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Subject: Plantar Fasciitis | Heelspur.
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INSTRUCTIONS FOR USE
This Medical Necessity Guideline outlines the factors CareAllies considers in determining medical necessity for this indication. Please note, the terms of a participant's particular benefit plan document or summary plan description (SPD) may differ significantly from the standard upon which this Medical Necessity Guideline is based. For example, a participant's benefit plan document or SPD may contain a specific exclusion related to the topic addressed. In the event of a conflict, a participant's benefit plan document or SPD always supercedes the information in this Medical Necessity Guideline. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document or SPD. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable group benefit plan document or SPD in effect on the date of service; 2) any applicable laws/regulations, and; 3) the specific facts of the particular situation. Medical Necessity Guidelines are not recommendations for treatment and should never be used as treatment guidelines. ©2007 Intracorp/CareAllies

Open or endoscopic plantar fasciotomy is considered medically necessary for the treatment of plantar fasciitis following the failure of six months of appropriate medical therapy.

The following interventions, when used for the treatment of plantar fasciitis, are considered experimental, investigational or unproven and thus not medically necessary for this indication (this list may not be all-inclusive):

- acupuncture
- custom-fitted or custom-fabricated foot orthoses
- electron-generating devices
- extracorporeal shock wave therapy (ESWT) (OssaTron®)
- laser therapy
- microwave diathermy
- orthoses with magnetic foil
- radiotherapy
- stereotactic radiofrequency thermal lesioning
- trigger-point needling and infiltration of the proximal medial gastrocnemius muscle

General Background

Plantar fasciitis is an overuse injury resulting in inflammation of the plantar fascia, which connects the heel to the toes. It is a common cause of heel pain in adults. Symptoms usually start gradually with mild pain at the heel, pain after exercise and pain with standing first thing in the morning. On physical examination, firm pressure will elicit a tender spot over the medial tubercule of the calcaneus. Risk factors for plantar fasciitis may include: obesity, age, being female, limited dorsiflexion of the ankle joint, prolonged weight bearing, and an increase in the amount of walking or running. Heel spurs are not necessarily associated with plantar fasciitis; heel spurs may be found in asymptomatic patients. Early treatment generally results in a shorter duration of symptoms.

First-Line Treatment

The mainstay of non-surgical treatment and the standard of care for initial treatment is a program of stretching exercises, ice, activity modification, weight-loss in overweight patients, recommendations for appropriate footwear, arch taping, nonsteroidal anti-inflammatory medications and shock-absorbing shoe inserts or orthoses. Off-the-shelf silicone, rubber or felt heel cushions are as effective as custom-fitted or

custom-fabricated foot orthoses (Fink, Mizel, 2001; Pfeffer, et al., 1999). These therapies are more likely to be effective if treatment is started early. About 90% of people with plantar fasciitis improve significantly after two months of initial treatment (American Orthopaedic Foot & Ankle Society, 2001).

Iontophoresis is also a widely accepted non-invasive therapy for plantar fasciitis. Iontophoresis is the use of electric impulses from a low-voltage galvanic current stimulation unit to drive topical corticosteroids into soft tissue structures. A randomized, double-blind, placebo-controlled study was conducted by Gudeman, et al. (1997) comparing traditional modalities alone to traditional modalities with iontophoresis. Iontophoresis combined with traditional modalities resulted in significantly-improved, immediate pain-relief but no difference in outcome at one month after completion of treatment. Iontophoresis may be tried as part of a first-line physical therapy program.

Second-Line Treatment

In the event early treatment fails, night splints, steroidal anti-inflammatory injections or a walking cast are the next level of the standard of care.

The evidence for night splinting is limited. Crawford and Thomson (2003) conducted a systematic review of the literature for randomized and quasi-randomized controlled trials on the effectiveness of night splints in reducing pain in patients with plantar fasciitis. A cross-over trial of night splints reported improvements in patients' heel pain during the two treatment phases (Powell, 1998). A randomized clinical trial by Batt et al. (1996) found tension night-splinting to be significantly more effective than standard therapy alone. Several retrospective studies support the efficacy of night splints (Barry, et al., 2002; Berlet, et al., 2002).

