

Abstract

Background: This level 4 CASE report is a 21-year-old male soccer player (83.6 kg, 193 cm) who injured his right ankle. Athlete reported that while playing his foot landed in inversion, and an opposing player then landed on top of the inverted ankle. Became swollen and hot to the touch, with bruising and point tenderness under medial and lateral malleoli. Not possible to take ROM because of pain and non-weight-bearing status. Describes pain as sharp with quick movements and hard impacts and a deep aching the rest of the time. Treated conservatively as a high lateral ankle sprain and returned to play, but deep internal pain and feelings of “catching” of the joint persisted and increased until an MRI was received. Diagnosed with OCD Lesion. Athlete had right ankle Arthroscopic Debridement of OCD Lesion of the Medial Talar Dome. Full rehab and RTP with athlete full-go, but the same deep pain returned with sport participation and he received a second MRI. Athlete had second surgery, Right Ankle Arthrotomy and Exostectomy of right Tibia were completed and rehab began again. Player had no previous ankle injuries. **Differential Diagnosis:** Medial ankle sprain, Talus fx, OCD Lesion of the Talus **Treatment:** Initial treatment after second surgery consisted of RICE with electrical stimulation for pain and swelling. AROM was initiated as pain tolerated. Progression to more advanced resisted band exercises, foam pad balance exercises, and moving objects (towels, pieces of foam) with his toes. Cardiovascular endurance kept through time in the pool and biking when bearable. Beginning RTP with gentle jogging first and progressing to running and ball skill work as able. Continuing to increase ROM and decrease pain and swelling after each practice; stretches with a band, massaging the area, E-Stim and ice on the affected area. Rest when possible and taped up during beginning return to exercise/play. **Uniqueness:** This case is unique due to the success of the first surgery and return to play and the development of the secondary diagnosis. Deep, chronic, achy pain is common, along with a ‘catching’ or ‘locking’ sensation with movement. After intense episodes of activity’ swelling is also common, but when paired with another injury like an ankle sprain it can be difficult to differentiate the two. Diagnostic imagery like an X-ray or MRI is necessary for accurate diagnosis. When a patient can be immobilized and allowed to heal for an extended period, surgery may not be necessary. Even after the invasive surgery an athlete might then develop arthritis in the joint and have difficulty and pain in movement and mobility. **Conclusions:** This case demonstrates the diagnosis and treatment of a collegiate soccer athlete suffering from an OCD Lesion of the Medial Talar Dome and his successful return to play. It also demonstrates the success of a second surgical procedure and rehab after the athlete has reoccurring symptoms. The athlete is currently engaged with the athletic training staff to minimize the effects of the second surgery and return the athlete to full participation.

Purpose

The purpose of this case report was to introduce a 21-year-old Division 1 Collegiate soccer athlete who received an osteochondral defect (OCD) of the Talar Dome in his right ankle. He received two procedures in order to eliminate pain and improve ROM. An overview of this injury is presented in order to obtain an improved understanding of the ankle injury OCD Lesion of the Talar Dome, from its onset to the athlete’s full return to play as a D1 Soccer player.

Anatomy

Understanding the anatomy of the ankle joint and the way it moves is essential in understanding this injury and its rehabilitation. The distal tibia sits on the talus, one of the bones of the ankle. The top of the talus is dome-shaped and is completely covered with cartilage, which is a tough, flexible tissue that enables the ankle to move smoothly and reduce friction. A talar dome lesion is an injury to the cartilage and underlying bone of the talus within the ankle joint. These lesions are usually caused by an injury, such as an ankle sprain. If the cartilage does not heal properly following the injury, it softens and begins to break off and sometimes a broken piece of the damaged cartilage and bone will float in the ankle causing constant discomfort and pain with activity.

Case Report

Patient: This Division 1 collegiate soccer player is a 21-year-old athlete (83.6 kg, 193 cm) whose right foot landed in inversion and an opponent stepped on it during a game. The following is information that can explain the steps taken from original mechanism of injury to complete return to play for this athlete’s unique injury.

