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Symptomatic L4-L5 Disc Herniation in a Professional Hockey Player

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OBJECTIVE

Examine the diagnostic process and subsequent treatment of a disc herniation in a professional hockey player.

MEDICAL HISTORY

The patient was a 39-year old, male professional hockey player, who was a 19-season veteran. Following the first period of a hockey game the patient expressed an inability to fully push-off of his left leg, with severe, accompanying pain. As he was opening his hips to pivot during play and he felt his leg give way. Upon examination he was tender with palpation on the left posterior sacroiliac spine and the superior portion of the left gluteus maximus. The patient was returned to play and instructed to monitor when and where pain was and report any changes. He finished the game and played the game the following day even though he was experiencing pain. The next weekend the patient played in the first but not the second game due to the development of neurological symptoms in his left leg, including drop foot. He was unable to walk on his heels and had trouble with single leg squats. The patient had no prior history of a back injury.

DIFFERENTIAL DIAGNOSIS

Possible diagnoses include muscle spasm, piriformis syndrome, spinal stenosis, and decreased space in the intervertebral foramen.

RELATED LITERATURE

The head, knee, shoulder, and thigh are the most commonly injured parts of the body by a professional hockey player. It is uncommon

for a player to report a neurological injury to their low back during a hockey game. ¹ The prevalence of low back injuries, specifically lumbar disc herniations, is low in professional hockey. ² There are few articles published to educate and describe the healing and recovery process of low back injuries in professional hockey players. The rate of return to play for NHL players with lumbar disc herniations was 85%. Athletes who were treated non-surgically had a 90.3% return to play. Following surgical treatment, athletes had an 82.1% chance of returning to play. ³

DIAGNOSIS and TREATMENT

Initial diagnosis during the game was a muscle spasm resulting in ipsilateral radicular symptoms. After a week of no symptom improvements, diagnostic imaging was ordered. Initial examination of the x-ray and MRI revealed the patient had spinal stenosis of the L4-L5 nerve root space and arthritic changes in the lumbar spine with deterioration of the intervertebral discs. A slight disc herniation was also found at the L4-L5 level but was determined to not be contributing to symptoms. Following a week of rehabilitation with minimal decrease in symptoms, the patient was referred to a pain management specialist. The specialist administered two steroid injections at L4-L5 and S1 nerve roots to try and alleviate the symptoms. The patient experienced minimal improvement of his symptoms and continued to lack strength in the left leg a week following the injections. The patient was then referred to a neurosurgeon. The neurosurgeon

examined the original MRI and was concerned about the disc herniation on the L4-L5 disc. The radiology report noted arthritic changes in the patient's vertebrae on the lateral MRI view. The patient chose to correct the herniation with surgery. Following surgery, the patient refrained from activity for one week. Activity resumed with light stationary bike riding and walking on a treadmill. The patient had left gluteal muscle weakness and no eccentric control of the tibialis anterior. Strengthening exercises were added three weeks post-surgery. Due to the decreased innervation on the affected side, the patient developed soreness in the right multifidi from overcompensation due to left gluteal weakness. Seven weeks post-surgery, he was cleared for participation. The first game back he spent much of the game on the bench which reaggravated symptoms. He tried to ignore the symptoms, but eventually reported the symptoms when they became too strong. He was placed back on the injured reserve and the current goal is for a return to play by mid-April.

UNIQUENESS

The average age of a professional NHL hockey player is 25.5 ± 4.4 years of age.³ Because this injury took place in a 39-year-old player, there are physiological changes that must be accounted for that are not common in younger athletes including arthritic changes in the

bone and a decrease in the fluid in the intervertebral discs. After 19 years of professional hockey, the patient has experienced numerous stresses on their lumbar spine compared to a rookie.

CONCLUSION

Lumbar disc herniations comprise five percent of all reported professional hockey injuries. It is probable many athletes have disc herniations yet remain asymptomatic and therefore are undiagnosed. Professional hockey players should expect to make a full recovery with rehabilitation following a discectomy but may experience recurrent symptoms several years following surgery.

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