Crawford and Thomson (2003) conducted a systematic review of the literature for randomized and quasirandomized controlled trials on the effectiveness of steroid injections in reducing pain in patients with plantar fasciitis. A prospective, randomized, controlled, observer-blinded study by Porter and Shadbolt

(2007) reported significantly lower pain scores at three months for patients who received intralesional corticosteroid injection (n=64) than those who received three applications of low-dose extracorporeal shock wave therapy (ESWT) (n=61). At 12 months, corticosteroid injection and ESWT were found to be equally effective. The studies that compare steroid injections with placebo substances show initial significant improvement; however, studies that include follow-up after one month show no difference in outcome at that time. This suggests that the effectiveness of steroid injections is short term. Risks of steroid injection into the heel include rupture of the plantar fascia and fat pad atrophy.
The use of a short-leg walking cast for several weeks is a standard of care as a final conservative step in the treatment of plantar fasciitis. In one study by Gill and Kiebzak (1996), a short-leg cast worn for a minimum of three weeks was found to be an effective form of treatment for chronic plantar heel pain.

Surgical Intervention
Surgical intervention should be considered only for intractable pain which has not responded to 6-12 months of proper conservative treatment. Plantar fasciotomy can be conducted using open or endoscopic techniques. Surgical interventions can include surgical removal or release of the fascia, and removal of bone spurs. Spurs are usually resected, but no study has demonstrated that this makes a difference to the result. Risks of surgical intervention include: flattening of the longitudinal arch (which may cause lateral hindfoot and forefoot pain), heel hypoesthesia, rupture of the plantar fascia and complications related to anesthesia. Davies et al. (1999) analyzed a case series of 43 patients with 47 painful heels who underwent partial plantar fascia release and nerve decompression. After an average of 31 months of follow-up, 49% of the patients were reportedly satisfied with their outcome.
Endoscopic plantar fasciotomy is a less invasive technique requiring an incision of less than one-half inch in length and utilizing an arthroscope to visualize and release the fascia. It has been proposed as an improvement over open plantar fasciotomy, resulting in less trauma and improved recovery times. The only study to compare open with endoscopic techniques is that of Kinley et al. (1993), who compared 66 endoscopic with 26 open procedures and found significantly less postoperative pain, earlier return to work and fewer complications in the patients undergoing endoscopic surgery. The study is limited by lack of randomization.

There are a substantial number of retrospective studies supporting the use of endoscopic plantar fasciotomy. The largest case series (n=652) documented the outcomes associated with endoscopic plantar fasciotomy (Barrett, et al., 1995). Six hundred thirty-three of the operations (97%) were a success, as measured by relief in heel pain. Several smaller studies were conducted with case populations ranging from 17 to 69 cases, documenting improvement by patient satisfaction scores and/or foot scores (Boyle and Slater, 2003; O'Malley, et al., 2000; Lundeen, et al., 2000; Benton-Weil, et al., 1998). Based on the large number of reports of relief of heel pain from a series of non-randomized trials, endoscopic plantar fasciotomy appears effective in the treatment of plantar fasciitis.

Experimental/Investigational/Unproven Therapies for Plantar Fasciitis
There are many therapies that have been suggested for treatment of plantar fasciitis that are not proven in the literature and not accepted as standard of care.

Acupuncture: Acupuncture is a method of producing analgesia or treating disease by stimulating anatomical locations on the skin by the penetration of needles. There are no studies specific to its efficacy in the treatment of plantar fasciitis. The overall body of evidence in general is of poor quality consisting of numerous uncontrolled studies, case series and case reports. There is no evidence that supports the efficacy of acupuncture for the treatment of plantar fasciitis.

Electron-Generating Devices: There is no evidence to support the use of electron generating devices in the treatment of plantar fasciitis (Crawford and Thomson, 2003).