Mechanism of Injury: Lateral ankle sprains (LASs) are the most common injury in sports and frequently result in functional impairment, activity limitation, and participation (Fraser, 2018). These injuries most commonly occur due to the combination of inversion and plantar flexion of the foot, which is what happened to this athlete. Along with landing this way, another athlete on the opposing team also stepped on the inverted foot, causing more stress on the lateral ligaments. This was also when the talar cartilage was damaged and so even when the acute symptoms of an ankle sprain subsided he was still left with constant discomfort and lack of full ROM. He received two surgeries to rectify the damage and went through two return to play protocols, the second of which was successful. **Clinical Examination(s):** The initial diagnosis of the athlete was of a severe ankle sprain and was treated as such. He had a large amount of swelling and bruising both from the extreme motion as well as the impact of the opposing player that pooled around both malleoli and the top of his foot. Point tenderness on the medial and lateral foot along the malleoli as well as the cleat marks from his opponent. No other major deformity or lacerations at the joint were seen. He did not report feeling a “pop” or “crack” during the play. AROM and PROM of the joint are decreased due to pain.

It was found that after he completed an ankle sprain rehabilitation process and the right ankle no longer had observable swelling or bruising, the athlete still had “deep pain” and “catching” during activity that steadily increased. An MRI showed an OCD Lesion of the Talar Dome and the athlete received Arthroscopic Debridement surgery to rectify the damaged cartilage, beginning another rehab shortly afterward. Along with physical therapy the athlete also worked in the athletic training room and began with acute rehab to decrease swelling and pain and improve ROM. Progression to strengthening, proprioception, and sport specific drills over time had him at full-go RTP and he began playing again only to start having the same severe pain deep inside the ankle joint.

MRI number two revealed that the damaged cartilage had over time caused some bone spur growth which had not been removed in the first surgery and was causing irritation, so another surgery, Ankle Arthrotomy and Exostectomy, followed. Post-surgery rehab was extremely similar to the first with acute care transitioning to ROM, strength, and ankle awareness to be sure it could handle the stress of running, cutting, and kicking the ball long distances. The challenge that came with the second rehab was the amount of scar tissue and damaged nerves that had accumulated over time that prevented full ROM and ability to feel sensation in certain parts of his anterior and lateral foot even after a full ‘recovery’ and RTP. Continued care and maintenance will be necessary with long-term soccer participation but the athlete is extremely dedicated to preventative and recovery rehabilitation and should be able to play for a long time.

Radiographic Findings: The athlete received two MRIs during his injury and rehabilitation process. The first revealed an OCD Lesion of the medial Talar dome, an injury that affected the cartilage between his Talus and Tibia and caused him pain and a ‘catching’ at the joint. The second MRI revealed some arthritis that had caused a small bone spur to develop in the same talocrural joint that required further surgery to fix.



