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Case Report

L2-L3 Intradural Disc Herniation Presenting with Cauda Equina: Case Report

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Abstract

Intradural disc herniation [IDH] was first described by Dandy-Walker in 1940. The ratio of intradural disc herniations to all disc herniations is 0.2% - 0.3%. It is most commonly seen in L4-L5 [90%] level. The ratio of intradural disk hernias in L2-L3 to all intradural disc herniations is 1-2%. The Male / Female ratio is 4/1. It is most commonly seen between 50-60 years of age. The incidence of cauda equina syndrome in IDH is higher than extradural disc hernias. Although MR is the gold standard, there is no definite methodfor preoperative diagnosis. In myelographic MRI, total block may be seen. It should be kept in mind in the lumbar disc herniation presented with cauda equina syndrome.

Keywords: Intradural Disc Herniation, Cauda Equina Syndrome, Spinal Anesthesia

Introduction

Intradural disc herniation [IDH] was first described by Dandy-Walker in 1940 [1]. The ratio of intradural disc herniations to all disc herniations is 0.2% - 0.3%.It is most commonly seen in L4-L5 [90% level. The ratio of intradural disk hernias in L2-L3 to all intradural disc herniations is 1-2%.The pathogenesis of lumbar intradural disc hernias is still not fully understood, but is often associated with intense adhesions between the anterior part of the dura mater and the posterior longitudinal ligament [PLL]. Recurrent minor traumas or surgical interventions may lead to adhesions [2].The incidence of cauda equina syndrome in IDH is higher than extradural disc hernias. Although clinical presentation varies, admission with cauda equina syndrome is common. Although there is no clear answer to preoperative diagnosis, MR is the gold standard [4].In this case report; a case of L2-L3 intradural disc herniation presenting with cauda equina syndrome will be presented.

Case Report

A 44-year-old male with Down syndrome was admitted with severe right leg pain, loss of strength in right ankle and urinary incontinence after he lifted heavy things. In the neurological examination, femoral stretch test was positive on the right side and dorsiflexion of right ankle was at 1/5 motor strength. L2-L3 disc herniation was detected in the patient's lumbar MRI in a different center and the patient was operated under spinal anesthesia urgently. Extruded disc herniation was not found intraoperatively. Patient referred to us, in contrast-enhanced lumbar MRI revealed extruded disc herniation at L2-L3 level [Figure 1]. The patient was re-operated under general anesthesia with the suspicion of intradural disc herniation. The L2 laminectomy was expanded and the L2-3 distance was controlled. No extruded disc fragments were found. Disc herniation was found intradurally by opening the dura vertically by microsurgical method, the extruded piece was removed totally by dissecting it from nerve tissue. In the early postoperative neurological examination, the right ankle dorsiflexion was at 3/5 motor strength and he has begun to feel his urine.

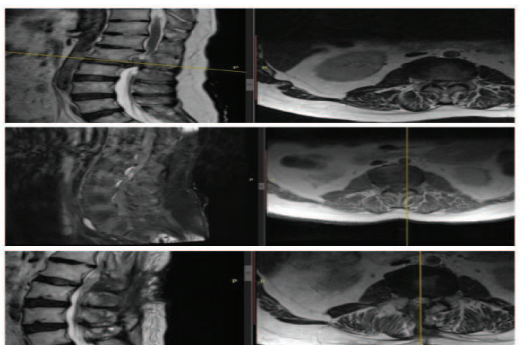

Figure 1. A. L2-3 disc herniation B. Contrast-enhanced lumbar MRI; minimal contrast enhancement C. Postoperative 3. Month MRI

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Discussion

IDH is formed by the passage of the nucleus pulpous to the intradural distance by tearing dura mater, annulus fibrosis and longitudinal ligament [2]. Although the formation mechanism is not known exactly, adhesions between the posterior longitudinal ligament and dura mater, the dura mater necrosis under pressure for a long time have been suggested. IDH is seen in the cervical region with a rate of 3%, in the thoracic region with a rate of 5% and in the lumbar region with 92%. In the lumbar IDH, L4-L5 distance is most frequently seen with 90% frequency, L2-L3 distance seen at 1%rate [2, 3]. There is no difference between the IDH and extradural disc herniation in terms of clinical presentation. There is a higher rate of presentation with Cauda Equina syndrome than extradural disc herniations in IDH [4]. Although there is no definitive method for preoperative diagnosis, the preoperative lumbar MRI is accepted as the gold standard [4]. Lumbar MR with contrast enhancement will reveal a homogenous enhancement in neurinoma or meningioma, whereas in IDH, a ring enhancement will be seen. A complete block image on myelographic lumbar MRI will assist in the diagnosis of intradural disc herniation [5]. In case of recurrent disc herniation in patients with dural tear in first surgery, the possibility of having an intradural disc should be kept in mind and MR should be examined much more carefully. IDH should be kept in mind in cases of recurrent disc herniation and in cases of cauda equina syndrome and the decision of spinal anesthesia should be reviewed.

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