports 7.6 weeks (range, 7-8 weeks), and symptom-free sport activities 12.4 weeks (range, 11-13 weeks). The authors concluded that in this selected group of patients with low-energy Lisfranc fracture dislocation, anatomic or near-anatomic reduction was achieved with percutaneous reduction and screw fixation.

The major disadvantages of percutaneous fixation techniques are the potential for less than optimal reduction due to the lack of direct visualization of the osseous injury and their technically demanding nature. However, when it is carried out in the hands of an experienced ankle and foot surgeon, percutaneous fixation for foot trauma in the high-risk patient is a safe and satisfactory method of osseous stabilization without increased physical strain on the patient (Baker et al., 2008).

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)* policy for information.

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