Extracorporeal Shock Wave Therapy (ESWT): ESWT, also called orthotripsy, is a noninvasive treatment that involves delivery of 1000-3000 shock waves to the painful heel region, and has been introduced as an alternative to surgery for patients with chronic plantar fasciitis that has not responded to medical therapy. The mechanism by which ESWT might work to relieve pain associated with plantar fasciitis is unknown. It has been hypothesized that the shock waves may reduce transmission of pain signals from sensory nerves in the plantar fascia, and /or may stimulate healing (Huang, et al., 2000).
Buchbinder et al. (2002) conducted a randomized controlled study (n=160) and found no evidence to support a beneficial effect on pain, function and quality of life of ultrasound-guided ESWT over placebo in patients with ultrasound-proven plantar fasciitis up to 12 weeks following treatment.
Haake et al.(2003) stated that ESWT was no better than sham therapy for heel pain as result of randomized, double-blind, controlled trial (n=135). Statistically similar success rates for improvement were found in treated and placebo group at 12 weeks and one-year follow-up.
A meta-analysis (Crawford, Cochrane Review, 2003) found some indirect evidence that patients' heel pain improves spontaneously. Patients with heel pain in all trial arms improved spontaneously regardless of their treatment allocation, demonstrating that the condition is self-limiting in some patients. ESWT was evaluated in five randomized controlled trials using different doses, with no consensus reached regarding variation of range of energy (high versus low), number of pulses, or number of treatment sessions (Rompe, et al., 1996; Rompe, et al., 2002; Krischek, et al., 1998; Ogden, et al., 2001; Buchbinder, et al.,

2002). The results of the meta-analysis found that the effectiveness of ESWT for plantar fasciitis was unclear.
The Institute for Clinical Systems Improvement (ICSI) conducted a technology review of ESWT for plantar fasciitis and concluded that although it is a safe, non-surgical procedure, the current scientific evidence does not permit a conclusion to be reached regarding the efficacy of ESWT for plantar fasciitis (ICSI, 2004).
Tice (2004) conducted a systematic review of the evidence on ESWT for musculoskeletal disorders on behalf of the California Technology Assessment Forum (CTAF). The author noted a wide variability in the techniques studied and in the quality of randomized trials. It was concluded that ESWT for the treatment of plantar fasciitis has not been shown to improve net health outcomes compared to sham therapy and therefore cannot be deemed as beneficial as the established alternatives (Tice, 2004).

The National Institute for Clinical Excellence (NICE) completed a systematic review on the use of ESWT for refractory tendinopathies (i.e., plantar fasciitis and tennis elbow). According to the NICE, the current evidence on ESWT specifically for tennis elbow and plantar fasciitis, suggests that there are no major safety concerns. Evidence on efficacy is conflicting and suggests that the procedure produces little benefit apart from a placebo response in some patients (NICE, 2005).
A Blue Cross Blue Shield Association technology assessment evaluated whether ESWT improves health outcomes for patients with plantar fasciitis that is unresponsive to conservative measures. Evidence was reviewed from five double-blind, randomized controlled trials (RCTs) reporting on a total of 878 patients (Healthtronics Surgical Services, Inc., 2002/Ogden, et al., 2001; Dornier Medical Systems, Inc., 2002/Theodore, et al., 2004; Buchbinder, et al., 2002; Haake, et al., 2002; Rompe, et al., 2003). Highenergy ESWT was used in two of these trials. Improvement in morning pain and increased activity were the most common outcome measures. The evidence was found to be insufficient to permit a conclusion on the health outcome effects of ESWT for plantar fasciitis. Where reported, improvement in morning pain was not accompanied by a significant difference in quality-of-life measurement or use of pain medication. It was concluded that ESWT for chronic plantar fasciitis has not been demonstrated to improve health outcomes in the investigational setting (Blue Cross Blue Shield Association, 2005).

Insoles with Magnetic Foil: The theory behind magnet therapy is that magnetic fields create an electrical current that interrupts the transmission of pain signals in the central nervous system as well as increasing blood flow to an area, boosting the flow of oxygen and other nutrients, ultimately reducing pain and swelling. Two randomized clinical trials comparing magnetic versus sham insoles for reducing pain have demonstrated that there is no difference between the therapies in patients with plantar fasciitis (Caselli, et al., 1997; Winemiller, et al., 2003). There is no evidence to support the use of magnetic insoles in the treatment of plantar fasciitis.

