Femoroacetabular Impingement and Levoscoliosis in a College Soccer Athlete

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Abstract

Background: Athlete is a 22-year-old male NCAA soccer player. Athlete is a prior medical history with no relevant injuries before his injury. This athlete sustained an injury during the last two months. For this research paper, my case is on a Division NCAA soccer player who received a FAI and levoscoliosis during practice. This patient was referred to the athletic training student, working with men’s soccer has been quite an experience especially with the variety of injuries that has happened over the last two months. For this research paper, my case is on a Florida Gulf Coast University, Department of Rehabilitation Sciences, Fort Myers, FL, USA Division NCAA soccer athlete who received a femoroacetabular impingement and levoscoliosis.

Case Report

Patient: This Division NCAA soccer player is a 22-year-old athlete that received a FAI and levoscoliosis during practice. This patient presented with FAI first before his levoscoliosis. The following information will explain the affliction of femoroacetabular impingement surgery and physeal growth arrest. The following radiographic findings, diagnosis, treatments and return to play can be provided to the athlete’s unique injury. Mechanism of Injury: Any athlete who participates in a sport that requires forceful body rotation can develop FAI. Only that person is among the 10 signs and symptoms. Athlete underwent physiologist evaluation with an X-ray. The results came back and it revealed lumbar levoscoliosis. Athlete was further treated with therapeutic exercises. With the exercises provided for the athlete the pain to his back lowered but complained of deep hip pain. Due to his history, he does not have FAI on his right hip. Rehabilitation exercises were reinforced to help with his pain and to increase functional ability. Uniqueness: FAI is very common in young athletes resulting in the athlete having symptoms classified into three different types of lesions. The different types that FAI can present are Cam or pincer lesion or the combination of both. Anomalies is a type of sclerosis located in the lumbar spine where the curvature is presented on their left side in a sagittal view, but as you move to the posterior view, the lumbar spine is considered vertical with no curvature. As for these two lesions and the symptoms to one another, there could be the cause of the other. Literature has stated that adolescent athletes with FAI may be susceptible to injuries, such as spondylolysis. The athletic training staff found him having FAI first before his levoscoliosis. Surgical intervention is appropriate when FAI is present. This athlete has yet to do surgery but will prepare after season is over. There is a controversy with pursuing open versus arthroscopic intervention. Research has explored their preference on what is a better surgical option when it comes to FAI. Specifically, research has suggested that arthroscopic intervention is a better surgical option for FAI. It demonstrated a better outcome and a lower rate of complications compared to open dissection. Further research has indicated newer methods of surgical intervention and treatment. These techniques can benefit with advanced imaging. In conclusion: This case further highlights the diagnosis treatment and surgical interventions and future surgical treatment for FAI. This case further highlights the complexities of treating athletes related to hip and lumbar pain.

Introduction

There are sports all around us. There are high schools, youth, collegiate and professional settings. No matter what type of setting you are in, you can be experiencing the same type of injury. As an athletic training student, working with men’s soccer has been quite an experience especially with the variety of injuries that has happened over the last two months. For this research paper, my case is on a twenty-two-year-old mid-fielder from France who transferred to Florida Gulf Coast University with dreams of playing professional soccer. After one year, he is a femoroacetabular impingement (FAI) on his right hip and has lumbar levoscoliosis where the curve is shifted to his left side. The converse development of the lumbar spine is horizontally deviated to his right side. What kind of treatments is he doing now? And what surgical interventions will he need for his FAI in the future?

Purpose

The purpose of this case report was to introduce a 22-year-old male Division I NCAA soccer player who received a femoroacetabular impingement and levoscoliosis. Even though he experience both of these injuries, he vetoed surgical procedures to avoid an even greater injury. Thephyseal growth arrest of the femur was presented to obtain additional information and a better understanding regarding FAI and levoscoliosis, from onset to return to play of a Division NCAA soccer player.

