Outpatient Physical Therapy Following Surgical Debridement of Osteochondritis Dissecans of the Talar Dome: A Case Report

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Background

Osteochondritis Dissecans (OCD):

- Alteration of subchondral bone with disruption of the adjacent articular cartilage[1]
- Cause unknown, hypotheses include repetitive trauma and or non-traumatic disruption of subchondral blood supply[1]
- Suspected chondral injury with up to 50% of ankle instability episodes[1]

Treatment Options:

- Goals: relieve symptoms and improve function[2]
- Non-surgical: rest, immobilization, NSAIDS[2]
- Surgical: excision of lesion, excision with cutterage and/or microfracturing, filling the defect with bone graft, antegrade transmelleolar drilling, retrograde drilling, fixation, osteochondral transplantation, and autologous chondrocyte implantation[2]

Figure 1. Radiograph with arrow pointing to a typical osteochondral lesion of the talar dome in a similar location to the patient's lesion
http://www.aafp.org/afp/2002/0901/p785.html

Purpose

To describe physical therapy treatment and outcomes for a patient following surgical debridement of OCD of the talar dome.

Case Description

- 27 year old female who lives on a farm with her husband and 4 young children
- History of frequent ankle sprains
- Early March 2014: "turned the wrong way" while bowling leading to increased right ankle pain, instability, and abnormal gait pattern
- Orthopedic surgeon diagnoses OCD of the talus
- April 2014: surgical debridement of OCD lesion
- Early May 2014: referred to physical therapy for post surgical care, evaluation, and treatment

Examination

	Initial	Visit 19
Lower Extremity Functional Scale score	13/80	27/80
Right ankle active range of motion		
Dorisflexion	-15º	-7º
Plantarflexion	46º	45º
Inversion	18º	10º
Eversion	6º	18º
Right ankle circumferential measurements		
Figure 8	52 cm	51.5 cm
Malleoli	27 cm	26.75 cm
Forefoot	23 cm	22 cm
Metatarsal heads	23.5 cm	23 cm
Right ankle strength (MMT)		
Dorsiflexion	3-/5	5/5
Plantarflexion	3-/5	5/5
Inversion	Not Tested	3+/5
Eversion	Not Tested	4+/5

Prognosis

Clinical outcome of "good and excellent" in 79% of patients treated with surgical correction of OCD[3]

Interventions

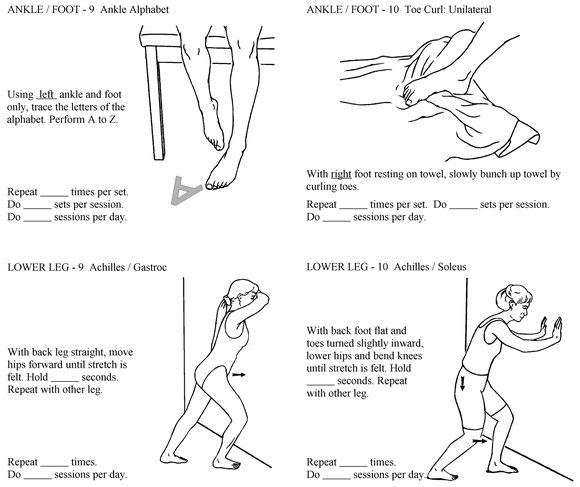

Figure 2. Diagram of home exercises: 2 sessions of all exercises per day; Ankle alphabets 2 x per session; Toe curl 20 x per set, 2 sets per session; Both calf stretches held for 3 x 30 s.

- Exercises: Gait training, weight shifting, BAPS board, eccentric calf lowering, balance practice, LE strengthening and stretching
- Manual: Joint mobilizations and soft tissue mobilization
- Modalities: ice, vasopneumatic compression
- Tape techniques: as pictured below

Figure 3a. Photo of Rock tape interwoven fans to reduce swelling

Figure 3b. Low-Dye taping for arch support http://www.running-physio.com/cphp2/

Outcomes

- Minimal reduction in ankle swelling
- Small but statistically significant improvement in LEFS score
- Increased inflammation starting at visit 6
- Patient referred to orthopedic specialist for imaging of suspected tibialis posterior rupture

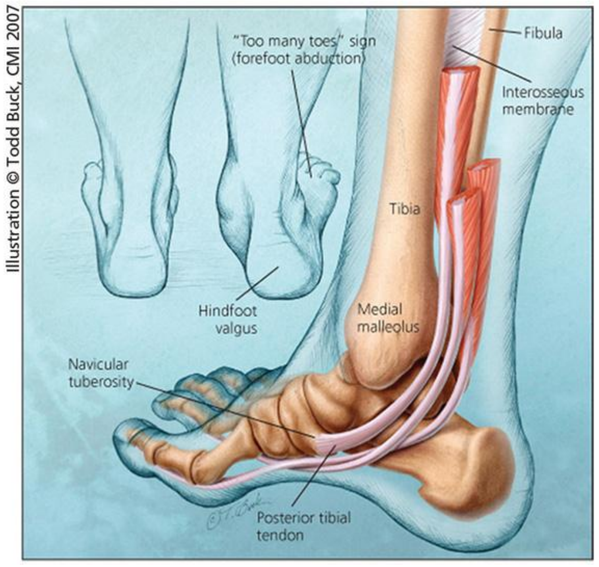

Figure 4. Diagram showing the location of the tibialis posterior, suspected to be ruptured, and the commonly seen change in foot and ankle position with dysfunction of that muscle. http://www.hss.edu/conditions_posterior-tibial-tendon-insufficiency-overview.asp

Discussion

The patient's suspected tibialis posterior injury is likely the reason for her lack of progress in PT and her continued state of inflammation. Inability to weight bear with a normal foot position remained a limiting factor during exercises. PT was placed on hold and will likely resume once the secondary injury is addressed by an orthopedist.

References

1. Talusan PG, Milewski MD, Toy JO, Wall EJ. Osteochondritis dissecans of the talus: diagnosis and treatment in athletes. *Clin Sports Med.* 2014;33(2):267-84.
2. Badekas T, Takvorian M, Souras N. Treatment principles for osteochondral lesions in foot and ankle. *Int Orthop.* 2013;37(9):1697-706.
3. Zwingmann J, Südkamp NP, Schmal H, Niemeyer P. Surgical treatment of osteochondritis dissecans of the talus: a systematic review. *Arch Orthop Trauma Surg.* 2012;132(9):1241-50.