

Disappearing Intervertebral Disc Herniation

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Case report. Spontaneous regression of herniated nucleus pulposus occurs when intervertebral disc herniation loses its volume partly or totally without surgical interventions. Cases of spontaneous regression of large extruded lumbar disc are rare. We presented a patient with large lumbar disc extrusion documented by Magnetic Resonance Imaging, but not found intraoperatively four months after performing diagnostic. Postoperatively he felt well for two months when the pain reappeared. Control Magnetic Resonance of lumbar spine showed complete resolution of extruded disc fragment comparing with the initial Magnetic Resonance Imaging.

Keywords. lumbar disc extrusion, magnetic resonance imaging, disappearing disc.

INTRODUCTION

Spontaneous regression of spinal disc herniation occurs when the herniated nucleus pulposus of intervertebral disc herniation loses its volume, partly or totally, without surgical interventions. In 1945, Key was the first one to document the spontaneous regression of a herniated disc by myelography and Guinto on Magnetic Resonance Imaging [MRI] in 1983 [1, 2]. Bozzao et al. reported that 63% of their patients showed a decrease in disc protrusion. Nevertheless, cases of spontaneous regression of large extruded lumbar disc are rare [3].

We presented a patient with a large lumbar disc extrusion which was documented on the MRI scans, but has not been found at the operation four months later.

CASE REPORT

Thirty-two years old man was admitted to the Department of Neurosurgery at Cantonal Hospital Zenica, with a burning pain, numbness and tingling sensation in the left leg. The symptoms began six months earlier. There was no history of bowel or bladder dysfunction. The physical therapy and analgesics did not lead to improvement.

On physical examination, Lasegue sign was positive on the left, the sensation was reduced over the length of the left leg. Power in the left foot was reduced [results of manual muscle testing: dorsal flexion was 4- and plantar flexion was 5-]. Achilles tendon reflexes were symmetrically diminished. The lumbar spine Magnetic Resonance Imaging [MRI] performed four months earlier revealed a left posterolateral extrusion nucleus pulposus, which was migrated caudally

and compressed the left S1 root [fig1.].

Based on the neurological findings and the MRI scans we indicated operative treatment. We prepared S1 nerve root and explored the spinal canal, but except for engorged venous vessels, we did not find any extruded disc material.

Postoperatively the patient felt well for two months, after which the pain reappeared. Control Magnetic Resonance of lumbar spine showed complete resolution of extruded disc fragment, comparing with the initial Magnetic Resonance Imaging [fig2].

DISCUSSION

In 1945, Key was the first one to document the spontaneous regression of a herniated disc by myelography and Guinto on Magnetic Resonance Imaging [MRI] in 1983 [1,2]. Bozzao et al. reported that 63% of their patients showed a decrease in disc protrusion. Three hypotheses have been proposed to explain the process of disc regression [3].

The first hypothesis, "retraction of a herniated disc", proposes that the herniated disc retracts back into the intervertebral space. This can occur if there is a disc bulge or if the disc material protrudes through the anulus fibrosus, but not in cases with completely extruded or migrated fragments [3, 4]. The second hypothesis is dehydration of herniated disc. According to this hypothesis, the disc could disappear after dehydration [4].

The third hypothesis is neovascularisation and inflammation of herniated disc. Inflammation and neovascularisation are required for phagocytosis. Macrophage in-

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Competing interests

The authors declare no competing interests.

