NON-CONTACT FEMORAL FRACTURE IN A HEALTHY HIGH SCHOOL FOOTBALL PLAYER: A CASE STUDY
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Background: A 17-year-old male football player sustained a femoral fracture after performing a running drill several days prior to pre-season football camp. Prior to the injury the athlete was being treated for what was believed to be a mild quadriceps strain with the GameReady, interferential electrical stimulation for pain management, and strengthening exercises. At the time of injury, the athlete felt immediate pain after planting his leg and applying a torsional force during the running drill. The athletic trainer on site observed a significant amount of edema in the anterior thigh and proceeded to take a dorsal pedal pulse, which was present and within normal limits. The athlete’s blood pressure was elevated. After assessment, the athletic training staff splinted the athlete, the EAP was activated, and EMS was called. **Differential Diagnosis:** Quadriceps strain, hip flexor strain, non-contact femoral fracture, slipped capital femoral epiphysis. **Treatment:** Upon arrival to the ED, the athlete was sent for X-rays to confirm the diagnosis. In addition, an MRI and a bone scan were ordered. All imagining was negative for tumors and calcium levels were normal. Based on test results and physical examination, surgery was deemed the appropriate treatment for this fracture. Prior to surgery, the athlete was treated for edema using cryotherapy techniques while his leg remained immobilized. The surgery consisted of placing a metal rod in the femur. The athlete was non-weight bearing with crutches for the first 4 weeks, then was able to partially-weight bear with crutches. Immediate rehabilitation after surgery consisted of RICE and passive stretching, which progressed to AROM and strengthening for the quadriceps and surrounding muscle groups after pain had diminished and athlete returned to weight-bearing. The athlete’s rehabilitation did not incorporate sport specific drills because he was not planning to return to the team for his last season. **Uniqueness:** The femur is the strongest bone in the body. The force that is needed to create trauma to the femur is typically described as a force from a car accident, making non-contact femoral fractures rare in the healthy, athletic population. Therefore, it is possible that this non-contact femoral fracture resulted from an undiagnosed cause such as a previously sustained stress fracture. Other possible causes of non-contact femoral fractures are typically associated with underlying conditions such as calcium deficiencies or tumors in the bone. In this case, the only known past medical history the athlete had was non-specific knee pain and decreased ROM and strength in the quadriceps, which was thought to be associated with a quadriceps strain. **Conclusions:** The cause of this specific injury is still unknown because all tests came back negative and the only symptom the athlete complained of was knee pain prior to injury. It is plausible that the athlete had already developed a stress fracture allowing the torsional force that was applied while planting to result in a spiral fracture of the femur. Overall, the main key in a clinical evaluation should be to conduct a thorough evaluation and address all possible injuries associated with the signs and symptoms presented. **Word Count:** 504