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LisFranc Injury in Collegiate Football Player

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Background: Patient is a 22 year old male football player. His foot injury originally occurred during a game when the patient twisted and felt a 'pop'. His chief complaint was pain on the dorsal distal aspect of his foot, directly dorsal to the first tarsometatarsal joint. The patient complained of pain primarily when running and cutting, and presented with mild swelling around the first tarsometatarsal joint. The patient was diagnosed with a foot sprain and was immobilized in a walking boot for all activity except practice. An x-ray was performed and was negative for a fracture, confirming a foot sprain. Athlete was able to practice as tolerated while under a strict rehab regimen. After re-injuring his foot in competition a week after the original injury, he complained of increased pain on both plantar and dorsal aspects. The patient then received an MRI, which diagnosed a LisFranc ligament sprain. The grade of the sprain was unknown due to an unclear image.

Differential Diagnosis: Turf toe, mid foot sprain, LisFranc sprain, LisFranc fracture.

Treatment: Upon initial evaluation, patient was allowed to return to play with a specialized arch taping. The athlete was immobilized in a walking boot to reduce pain. X-ray results showed that the osseous structures appeared intact and no fractures were evident. The team physician referred the patient for an MRI to confirm a possible LisFranc injury. MRI results were negative for any secondary signs of a LisFranc ligament rupture. However, the MRI did not show a clear image of the LisFranc ligament. Patient was instructed to continue wearing the walking boot and use crutches as needed, follow RICE protocol, and take acetaminophen as needed to reduce pain. The final diagnosis after receiving an MRI was a LisFranc sprain with no grade given. Patient continued to be immobilized in a walking boot, and was withheld from practice, with the exception of foot-work skills. Patient then followed up with the team physician to receive cortisone injections in his foot in hopes to reduce pain and return to play. Four weeks after the re-injury, the patient finally received Cortisone injection. The following day, he returned to practice with substantial pain relief, and was supported with an arch taping and steel shank. Patient was cleared for competition 5 days post-cortisone injection.

Uniqueness: Although LisFranc injuries are not uncommon in patients, it unique that his MRI did not show a LisFranc ligament. However, because of the absence of the ligament in the MRI, the grade of his sprain may have been misdiagnosed. Cortisone injections are not typically used to treat LisFranc injuries, but because of the success with pain reduction, this may now be used as a new protocol.

Conclusion: Patient may have been misdiagnosed, causing the initial injury to worsen. Diagnostic imaging did now show a clear image of the LisFranc ligament, causing a difficulty in diagnosing the degree of sprain. Once patient was immobilized and given a Cortisone shot, he was able to return play, with a specialized arch taping and turf toe taping for added support.

Clinical Application: These findings can be used because often times diagnostic imaging is the gold standard in diagnosing musculoskeletal injuries. However, in this case, it was not helpful besides ruling out fracture. The patient was still in pain until he received a Cortisone injection, which allowed him to return to play. Healthcare providers

cannot rely on one form of diagnosis. The athletic training staff needs to use a multidisciplinary approach to diagnosing and treating injuries. Also, Cortisone shots are not typically used to treat a LisFranc injury, but can now be considered a solution based on the clinical application aspect of EBP.

Key words: LisFranc injury, Cortisone, multidisciplinary protocol