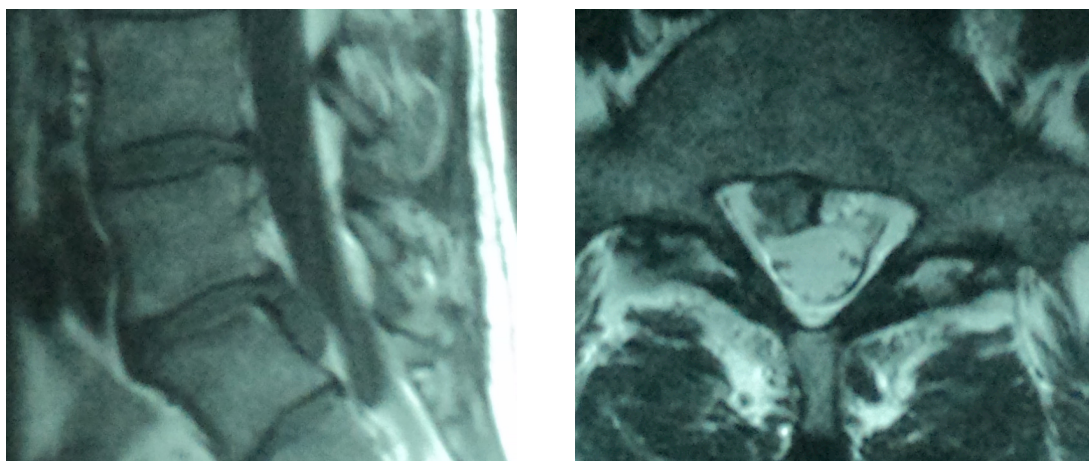


Figure 1. Magnetic Resonance Imaging [MRI] of lumbar spine, four months before operation: Large herniated disc at the level L5/S1 with caudal migration

filtrations seem to be more prominent in large herniated disc because sequesters have 2–3 times more inflammatory cells than extrusion type herniations [5, 6]. It is generally believed that spontaneous resorption of herniated disc is induced by inflammation because the immune system recognises the disc as a foreign body [7].

Several molecules have been suggested to be involved in the neovascularisation of herniations, including tumor necrosis factor- α , matrix metalloproteinase-3 and 7, plasmin, basic fibroblast growth factor, and vascular endothelial growth factor [6]. In the presented case the patient had burning pain, numbness and tingling sensation. We performed the operation, but there was no extruded disc. Several studies have reported greater percentage of spontaneous regression of herniated discs, but cases of spontaneous resorption of extruded disc are rare [3]. Some authors described similar cases of spontaneous regression of extruded herniated disc fragments [1–3,8].

CONCLUSION

The possibility of spontaneous regression of herniated intervertebral disc highlights the dilemma between conservative treatment and the operative treatment. Conservative treatment excludes the possibility of intraoperative and postoperative complications. However, the spontaneous regression of the disc takes time, and in the case of intense symptoms, the quality of life would be significantly reduced during the time of potential regression. We think that surgical treatment still should be the treatment of choice for patients with clear clinical indications.

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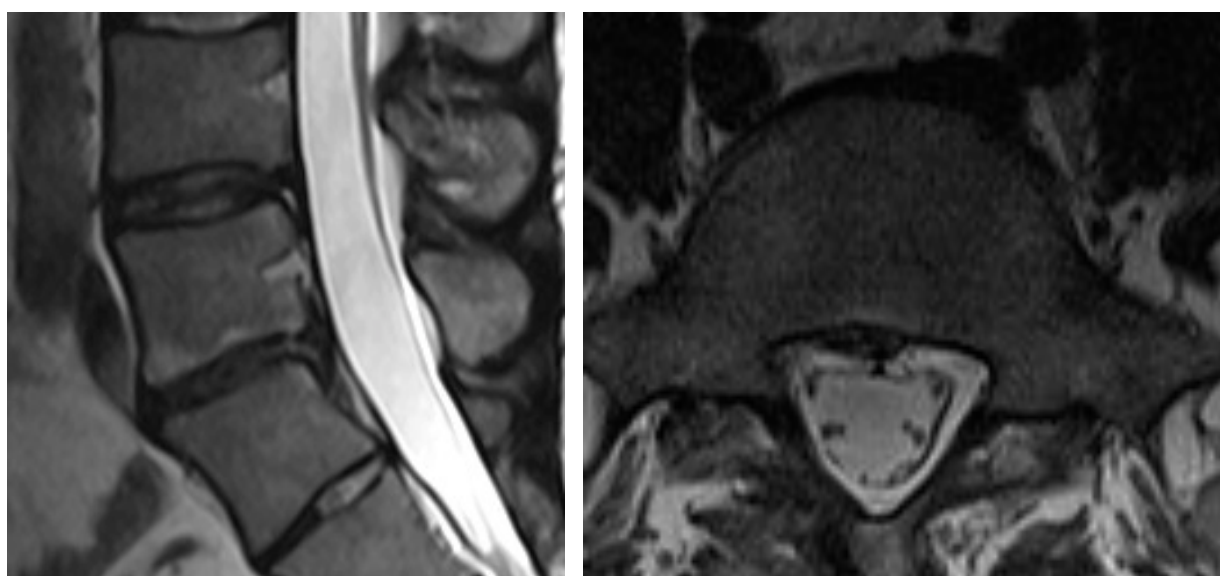


Figure 2. Magnetic Resonance Imaging [MRI] of lumbar spine, two months after operation: Complete resolution of the herniated disc Large herniated disc at the level L5/S1 with caudal migration

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