

Abstract

In this case report, the athlete reported to the athletic training room complaining of low back pain and stiffness in the lumbosacral region with no specific mechanism of injury. The patient was seen by a physician for imaging which ruled out fracture but did find sacroiliac joint inflammation (sacroiliitis) and lumbar disc pathology. The athlete was admitted to a physical therapy spine specialist group for conservative treatment and rehabilitation in addition to treatments in the athletic training facility.

Introduction

Research has shown that nearly 70% of people will suffer from low back pain at some point in their lives, and although it is often perceived as an idiopathic condition, there is usually an underlying structural or functional cause behind chronic low back pain. It has also been found to be more common in females than males and the third most commonly injured body part among women's basketball athletes. About 15% of low back pain cases are thought to stem from the sacroiliac (SI) joints. Chronic low back pain can be a debilitating condition, and the underlying cause(s) must be addressed for optimal management and return to play.

Purpose

This case demonstrates the complexities of low back pain, especially in athletes, and the need for comprehensive clinical examination of each individual case. The pre-participation physical examination should be used to screen for LBP risk factors such as significant leg length discrepancy, personal and family history, orthopedic issues of the lumbo-pelvic-hip complex, and muscular issues to identify possible at-risk athletes for low back pain. Determination of the underlying cause(s) can be a difficult process and there are often multiple contributing factors. The case also demonstrates the need for athletic trainers to be able to coordinate with physicians, chiropractors, specialists and physical therapists in order to provide the best possible care.

Background

- ▶ 21 year old female athlete
- ▶ NCAA Division 1 basketball player
- ▶ No previous history of injury
- ▶ Family history of low back pain/disc pathology

Differential Diagnosis

- ▶ Low back strain
- ▶ Spondylosis, Spondylolysis
- ▶ Lumbar disc pathology
- ▶ SI Joint pathology
- ▶ Stress fracture

Clinical Presentation

The athlete began experiencing low back pain that, while manageable initially, progressed the point of being unable to practice and perform the tasks required during a basketball practice such as running, jumping, cutting, squatting and lifting, due to pain and disability. The athlete described low back stiffness especially in the morning and pain after bouts of activity and at the end of the day. The athlete was limited in lumbar flexion and extension, hip flexion and extension due to pain. The athlete was referred to the physician for imaging, which indicated a disc pathology and sacroiliitis mainly on the right side; X-Ray negative for fracture. The athlete was then referred to a physical therapy group specializing in the spine, and was also found to have a leg length discrepancy of approximately 5 cm.

Treatment

The athlete was rested from activity but experienced little relief. The athlete began conservative treatment guided by the physician, physical therapist and athletic trainer. This included ice, NSAID's, a heel lift and SI belt, manual therapy and light lower extremity stretching. The athlete progressed to basic lumbar ROM exercises and eventually light strengthening, but continued to experience some pain.

Daily treatments included heating the lower back with a hot pack for 10 minutes and then bilateral light static lower extremity stretching. The athlete also completed exercises such as adductor ball squeezes (3x12) in the athletic training room, plus other basic exercises and manual therapy at physical therapy. At the end of each session the athlete received IFC e-stim treatments and application of ice for 20 minutes. After lingering pain and inability to practice despite the conservative rehabilitation, the athlete received a cortisone injection in the SI joints as per physician's orders, but with little relief.

The treatment process in the athletic training facility came to a close when the athlete made the decision to stop playing basketball. The patient still attended physical therapy for treatment.

Uniqueness

General low back pain is relatively common among college athletes, but most cases are less severe and are able to be managed effectively with modality treatments, stretching and rehabilitation exercises including core stability exercises. Many cases of non-traumatic low back pain in athletes are muscular in nature rather than joint and disc-related. It is less common for low back pain in collegiate athletes to be derived from leg length discrepancy, sacroiliitis/SI joint dysfunction, and disc pathology. The hereditary nature of the athlete's condition also adds uniqueness to the case.

Conclusion

While low back pain is relatively common in athletes and the general population, non-traumatic disc pathology, leg length discrepancy and sacroiliitis are a few of the less common causes. This case demonstrates how complicated cases of low back pain can be, and the need for individualized intervention based on each case, plus better risk factor screening in pre-participation physical examinations.

Also, the biomechanics of the lower extremities, lumbo-pelvic-hip complex and spine must be evaluated and considered in each case, because no two athletes have the same gait or posture patterns. Leg length discrepancy can greatly influence biomechanics and function, and it has been found that as small as a centimeter discrepancy can increase SI joint loads by as much as five times.

Conservative treatment and management of low back pain is often successful, but can take much more time than other areas of the body due to chronic postural compensations, and the relationship of the lumbo-pelvic-hip complex to the biomechanics of the rest of the body.

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