

ENTITLEMENT ELIGIBILITY GUIDELINES

CHRONIC ACHILLES TENDONITIS OR ACHILLES BURSITIS

MPC 01321
ICD-9 726.7

DEFINITION

This denotes painful inflammatory and/or degenerative changes in the Achilles tendon, or inflammation of the soft tissue, or inflammation and thickening of the deep retrocalcaneal bursa about the Achilles tendon. The tendon may be identified as tendo Achilles, calcaneal tendon or tendo calcaneus.

Please note: Entitlement should be granted for a *chronic* condition only. For VAC purposes, “chronic” means that the condition has existed for at least 6 months. Signs and symptoms are generally expected to persist despite medical attention, although they may wax and wane over the 6 month period and thereafter.

DIAGNOSTIC STANDARD

Diagnosis by a qualified medical practitioner is required. Evidence of duration of a disability for at least 6 months should be provided.

ANATOMY AND PHYSIOLOGY

The Achilles tendon is a powerful tendon at the back of the heel. It is the common tendon of the gastrocnemius and soleus muscles of the calf, which attaches to the tuberosity of the calcaneus. It does not have a synovial sheath as do most tendons around the ankle joint. It is surrounded by loose, fatty areolar tissue, i.e. the paratenon, which allows gliding movements.

The connective tissue of tendons is dense and fibrous with little inherent vascularity (blood flow) and, therefore, tendons are not predisposed to inflammatory processes. The inflammation that occurs around a tendon is felt to be more accurately termed “peritendonitis” rather than “tendonitis”.

At the level of the insertion of the Achilles tendon there are two bursae. One lies deep to the tendon, between it and the posterior surface of the os calcis (retrocalcaneal bursa). The other is subcutaneous and lies superficial to the insertion of the tendon.

Bursitis refers to inflammation of a bursa. Inflammation of the superficial subcutaneous bursa (*Haglund's disease*) over the Achilles tendon is more common than inflammation of the deep retrocalcaneal bursa (retrocalcaneal bursitis).

The deep retrocalcaneal bursa is a true bursa, a sac-like cavity lined by synovial tissue and constantly present. The subcutaneous bursa is an adventitious bursa, which is acquired after birth and develops in response to trauma (friction) to soft tissue overlying a bony prominence.

CLINICAL FEATURES

There may be inflammation of the Achilles tendon which shifts as the tendon moves with dorsi-flexion and plantar-flexion of the foot. The inflammation produces pain and tenderness in the tendon. Achilles tendon pathology may also occur without inflammation, e.g. in metabolic or rheumatic disorders. The tendon may become tender and thickened as Achilles Tendonitis becomes chronic.

Inflammation of the soft tissue surrounding the Achilles tendon also produces pain, diffuse swelling over the tendon, crepitus on moving the foot, and tenderness which remains in one spot regardless of the position of the foot.

Retrocalcaneal bursitis presents with local pain and swelling, palpable behind the Achilles tendon on the bursal projection. Associated tenderness, thickening of the overlying skin, and signs of local inflammation are found as the retrocalcaneal bursitis becomes chronic.

In certain cases, e.g. when caused by systemic disease, the condition may be bilateral. Medical attention may not be sought until symptoms have been present for some time.

Because it takes a lot of repetitive tensile overload to cause this injury and because it is frequently associated with degenerative tendonosis, surgical treatment is common.

The literature has identified a significant number of factors as being causative of, contributory to, or aggravation factors in Achilles Tendonitis and Bursitis. Because many of the factors in the evolution of the condition are difficult to modify or to eliminate, the condition may persist over an extended period of time. Thus, aggravation is a common feature of the course of the condition as one or more of the factors is successively applied to the existing condition.

PENSION CONSIDERATIONS

A. CAUSES AND/OR AGGRAVATION

THE TIMELINES CITED BELOW ARE NOT BINDING. EACH CASE SHOULD BE ADJUDICATED ON THE EVIDENCE PROVIDED AND ITS OWN MERITS.

1. Familial hypercholesterolemia

This is felt to be irritation secondary to tendon xanthomatosis (a cholesterol deposit).

2. Loss of heel fat pad because of aging

This is felt to be due to reduced shock absorbency with loss of the heel fat pad.

3. Foot or leg alignment problems

Many foot or leg alignment problems may contribute to the evolution and/or aggravation of Achilles Tendonitis, including:

- Haglund's deformity of calcaneus
- varus deformity of hindfoot
- valgus deformity of hindfoot
- cavus deformity of foot
- forefoot valgus
- rigid plantarly flexed first ray of foot

4. Participation in sports and physical activity

For participation in sports and physical activity to cause or aggravate Achilles Tendonitis or Achilles Bursitis, the following should be evident:

Signs/symptoms of Achilles Tendonitis or Achilles Bursitis should occur during the activity or within 7 days of cessation of the activity; *and* Signs/symptoms should be ongoing or recurrent for a period of at least 6 months to be considered "chronic" for pension purposes.

