

MISCELLANEOUS

Pictorial Continuing Medical Education

STEROID INDUCED FAT PAD ATROPHY IN A PATIENT WITH CHRONIC PLANTAR FASCITIS

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A 32-year-old male presented to our clinic for second opinion regarding his right heel pain. He had two year history of right heel pain and a recent limp in gait for the past 3 months. There was no history of trauma or inflammatory joint disease. He had a thin body habitus. His work involved prolonged standing, which would aggravate his pain. Initially his heel pain was worse in the mornings and would gradually improve during the day, but he had no difficulty in walking. He never had similar symptoms in the left foot. Upon seeking medical attention, he was diagnosed with plantar fasciitis and was initially treated with non-steroidal anti-inflammatory medications along with the use of a heel pad. He did not have any physical therapy or treatment with modalities. Later, he received a steroid injection for plantar fasciitis with partial relief of pain, rendering the need of three repeat injections over a period of two years. His last steroid injection was eight weeks ago. His current pain was localized to the center of the heel which would increase with prolonged standing and walking barefoot. On examination, he had wasting of the right heel pad and mild flattening of the medial longitudinal arch without any skin changes or toe deformities (Figs 1 and 2). He was explicitly tender in the center of the heel with no sign of inflammation. Range of motion was full at both ankles. There was no loss of sensations strength and reflexes in the lower extremities. There was no limb length discrepancy. Left foot examination was unremarkable. His gait assessment revealed a limp which was attributed to a combination of heel pain and flattening of the longitudinal arch. The obvious wasting in the right heel pad and associated arch flattening was attributed to steroid induced fat pad atrophy. For further evaluation, an ultrasound was requested for our patient but he did not follow up.

Steroids are commonly used in the treatment of plantar fasciitis as an adjunct to other techniques; however, one should be aware that overuse of steroid injections can lead to rare complications like plantar fascial rupture^{1,2}, fat pad atrophy, iatrogenic plantar nerve injury and osteomyelitis. Ultrasound guided steroid injections followed by monitoring of soft tissue changes along with reduction of aggressive physical therapy post injection can prevent these complications.³



Fig. 1: Postero medial view; decreased thickness of heel pad with mild flattening of medial longitudinal arch of the right foot



Fig. 2: Antero medial view; decreased thickness of heel pad with mild flattening of medial longitudinal arch of the right foot compared to left

References

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2. Acevedo JI, Beskin JL. Complications of plantar fascia rupture associated with corticosteroid injection. *Foot Ankle Int.* 1998;19(2):91-7.
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Consultant

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Postgraduate Forum

BOOK AND ARTICLE NEWS

Book News

1. August 2017 Volume 28, Issue 3, p449-658 Pelvic Pain Edited by Kelly M. Scott.
2. May 2017 Volume 28, Issue 2, p215-448. Traumatic Brain Injury Rehabilitation Edited by Blessen C. Eapen, David X. Cifu.
3. Musculoskeletal Ultrasound Cross-Sectional Anatomy 1st , Kindle Edition by John C., MD Cianca (Author), Shounuck I., DO Patel (Author) Demos Medical; 1 edition (8 October 2017).
4. Physical Medicine and Rehabilitation Oral Board Review: Interactive Case Discussions 1st , Kindle Edition by R. Samuel, MD Mayer (Editor) Publisher: Demos Medical; 1 edition (28 September 2017).
5. Urodynamic Testing After Spinal Cord Injury: A Practical Guide 1st ed. 2017, Kindle Edition by Jean Jacques Wyndaele (Author), Apichana Kovindha (Author) Springer; 1st ed. 2017 edition (1 August 2017).

Article News

1. Shoe Orthotics for the Treatment of Chronic Low Back Pain: A Randomized Controlled Trial. Jerrilyn A. Cambron, Jennifer M. Dexheimer, Manuel Duarte, Sally Freels. p1752-1762. September 2017 Volume 98, Issue 9. Archives of Physical Medicine and Rehabilitation.
2. Prevalence and Etiology of Hypogonadism in Young Men With Chronic Spinal Cord Injury: A Cross-Sectional Analysis From Two University-Based Rehabilitation Centers Shannon D. Sullivan, Mark S. Nash, Eshetu Tefera, Emily Tinsley, Marc R. Blackman, Suzanne Groahp 751-760 August 2017 Volume 9, Issue 8, PM&R journal.
3. Assessment of bioelectrical activity of pelvic floor muscles depending on the orientation of the pelvis in menopausal women with symptoms of stress urinary incontinence: continued observational study. Kuba Ptaszkowski*, Romuald Zdrojowy, Lucyna Slupska, Janusz Bartnicki, Janusz Dembowski, Tomasz Halski, Malgorzata Paprocka-Borowicz European Journal of Physical and Rehabilitation Medicine 2017 August;53(4):564-74.
4. Effectiveness of Extracorporeal Shock Wave Therapy Without Local Anesthesia in Patients With Recalcitrant Plantar Fasciitis: A Meta-Analysis of Randomized Controlled Trials Lou, Jing; Wang, Shuai; Liu, Shuitao; More. American Journal of Physical Medicine & Rehabilitation. 96(8):529-534, August 2017.
5. Grip Strength on the Unaffected Side as an Independent Predictor of Functional Improvement After Stroke. Yi, Youbin; Shim, Jae Seong; Oh, Byung-Mo; More American Journal of Physical Medicine & Rehabilitation. 96(9):616-620, September 2017.

