Clinical Practice Guideline: **Open Treatment of Ankle Fractures**

Date of Implementation: **June 18, 2015**

Product: **Specialty**

GUIDELINES

American Specialty Health – Specialty (ASH) considers services consisting of CPT® Codes 27766, 27769, 27792, 27814, 27822, 27823, 27826, 27827, or 27828 to be medically necessary for the treatment of ankle fracture(s) when **one (1) or more** of the following criteria have been met:

- Joint instability (e.g., syndesmosis rupture)
- Joint or fracture displacement
- Articular incongruity greater than 2 mm
- Coincident with treatment of other injury (e.g., tibia-fibula injury)
- Bimalleolar or trimalleolar fracture
- Tibial plafond or pilon fracture
- Maisonneuve fracture
- Talar fracture

In addition, services consisting of CPT® Code 27766, 27769, or 27792 are considered medically necessary for the treatment of an open ankle fracture.

CPT® Codes and Descriptions

CPT® Code	CPT® Code Description
27766	Open treatment of medial malleolus fracture, includes internal fixation, when performed
27769	Open treatment of posterior malleolus fracture, includes internal fixation, when performed
27792	Open treatment of distal fibular fracture (lateral malleolus), includes internal fixation, when performed
27814	Open treatment of bimalleolar ankle fracture (e.g., lateral and medial malleoli, or lateral and posterior malleoli, or medial and posterior malleoli), includes internal fixation, when performed
27822	Open treatment of trimalleolar ankle fracture, includes internal fixation, when performed, medial and/or lateral malleolus; without fixation of posterior lip

CPT® Code	CPT® Code Description
27823	Open treatment of trimalleolar ankle fracture, includes internal fixation, when performed, medial and/or lateral malleolus; with fixation of posterior lip
27826	Open treatment of fracture of weight bearing articular surface/portion of distal tibia (e.g., pilon or tibial plafond) with internal fixation, when performed, of fibula only
27827	Open treatment of fracture of weight bearing articular surface/portion of distal tibia (e.g., pilon or tibial plafond) with internal fixation, when performed, of tibia only
27828	Open treatment of fracture of weight bearing articular surface/portion of distal tibia (e.g., pilon or tibial plafond) with internal fixation, when performed, of both tibia and fibula

BACKGROUND

Ankle fractures are one of the most common lower limb fractures, accounting for 9% of all fractures and a significant number of traumatic injuries (Singh et al., 2014). Ankle fractures are frequently attributed to falls, car accidents or twisting of the ankle. There are two malleoli on the tibia (medial and posterior) and one on the fibula (lateral) and any combination of these three malleoli can be fractured. Conservative (non-operative) treatment with immobilization via casting or bracing can provide satisfactory outcomes if anatomical reduction of the fracture is maintained and followed closely. However, such immobilization can also lead to muscle atrophy, cartilage degeneration, and painful, stiff and enlarged joint(s). If surgical management of a fracture is necessary, the goals are to stabilize and restore the fractured bone(s) in the appropriate position, facilitate healing, restore function and reduce the risk of subsequent complications Surgical management includes open reduction (if displaced) and internal fixation of the fractured bones using various fixation devices (e.g., metal plates, screws, tension bands) or external fixation (Singh et al., 2014).

Conservative treatment for a fracture of the malleolus will depend on the location of the fracture(s) and whether the ankle is stable (i.e., the fractured bones are in place or barely out of place). Stable fractures are often treated non-surgically, which can include casting or bracing for several weeks. Bimalleolar and trimalleolar fractures involve multiple malleoli and are considered unstable with surgical treatment typically recommended. However, non-surgical treatment for malleolar fractures may be considered if the patient has significant health problem(s) such that the risks of surgery would not outweigh the benefits (Mehta et al., 2014).

Donken et al. (2012) reviewed several databases including Cochrane and Medline to assess the effects of surgical versus conservative management of ankle fractures in adults. Three randomized controlled trials and one quasi-randomized controlled trial met inclusion criteria with a total of 292 participants with ankle fractures. However, all studies were not blinded and posed a high risk of bias as a result. In addition, the trials used different and incompatible outcome measures to evaluate function and pain. One trial (92 of 111 randomized participants) followed up patients at seven years and found no statistically significant differences between conservative and surgical treatment in patient-reported symptoms (self-assessed ankle "troubles": 11/43 vs. 14/49) or in difficulty ambulating. Another study, reporting data for 31 of 43 randomized participants, identified a statistically significantly better mean Olerud score among the surgical group but no difference between the two groups in pain scores after a mean follow-up of two years. Another trial completed follow up at 3.5 years on 49 of 96 randomized participants and reported no difference between the two groups in a non-validated clinical score. Results pooled from two trials of participants with osteoarthritis signs (radiographically identified) at averages of 3.5 and 7.0 years follow-up revealed no between-group differences (44/66 versus 50/75). Donken et al. (2012) concluded there is currently insufficient evidence to determine whether surgical or conservative management produces superior long-term outcomes for ankle fractures in adults.