Laser Therapy: Laser therapy, also called low-level laser therapy (LLLT) is a form of phototherapy which involves the application of low-power monochromatic and coherent light to injuries and lesions to stimulate healing. LLLT is used to increase the speed, quality and tensile strength of tissue repair, resolve inflammation, and give pain relief. Basford et al. (1998) conducted a randomized, double-blinded, placebo-controlled clinical study of 32 subjects comparing dummy versus active laser therapy over four weeks using relief of pain as the endpoint. No significant differences were found between the groups in pain scores either during treatment or at one-month follow-up. There is no evidence that laser therapy is effective in the treatment of plantar fasciitis.

Microwave Diathermy: Microwave diathermy uses microwave radiation to create heat within the tissues. There is no evidence supporting the efficacy of this modality in the treatment of plantar fasciitis (Crawford and Thomson, 2003).

Radiotherapy: Radiotherapy for plantar fasciitis treatment has been well established in Germany for about 100 years. The exact radiobiological mechanisms of the effect of ionizing radiation on plantar fasciitis have been incompletely investigated and understood. In 2001, the Patterns of Care Study in Benign Diseases Panel of the German Society for Radiation Oncology distributed a standardized questionnaire to all radiotherapy departments in Germany to determine their experience with radiotherapy for plantar fasciitis (Micke, et al., 2004). The records of 7947 patients were prospectively evaluated over a median follow-up period of 28 months for reduction in pain scores. Several different types of equipment and doses of radiation were utilized among the centers. No dose-response relationship could be established. Complete relief of pain for more than three months was reported in a median of 70% of all treated patients and pain relief lasting a minimum of 12 months was reported in 65% of patients. No statistical analysis of the significance of these percentages was reported. Further research is needed to demonstrate the safety and efficacy of this therapy.
Stereotactic Radiofrequency Thermal Lesioning: Stereotactic radiofrequency thermal lesioning, or radiofrequency lesioning, is a minimally invasive procedure, in which a probe the size of a needle is placed through the skin in the heel in the area of pain. While the patient is under intravenous (IV) sedation, the tip of the probe heats up to 87° Celsius (189° Fahrenheit), and is kept there for 90 seconds. The proposed mechanism of action is desensitization of the nerve endings. In a retrospective study of 39

patients, Sollitto et al. (1997) found that 92% of patients experience resolution of symptoms. This study is limited by the lack of a control group and randomization; a more rigorous design is needed.

Trigger-Point Needling and Infiltration: Trigger-point needling for plantar fasciitis is the needling and infiltration of anesthetic into the myofascial trigger points at the proximal portion of the medial gastrocnemius muscle. Imamura et al. (2003) conducted a randomized, controlled study of 64 subjects comparing conventional physical therapy to physical therapy plus injection of 1% lidocaine to the taut band at the proximal portion of the medial gastrocnemius muscle of the involved limb. Statistically significant reduction of pain and improvement in function were found in both groups without difference between them. However, the time required to achieve the same improvement was significantly less in the injected group than in the control group. Post-injection soreness and local hematoma were found in 30% of the patients receiving trigger-point needling. Additional studies are needed to support the effectiveness of this therapy.

Ultrasound: Therapeutic ultrasound is assumed to have thermal and mechanical effects on the target tissue, resulting in an increased local metabolism, circulation, extensibility of connective tissue and tissue regeneration. Crawford and Snaith (1996) conducted a randomized clinical trial evaluating the efficacy of ultrasound compared to placebo ultrasound. Both groups showed a reduction in pain, but there was no significant difference in pain between the two groups. Ultrasound has not been shown to be effective in the treatment of plantar fasciitis.

