Collegiate Men’s Lacrosse Player With An Adductor Avulsion Fracture
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Background: An 18-year-old male lacrosse player suffered an avulsion fracture on the right pubic symphysis and inferior pubic ramus over the insertion of the adductor muscles. Mechanism of injury: Athlete planted foot and turned while running causing pain and a popping sensation in his groin. Initial assessment revealed point tenderness over adductors and its insertion over right pubic symphysis. Upon initial assessment no edema, ecchymosis or paresthesia was found. Neurological assessments were normal. Hip active and passive ROM was full, pain noted with last few degrees of hip abduction. Strength was full for all knee motions and hip motions except for hip external rotation and adduction, which were 4+/5. Special Tests: MMT was positive for pain with resisted hip adduction. Initial Treatment/Advice: Ice bag application for 20 minutes and rehabilitation was advised. Differential Diagnosis: Adductor Strain, Gracilis Strain, Adductor Avulsion Fracture, Stress Fracture, and Sports Hernia. Treatment: Athlete did not follow up for rehabilitation until eleven days after the initial evaluation. At that point he was unable to fully participate in practice due to weakness with adduction and hip internal and external rotation. At this point athlete complained of point tenderness at the insertion of the adductor longus into the symphysis pubis. ROM was full and strength was 4/5 with hip adduction and internal and external rotation, all other motions were 4+/5. Treatment consisted of cryotherapy to manage the pain and strengthening exercises. X-rays were taken twenty days post injury to rule out avulsion fracture. Impression of x-ray report showed no bony abnormalities and unremarkable adjacent soft tissues. Follow up with team physician concluded that athlete had an adductor strain/apophysitis, he was advised to continue rehabilitation and to participate as tolerated. If the athlete did not improve or pain increased he would need a period of rest. Athlete continued participation and his strengthening exercises in our rehabilitation clinic until his season ended. Athlete’s progressive rehabilitation consisted of ice (20 minutes), SLR hip flex, ext, add and abd (no weight up to 2lbs), ball squeezes (2-3 second hold), manual resistance (IR/ER 3x10), seated hip flex (3x10), Monopolar E-Stim (20 minutes) and SwimEx warm-ups. Athlete went home for the summer and pain continued. He followed up with his own physician who ordered an MRI which confirmed diffuse marrow edema as a result of stress response. Localized swelling was apparent on MRI where adductors insert at the right pubic bone suggesting a strain or partial avulsion. Detailed examination of MRI and original x-rays along with signs and symptoms confirmed partial avulsion of the adductors. Athlete continued rehabilitation at a physical therapy facility for the summer and returned once school started. Athlete is currently receiving prolotherapy by our team physicians and is unable to continue his rehabilitation regimen at this time. Uniqueness: An adductor avulsion fracture is commonly misdiagnosed as an adductor strain. If mistreated it can lead to chronically persistent injuries that can end up being career threatening. Signs of this injury include limping, pain with passive and active muscle stretching, tenderness to palpation of adductor muscles and insertion point over pubic symphysis. Conclusion: An adductor avulsion fracture is a musculoskeletal injury occurring typically in adolescents as a result of an unexpected explosive muscle contraction and is characterized by a sudden onset of hip pain. Detailed history of the injury and x-rays are helpful in accurate and early diagnosis of ischial injuries. Rehabilitation approach should be structured and monitored to prevent further injury and timely return to activity. Word Count: 598