

A PATIENT WITH TWO UPPER LUMBAR DISC HERNIATIONS

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Of all lumbar disc herniations, less than 5% occur in the upper lumbar area. Though protrusions are common at all levels, truly extruded disc herniations in the upper lumbar area from L1 to L3 are rare. Even more unusual is the multilevel occurrence of herniations in this area.

The authors stress the importance of accurate diagnosis and clinically directed medical imaging work-ups.

Keywords : upper lumbar area ; intervertebral disc ; disc herniations.

Mots-clés : colonne lombaire supérieure ; disques intervertébraux ; hernie discale.

CASE REPORT

A 58-year-old male white-collar worker was referred to our center for diagnosis and treatment of claudication and bilateral lumbosciatic pain. Low back pain was present for several years, and for 6 months prior to admission the patient experienced loss of power and fatigue in both legs causing him to stop and rest after walking 500 meters. Four weeks prior to admission a brisk rotatory movement caused pain in the back and in both legs.

On admission the patient noted analgesia in the prone position. His back was stiff and scoliotic, and the paravertebral muscles were contracted. Straight leg raising was painful in the left leg at 30° and at 70° in the right leg. Inverted straight leg raising was equally painful in both legs. Muscle tone was impaired in both quadriceps and psoas muscles (table I). Bilateral adductor and quadriceps reflexes were absent. Both ankle jerk reflexes were weak. Plantar reflexes were normal on both sides, and there was no patellar or ankle clonus.

The patient had no sphincter dysfunction, and perineal examination was normal. Sensibility was depressed in the left L4 territory. To evaluate the possibility of an upper lumbar lesion, a myelography was done (figs. 1 and 2) and followed by CT-scan. An anterior extradural compression was seen at two levels (fig. 2).

At the L1-L2 level a disc herniation descending behind L2 caused a near total block in the head-down position. The intervertebral space L1-L2 was narrowed (fig. 2). Another disc herniation was seen at the L3-L4 level.

No precise canal measurements were done. The canal was decreased in diameter, but we believed the claudication to be caused by the disc herniations and not by narrowing of the lumbar canal. Myelo-CT scan was imprecise at the L1-L2 level. The lumbar canal appeared to be filled with tissue of the same density as the intervertebral disc. At the L3-L4 level a disc herniation was seen in the left part of the lumbar root canal (fig. 3). For better definition of the L1-L2 level an MRI was done ; the T1-weighted sagittal image confirmed a disc herniation at the L1-L2 level descending behind L2 (fig. 4). The remaining intervertebral

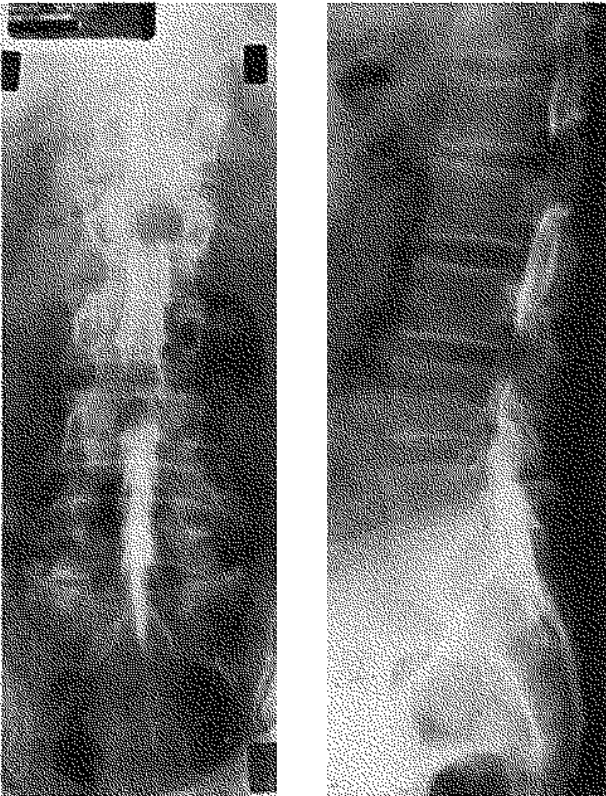
Table I. — Muscle strength in the lower extremities

	Psoas	Quadriceps
R	3/5	2/5
L	3/5	3/5

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Fig. 1. - AP view of the head-down myelogram. There is a near total block at the L1-L2 level.

Fig. 2. - Lateral view of the head-down myelogram. Again severe compression is seen at two levels: L1-L2 and L3-L4. Protein content of the CSF was 477 mg%.

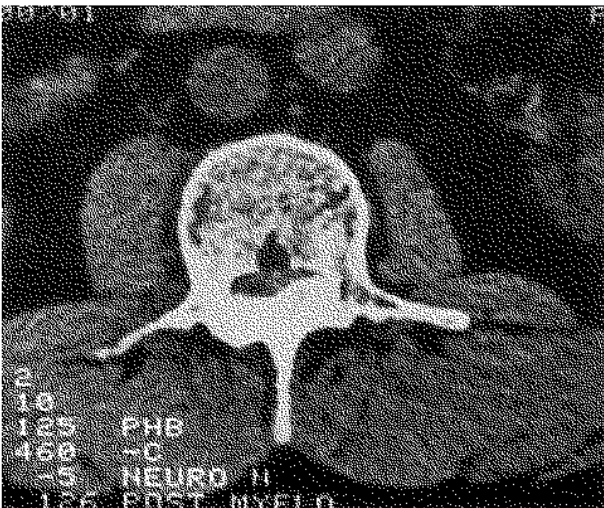


Fig. 3. - CTscan at the L3-L4 level after lumbar contrast injection. There is a disc herniation in the left part of the lumbar root canal.