Professional Societies/Organizations
In a joint policy statement, the American Podiatric Medical Association (APMA) and the American College of Foot and Ankle Surgeons (ACFAS) acknowledge that ESWT is one of the many procedures used to treat plantar fasciitis. In addition to the clinical trials used for U.S. Food and Drug Administration (FDA) approval of the Ossatron and Dornier Epos Ultra devices, the societies examined seven studies in their review of the literature. Weil et al. (2002) analyzed the results of 40 feet treated with high-energy ESWT (n=36). The data from this cohort was compared to that of nine patients who underwent percutaneous plantar fasciotomy (PPF) at the same institution. It was concluded that ESWT significantly reduced symptoms associated with chronic plantar fasciitis and compared favorably to the results achieved with PPF. Limitations of this study include the lack of randomization and small patient population. Alvarez (2002) looked at high-energy ESWT in a case series of 20 patients and reported 18 of those patients to be improved or pain-free after treatment. Two other studies were RCTs that evaluated the effectiveness of low-energy ESWT and found it to be no better than placebo or ineffective in the treatment of plantar fasciitis (Haake, et al., 2003; Buchbinder, et al., 2002). In contrast, a third RCT (n=45) compared applications of low-energy ESWT to sham treatment and reported ESWT to be a safe and effective method for the treatment of chronic plantar fasciitis in long-distance runners (Rompe, et al., 2003). Rompe et al. noted that further study is needed to compare the effectiveness of repeated low-energy versus single high-energy shock wave applications. Despite the limited evidence from small studies, few randomized trials and conflicting results identified in the literature, the APMA/ACFAS concluded that “ESWT appears to be an efficacious, FDA-approved, non-surgical option in the treatment of chronic proximal plantar fasciitis” (APMA/ACFAS, 2003).

Summary
Conservative first- and second-line treatments for plantar fasciitis are most often successful. For those who fail medical management, plantar fasciotomy or plantar fascia release may be considered. A number of investigational treatment modalities have been proposed for plantar fasciitis, the most controversial of which is extracorporeal shock wave therapy (ESWT). Although promising, the evidence in the published peer-reviewed literature regarding the efficacy of ESWT remains inconclusive at this time.

Coding/Billing Information
Note: This list of codes may not be all-inclusive.

When medically necessary:

Number: 0001
CPT®*
Codes

Description
28008 Fasciotomy, foot and/or toe
29425 Application of short leg cast (below knee to toes); walking or ambulatory type
29515 Application of short leg splint (calf to foot)
29893 Endoscopic plantar fasciotomy
97033 Application of a modality to one or more areas; iontophoresis, each 15 minutes
97760 Orthotic(s) management and training (including assessment and fitting when not otherwise reported), upper extremity(s), lower extremity(s) and/or trunk, each 15 minutes
97762 Checkout for orthotic/prosthetic use, established patient, each 15 minutes
HCPCS
Codes

Description
A4570 Splint
A4580 Cast supplies (e.g., plaster)
A4590 Special casting material (e.g., fiberglass)
L1900 Ankle-foot orthoses (AFO); spring wire, dorsiflexion assist calf band, custom fabricated
L1930 Ankle foot orthoses; plastic or other material, prefabricated, includes fitting and adjustment
L1940 Ankle foot orthoses; plastic or other material, custom-fabricated
Q4045 Cast supplies, short leg splint, adult (11 years +), plaster
Q4046 Cast supplies, short leg splint, adult (11 years +), fiberglass
ICD-9-CM
Diagnosis
Codes

Description
Multiple/Varied codes

Experimental/Investigational/Unproven/Not medically necessary:
CPT* Codes Description
20552 Injection(s); single or multiple trigger point(s), one or two muscle(s)
20553 Injection(s); single or multiple trigger point(s), three or more muscle(s)
28890 Extracorporeal shock wave, high energy, performed by a physician, requiring anesthesia other than local, including ultrasound guidance, involving the plantar fascia
97024 Application of a modality to one or more areas; diathermy (eg, microwave)
97810 Acupuncture, one or more needles; without electrical stimulation, initial 15 minutes of personal one-on-one contact with the patient
97811 Acupuncture, one or more needles; without electrical stimulation, initial 15 minutes of personal one-on-one contact with the patient, with re-insertion of needle(s)
97813 Acupuncture, one or more needles; with electrical stimulation, initial 15 minutes of personal one-on-one contact with the patient
97814 Acupuncture, one or more needles; with electrical stimulation; initial 15 minutes of personal one-on-one contact with the patient, with re-insertion of needle(s)
HCPCS
Codes
Description
L3000 Foot, insert, removable, molded to patient model; “UCB” type; Berkeley Shell, each
ICD-9-CM
Diagnosis
Description

Codes
No specific codes

***Current Procedural Terminology (CPT®) American Medical Association: Chicago, IL.**
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