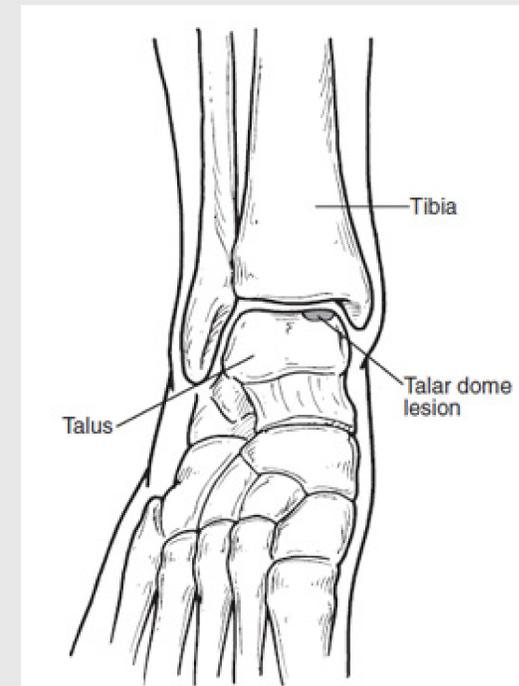
Rehabilitation and Results

The rehab from the Ankle Arthrotomy and Exostectomy of the right tibia was similar to the athlete’s first surgery rehab and is what will be covered here. Immediately following the surgery the athlete was prescribed rest and pain control with the added support of a wrap and soft brace/cast to protect the fresh incisions. He was keeping the surgery sites clean, taking pain medicine, and both elevating and using cooling techniques (ice, cool towels) for relief. After the incisions had set more securely, very light flush massages were used to bring out more of the fluid and swelling, and after it had sufficiently cleared out the athlete was asked to begin with gentle AROM and use of modalities like the GameReady and E-Stim to help add compression and aid in muscle reeducation/movement. (During this time the athlete progressed to less strong pain medicine and simple NSAIDs.) A beginning AROM exercise was on a circular slant board; it required him to create pressure on one side of his foot and ankle at a time, and moved the board in its entirety to touch the floor. With comfortable AROM then came resisted AROM first lightly with the practitioner’s hand for ankle flexion, extension, Plantarflexion, dorsiflexion, inversion, and eversion, then progression to a light, medium, and hard resistance bands with increased strength. To work on his smaller, atrophied foot and ankle musculature he was put through exercises like picking up and moving small objects or a weighted towel with his toes, and balancing exercises that progresses from flat ground to a foam pad and then on a small circular pad with his eyes closed.

Throughout this process the athlete continued to work on pain control and increasing his mobility at the talocrural joint. He received deep tissue massages and scraping treatments to help break down the scar tissue, and began trying distraction techniques in the joint that allowed him to have better motion. Using resistance bands around the front of his ankle and keeping his foot planted he would lunge forward and pause, partially opening up the joint, and having one of the ATs in the clinic finish by pulling his foot straight outward with both short jerks and longer holds to further open the space between the talus and the tibia.

His cardio during this period began when his ankle moved out of its acute injury phase and entered strengthening. He would go to the pool and do some easy leg swings, side shuffles, and water jogging when pain allowed but no hard kicking. Biking was also utilized but only lightly because his ROM was so limited at the start, but as time went on he became able to last longer and add in some intervals. His swimming workouts became more inclusive of squats and lunges and included doing laps both hard and easy to build up his endurance. When enough time had passed and he was secure in his ability to do some short drills on the field, we began with front and back, side-to-side shuffles, kicking the ball through/around cones, and small bursts of speed. Next came cutting and diagonal movement, some shooting drills and a small amount of jogging when able. As his musculature evened out between his legs and he was pain free, he could then move away from the pool and bike to focus on all running and non-contact practice as-tolerated, with the end being full-go in practice.

His result was a complete return to play with little or no pain and full strength. Due to scar tissue he is still lacking in full ROM in his right ankle but is consistent in coming to the clinic to have work done to improve it: massage, scraping, PROM and distraction treatments, and other preventative pain and strength work added as needed.



Discussion and Summary

OCD Lesions in the talocrural joint are something that can be overlooked or misdiagnosed because they often begin as an ankle sprain or other acute, superficial injury. They require electronic imaging to diagnose, and can require surgery for athletes who can’t participate in their sport with the constant pain and limited ROM. The recovery time can be lengthy depending on the severity and location of the OCD lesion, as well as the consistency of rehabilitation and care put in by both the athlete and medical personnel. Surgery and treatment are specific to the individual and their sport, but a full return to play is possible in most cases.

This rehab and process was done in the case of this D1 collegiate soccer player. His case was unique with the injury he suffered, the OCD lesion of the medial talar dome, as well as how his body reacted after the first surgery and rehab to have a bone spur develop and require a second surgery and rehab and return to play process in his last year of collegiate soccer. This was a great example of how consistent, steady progress with strength, ROM, balance, and low-impact cardio could help build a strong base to progress to sport specific running, drills and practice.

References

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