A wide range of sports which require movement of the ankle joint, and any activities involving any jumping or running, regardless of quality of footwear, have been identified as causation and/or aggravation factors, e.g. gymnastics, skating, tennis, squash, football, basketball and baseball. The mechanism of injury is considered to be increased stress on the Achilles tendon.

5. Inadequate and incorrect footwear in superficial adventitial bursa

This is restricted to superficial adventitial bursa. Symptoms occur at the time of the wearing of footwear.

Inadequate footwear has been described as showing excessive medial wear, excessive lateral sole wear, inflexible forefoot-sole stiffness, poor-fitting or excessively flexible heel “counter” (a piece of material inserted between the lining and outside of a shoe or boot quarter to make it stiff), and ineffective shock absorbing qualities. Incorrect footwear is commonly associated with shoes which are rigid and poorly shaped.

6. Arthritic diseases

Seronegative arthritic diseases can cause a disorder of the muscular/tendonous attachment to bone and cause or aggravate Achilles Tendonitis or Bursitis.

These arthritic conditions include:

- Reiter’s syndrome
- psoriatic arthritis
- ankylosing spondylitis
- Behçet’s syndrome
- intestinal arthropathies
- rheumatoid arthritis
- gout

7. Renal transplantation in Achilles Tendonitis and rupture

There is a strong association between renal transplantation and Tendonitis, with recognition of a kidney transplant as a causal and/or aggravation factor where the transplant occurred up to ten years prior. Also relevant are ruptures of the Achilles tendon, occurring up to 6 years after transplantation.

The association may be explained, at least in part, on the basis of:

- steroid intake in Achilles Tendonitis - A significant correlation has been found between symptoms of Tendonitis and the steroid dose, with a statistically significant higher steroid intake observed in patients with tendonitis. Steroids are known to weaken tendons, with the mechanism felt to be suppression of the repair of degenerated or partially ruptured tendons.

- chronic acidosis from renal failure
- the return to a higher level of activity after transplantation following a general decline in physical activity during dialysis.
- hemodialysis in tendon ruptures - The mechanism is felt to be changes in the tendo-osseus junction due to secondary hyperparathyroidism.

8. Inability to obtain appropriate clinical management

B. MEDICAL CONDITIONS WHICH ARE TO BE INCLUDED IN ENTITLEMENT/ASSESSMENT

- Superficial calcaneal bursitis
- Deep retrocalcaneal bursitis
- Achilles peritendonitis
- Posterior heel adventitial bursitis
- Haglund's disease and Haglund's deformity (pump bump)

C. COMMON MEDICAL CONDITIONS WHICH MAY RESULT IN WHOLE OR IN PART FROM CHRONIC ACHILLES TENDONITIS OR ACHILLES BURSITIS AND/OR ITS TREATMENT

REFERENCES FOR CHRONIC ACHILLES TENDONITIS OR ACHILLES BURSTITIS

1. Australia. Department of Veterans Affairs: medical research in relation to the Statement of Principles concerning Chronic Achilles Tendonitis or Achilles Bursitis, which cites the following as references:
 - 1) Plattner P and Mann R (1993) Disorders of Tendons. *Surgery of the Foot and Ankle 6th Edition Vol 2*. Mann RA, Coughlin MJ (Eds) Mosby St Louis Chapter 19 pp 805-817.
 - 2) Apley AG and Solomon L (1993) The ankle and foot, Chapter 21. Overuse Injuries, Chapter 28. *Apley's System of Orthopaedics and Fractures 7th Edition*. Butterworth Heinemann.
 - 3) Klenerman L and Nissen KI (1991) Common causes of pain. *The Foot and its Disorders 3rd Edition*. Klenerman L (Ed) Blackwell Scientific Publications Melbourne Chapter 6 pp 93-95.
 - 4) Renton P (1991) Radiology of the foot. *The Foot and its Disorders 3rd Edition*. Klenerman L (Ed) Blackwell Scientific Publications Melbourne Chapter 13A pp 278-284.
 - 5) Cailliet R (1983) Painful conditions of the Heel. *Foot and Ankle Pain 2nd Edition*. FA Davis Company Philadelphia Chapter 9 pp 139-146.
 - 6) Adams JC (1986) The leg, ankle and foot. *Outline of Orthopaedics 10th Edition*. Churchill Livingstone Edinburgh Chapter 10 pp 422-450.
 - 7) *Dorland's Illustrated Medical Dictionary 28th Edition* (1994) WB Saunders Company Philadelphia p 1667.
 - 8) Lemm M, Blake RL, Colson JP and Ferguson H (1992) Achilles Peritendinitis. A literature review with case report. *Journal of the American Medical Association*. Vol 82 No 9 pp 482-490.
 - 9) Plattner PF (1989) Tendon problems of the foot and ankle. The spectrum from Peritendinitis to rupture. *Foot and Ankle Postgraduate Medicine* Vol 86 No 3 p 157.
 - 10) Clain Mr and Baxter DE (1992) Achilles tendinitis. Foot fellow's review. *Foot and Ankle* Vol 13 No 8 pp 484-485.
 - 11) Welsh RP and Clodman J (1980) Clinical survey of Achilles tendonitis in athletes. *CMA Journal*. Vol 122 pp 193-194.
 - 12) Mathon G, Gagne C, Brun D, Lupien PJ and Moorjani S (1985) Articular manifestations of familial hypercholesterolaemia. *Annals of the Rheumatic Diseases*. Vol 44 pp 599-602.
 - 13) Stephens MM (1994) Haglund's deformity and retrocalcaneal bursitis. *Orthopaedic Clinics of North America* Vol 25 No 1 p 41.
 - 14) Leach RE, Dilorio E and Harney RA (1983) Pathologic Hindfoot Conditions in the Athlete. *Clinical Orthopaedics and Related Research*. No 177 p 118.
 - 15) Berkebile DE (1991) Chronic achilles tendonitis. *South Dakota J Med*. Vol 44 No 11 p 311.