Anatomy

Understanding the anatomy in relation to femoroacetabular impingement of the hip and levoscoliosis of the lumbar spine is essential to understanding the injury and radiographic findings. The hip serves as the base of support when it comes to the lower extremity and trunk movement is a stable joint and requires little to no movement. The hips are the basis of where all power and force come from and is intertwined with the lumbar spine, known as the lumbopelvic complex. As any other structure in the human body, the hip has its fair share of injuries when it comes to muscular, ligamentous, and bone injuries. The lumbar spine is in constant stress when it comes to the axial load that we present whether it be sitting, standing, laying down. Being in those positions for a repetitive or long period of time can cause damage. One thing to always take into consideration when evaluating a hip and or lower back injury is that you want to assess both of them together due to their correlation with one another. With hip anatomy abnormalities or abnormal hip motion, it has been studied and stated that it can cause “lumbopelvic rhythm that predisposes patients to unnatural patterns of movement, landing and running. It is known to cause pain and some tight erector spinae on his left side. With the athlete already presenting with FAI, the choice of surgical procedure was given to the athlete. The athlete required a surgical intervention for non-surgical rehabilitation, and began treatment immediately.

Discussion and Summary

FAI is very common in young athletes resulting in the altered mechanics of the femoral head and acetabulum. These athletes are classified into three different types of lesions. The different types that FAI can present are Cam or pincer lesion or the combination of both. Levoscoliosis is a type of sclerosis located in the lumbar spine where the curvature is presented on their left side in a sagittal view, but as you move to the posterior view, the lumbar spine is considered vertical with no curvature. These injuries can occur in all sports that produce collision and high velocity forces. The severity and mechanism is important to consider when individualized treatment plans and injury prevention were established. The mechanism of injury may be created in a different manner, but similarly consists of repetitive compressive, physical examinations that include the proper palpation, anxiety, sex, and clinical findings are imperative in a correct diagnosis. Once a diagnosis is hypothesized, radiographic findings maybe necessary for some diagnoses and treatment plan. Conservative treatment is followed and created with a rehabilitation protocol from the sports medicine staff.

This twenty-two-year-old senior mid-fielder has had some significant injuries in the past that contributed to his cam lesion FAI and lumbar levoscoliosis. His FAI symptoms are consistent with typical FAI symptoms. He also displays true characteristics of levoscoliosis. This athlete has FAI and levoscoliosis in his lumbar region. The FAI is an incompetence of the femoral head and acetabulum. There is some type of abnormality causing the head to impinge the acetabulum. This athlete has only FAI and levoscoliosis in his lumbar area. There are no other injuries. The athlete is described as having marked FAI and levoscoliosis.

Rehabilitation and Results

Following the decision of vetoing surgical repair of femoroacetabular impingement, conservative treatment is usually recommended for athletes with femoroacetabular injuries. With this patient, the sports medicine staff devised a rehabilitation protocol in which the athlete was to follow for the remaining of the season to establish he also levoscoliosis. This protocol was designed with four phases with particular criteria’s for the athlete to progress to the next phase. Phase I criteria consisted of diminishing pain and inflammation, restoring range of motion, maintaining muscle strength and flexibility of involved and uninvolved muscles. In order to reduce inflammation, besides the use of modalities and treatment, the team physician prescribed anti-inflammatory for the athlete until inflammation decreased. In order for the athlete to progress to phase II, minimal pain, range of motion limitations, and normal gait must be maintained. Phase II goals were to restore pain-free range of motion, progress to stabilizing and strengthening exercises with normal gait, and progressively increase muscle strength and endurance. Criteria to progress to phase III was minimal pain during phase II, full pain free range of motion, and normalized full weight bearing gait and minimal pain during biking and progressing to jogging. The athlete was able to complete both phases within 14 days in order to progress to phase III with no setbacks. Phase III goals consisted of restoring the muscular and cardiovascular endurance, and optimized neuromuscular control. Before phase VI was progressed, minimal pain and normalized running gait at sub max speeds was reached. Once phase VI was reached, the athlete experienced a setback during a scrimmage. He was forced to return to phase III in which he returned to full participation following the final completion of phase VI. To which then the athlete completed maintenance work to keep the athlete functional and progress the strengthening of the lumbopelvic complex.