Hulsker et al. (2011) evaluated fifteen articles with a total of 498 patients treated with an *open* ankle fracture. The authors concluded rigid internal fixation should be carried out with the goal of anatomic restoration of the ankle mortise and prevention of long-term secondary degenerative changes that lead to pain and stiffness. Within this same context of open ankle fractures, they recommended external fixation should only be considered when the surrounding soft tissue is inadequate to cover the materials (plates, pins, screws, etc.) used for an internal fixation. Nanchahal et al. (2009) concurred noting inadequate soft tissue cover may increase the risk of deep sepsis.

Surgical fixation of ankle and foot trauma can present challenges. Alternative approaches to internal fixation such as percutaneous or external fixation may be appropriate for patients with open wounds, significant edema, or poor skin condition(s) predisposing these patients to tissue/wound breakdown. Such a fixation approach may also be appropriate for fractures with extensive damage to the soft tissue envelope. Percutaneous fixation can benefit both soft tissue and osseous healing when used correctly (e.g., preserving blood supply, minimizing soft tissue loss, restoring limb function) (McMillen et al., 2011).

Fracture of the posterior malleolus is commonly found with ankle fractures. The integrity of the posterior malleolus and its ligamentous attachment is important for load transfer and stability. Fixation of posterior malleolus fractures within the context of rotational ankle injuries can be beneficial (e.g., restoring articular congruity, rotary stability); however current indications are unclear. Some cite fragment size as a percentage of the

anteroposterior dimension of the articular surface as an indicator for fixation. However, multiple factors may contribute to the fixation decision (e.g., syndesmotic stability, articular impaction, comminution). Outcome studies for ankle fractures show a poorer prognosis with a fractured posterior malleolus (Irwin, 2013).

Potential complications with surgical intervention while uncommon include wound infection, implant or fixation failure, pulmonary embolism, mortality, amputation, and reoperation (Singh et al., 2014). Risks from surgical treatment of ankle fractures include difficulty with bone healing, arthritis, pain (e.g., from the plates and screws that are used to secure the fracture), infection, bleeding, blood clots in the leg, and injury to blood vessels, tendons, or nerves.

Surgical intervention may be contraindicated if there is significant soft tissue swelling, infection, skin, or vascular problems (e.g., diabetes), a non-functional extremity from stroke or paralysis, rheumatoid arthritis, use of anticoagulants, patient smokes cigarettes or has a medical condition that would increase the risk of anesthetic and/or surgery related complications (Meyr et al., 2017).

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 Foot and Ankle Surgeons (ACFAS) Cosmetic Surgery Position Statement (2020). Retrieved February 12, 2024 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

Donken, C. C., Al-Khateeb, H., Verhofstad, M. H., & van Laarhoven, C. J. (2012). Surgical versus conservative interventions for treating ankle fractures in adults. *The Cochrane Database of Systematic Reviews,* (8), CD008470. DOI: 10.1002/14651858.CD008470.pub2

Hulsker, C. C., Kleinveld, S., Zonnenberg, C. B., Hogervorst, M., & van den Bekerom, M. P. (2011). Evidence-based Treatment of Open Ankle Fractures. *Archives of Orthopaedic and Trauma Surgery, 131*(11), 1545–1553

Irwin, T. A., Lien, J., & Kadakia, A. R. (2013). Posterior malleolus fracture. *The Journal of the American Academy of Orthopedic Surgeons, 21*(1), 32-40. DOI: 10.5435/JAAOS-21-01-32

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

McMillen, R. L., & Gruen, G. S. (2011). Advancements in percutaneous fixation for foot and ankle trauma. *Clinics in Podiatric Medicine and Surgery, 28*(4), 711-726

Mehta, S. S., Rees, K., Cutler, L., & Mangwani, J. (2014). Understanding risks and complications in the management of ankle fractures. *Indian Journal of Orthopaedics, 48*(5), 445–452. https://doi.org/10.4103/0019-5413.139829

Meyr, A. J., Mirmiran, R., Naldo, J., Sachs, B. D., & Shibuya, N. (2017). American College of Foot and Ankle Surgeons Clinical Consensus Statement: Perioperative Management. *The Journal of Foot and Ankle Surgery, 56*(2), 336-356. doi:10.1053/j.jfas.2016.10.016

Nanchahal J, Nayagam, S., Khan, U., Moran, C., Barrett, S., Sanderson, F., & Pallister, I. (2009). Standards for the management of open fractures of the lower limb. [Internet] British Association of Plastic Reconstructive and Aesthetic Surgeons. Retrieved February 14, 2024 from http://www.bapras.org.uk/docs/default-source/commissioning-and-policy/standards-for-lower-limb.pdf?sfvrsn=0

Singh, R., Kamal, T., Roulohamin, N., Maoharan, G., Ahmed, B. & Theobald, P. (2014). Ankle Fractures: A Literature Review of Current Treatment Methods. *Open Journal of Orthopedics*, *4*(11), 292-303