- 16) Nichols AW (1989) Achilles Tendinitis in running athletes. *The Journal of the American Board of Family Practice*. Vol 2 No 3 p 198.
 - 17) Clement DB, Taunton JE and Smart GW (1984) Achilles tendinitis and Peritendinitis: etiology and treatment. *Am J Sports Med*. Vol 12 pp 179-184.
 - 18) Leach RE, Dilorio E and Harney RA (1983) *op cit*. p 118.
 - 19) Department of Veterans' Affairs (1994) *Guide to the assessment of rates of veterans' pensions Fourth edition*. Australian Government Publishing Service Canberra. p 138.
 - 20) Gerster JC (1980) Plantar fasciitis and Achilles tendinitis among 150 cases of seronegative spondarthritis. *Rheumatology and Rehabilitation*. Vol 19 p 218.
 - 21) Gilliland BC (1994) Relapsing polychondritis and miscellaneous arthritides. *Harrison's Principles of Internal Medicine 13th Edition*. Isselbacher KJ, Braunwald E, Wilson JD, Martin JB, Fauci AS and Kasper DL (Eds). McGraw-Hill New York Chapter 299 p. 1708.
 - 22) Resnick D, Feingold ML, Curd J, Niwayama G and Goergen TG (1977) Calcaneal Abnormalities in Articular Disorders. *Radiology*. Vol 125 p 360.
 - 23) Gerster G, Vischer TL, Bennani A and Fallet GH (1977) The painful heel. Comparative study in rheumatoid arthritis, ankylosing spondylitis, Reiter's syndrome and generalised osteoarthritis. *Annals of the Rheumatic Diseases*. Vol 36 pp 343-348.
 - 24) Murison MSC, Eardley I and Slapak M (1989) Tendinitis-A common complication after renal transplantation. *Transplantation*. Vol 48 pp 587-589.
 - 25) Lotem M, Robson MD and Rosenfield JB (1974) Spontaneous rupture of the quadriceps tendon in patients on chronic haemodialysis. *Ann Rheum Dis*. Vol 33 p 428.
 - 26) Morein G, Goldschmidt Z, Pauker M, Seelenfreund M, Rosenfeld JB, Fried A (1977) Spontaneous tendon ruptures in patients treated by chronic hemodialysis. *Clinical Orthopaedics and Related Research*. No 124 p 212-213.
 - 27) Murphy KJ and McPhee J (1965) Tear of major tendons in chronic acidosis with elastosis. *J Bone Joint Surg*. Vol 47A p 1253.
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2. Dee, Roger, et al. *Principles of Orthopaedic Practice*. 2nd ed. Montreal: McGraw-Hill, 1997.
 3. Fauci, Anthony S. and Eugene Braunwald, et al, eds. *Harrison's Principles of Internal Medicine*. 14th ed. Montreal: McGraw-Hill, 1998.

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4. Harries, Mark and Clyde Williams, et al, eds. *Oxford Textbook of Sports Medicine*. 2nd ed. Toronto: Oxford University Press, 1998.
5. Jahss, Melvin H. *Disorders of the Foot*. Vol 2. Toronto: W.B. Saunders, 1982.
6. Kibler, Ben W., et al, eds. *Functional Rehabilitation of Sports and Musculoskeletal Injuries*. Maryland: Aspen Publications, 1998.
7. Subotnick, Steven L., ed. *Sports Medicine of the Lower Extremity*. 2nd ed. USA: W.B. Saunders, 1999.
8. Weinstein, Stuart L. and Joseph A. Buckwalter, eds. *Turek's Orthopaedics Principles and Their Application*. 5th ed. Philadelphia: J.P. Lippincott, 1994.