REHAB QUIZ

1. Which of the following is not a joint of the pelvic girdle?
 - a. Femoroacetabular (hip) joint
 - b. The pubic symphysis
 - c. Bilateral sacroiliac (SI) joints
 - d. Lumbosacral joint
2. Which ligament of the spine resists extension?
 - a. Posterior longitudinal ligament
 - b. Ligamentum flavum and facet joint capsule
 - c. Anterior longitudinal ligament
 - d. Interspinous and supraspinous ligaments
3. The diagnosis of aseptic noninflammatory olecranon bursitis is:
 - a. Based on plain radiographs, demonstrating an olecranon spur in all cases
 - b. Requires aspiration of bursal fluid in all cases
 - c. Usually straightforward and based on characteristic appearance on physical examination
 - d. Made only with MRI
4. The parasympathetic (craniosacral) division of the autonomic nervous system (ANS) involves presynaptic parasympathetic neuron cell bodies located within two sites of the central nervous system (CNS). Which one of the following is not part of the cranial parasympathetic outflow?
 - a. Ciliary ganglion
 - b. Celiac ganglion
 - c. Pterygopalatine ganglion
 - d. Otic ganglion
5. What radiographic finding is typical of osteoarthritis?
 - a. Periarticular osteopenia
 - b. "Pencil-in-cup" deformity
 - c. Subchondral cysts
 - d. Soft tissue swelling
6. Battle sign in head trauma is suggestive of:
 - a. Intracranial bleed
 - b. Diffuse axonal injury
 - c. Basilar skull fracture involving the temporal bone
 - d. Basilar skull fracture involving the orbits
7. Which ligament is affected in Gamekeeper's thumb?
 - a. Tear of the ulnar collateral ligament of the thumb metacarpophalangeal (MCP)
 - b. Rupture of the flexor digitorum profundus (FDP) tendon
 - c. Rupture of the extensor tendon from the distal phalanx
 - d. Tear of the triangular fibrocartilage complex
8. Which position should be avoided after total hip arthroplasty using an anterior approach?
 - a. Bridging
 - b. Adduction crossing midline
 - c. Sitting on regular toilet seat
9. The normal gain for a sensory nerve study is:
 - a. 100 microvolts/division
 - b. 1,000 microvolts (1 millivolt)/division
 - c. 10 millivolts/division
 - d. 20 microvolts/division
10. When the EMG needle is inserted into the muscle, there is not a crisp sound and the feel of the needle is "gritty." This may be a result of all of the following except:
 - a. The needle has passed through the muscle and is touching periosteum
 - b. The needle is in an adjacent muscle
 - c. The needle is in fat
 - d. The muscle is atrophied

Answers of June 2017

1. b, 2. c, 3. c, 4. c, 5. d, 6. d, 7. c, 8. b, 9. d, 10. c

REHAB CHALLENGE

A right handed middle aged nondiabetic non-hypertensive, accountant by profession, suffered a low cervical spinal cord injury leading to quadriplegia preceded by fall 10 months ago (Fig. 1). He was admitted with the complaints of severe night spasm and lower limb pain, grade IV pressure ulcer and urinary incontinence (Fig. 2). Initial assessment showed spasticity in wrist and fingers, around hip knee and ankle, wrist dorsiflexion and finger extension power 2/5 and lower Limb power 1/5 with poor forehand grip, NLI C6 in AIS B. Oral antispastic medication was started with baclofen 30 mg per day, Urinary tract infection, detected by culture, was cured with antibiotics, pressure ulcer improved with regular dressing. However pain and spasm persisted for which medicines were topped up. In spite of taking baclofen 90 mg per day, diazepam 15 mg per day, gabapentin 1200 mg per day and tizanidine 6 mg per day, he is still suffering from severe spasm, spasticity and night pain. Please opine for the further management for this patient.



Fig. 1: Profile picture



Fig. 2: Clinical picture