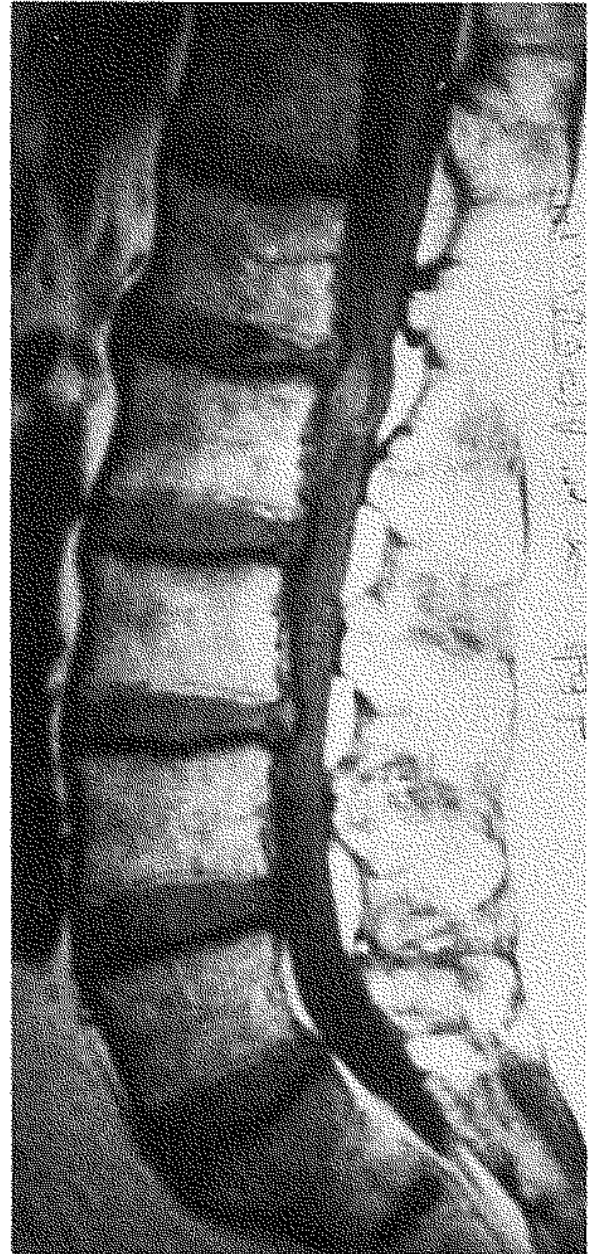


Fig. 4. - T1-weighted image (1,5 Tesla, Tr = 460 msec, Te = 20 msec) showing both disc herniations. The remaining intervertebral disc at the L1-L2 level shows signs of severe degeneration. The herniation itself has slid behind L2.

disc had signs of severe degeneration. Because the L3-L4 herniation lay to the left of the sagittal plane, axial imaging was done to confirm the disc herniation at the L3-L4 level already seen on myelogram and CT scan (fig. 5).

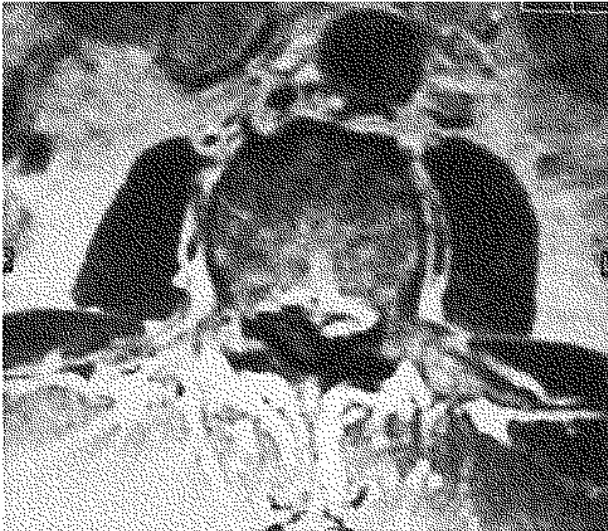


Fig. 5. — Axial MRI T1-weighted image (1,5 Tesla, Tr = 460 msec, Te = 20 msec), showing the lateral L3-L4 herniation. The image is the same as that in fig. 3; left and right are inverted for technical reasons.

Surgical exploration of both levels was done. At the L1-L2 level a laminectomy was performed for a large, median extruded disc herniation, descending behind L2 and filling the lumbar canal.

At the L3-L4 level a left interlaminary approach of the lateral herniation was done. The posterior ligament was ruptured at the L1-L2 level and intact at the L3-L4 level. The postoperative course was uneventful and the patient was discharged with resolution of both the sciatica and the claudication.

DISCUSSION

Aronson describes upper lumbar disc herniations in a review of a large series of surgically-treated lumbar disc herniations (2). Of 1395 operated herniations 1 to 2% occurred in the upper lumbar area (2). The L3-L4 level herniations are more common than L1-L2 level herniations (2, 4, 5, 8, 11, 13, 16, 17, 20, 22, 23).

The natural history of an upper lumbar disc herniation is one of low back pain and lower limb pain (1, 2, 3, 6, 7, 9, 10, 15, 17, 23). Most upper lumbar disc herniations occur in the 50 to 60 year age group (7). The causative mechanism is usually a brisk flexion-rotation movement; trauma is a rare cause of disc herniation (12, 20). Clinical diagnosis may be difficult because of the lack of precise "root" signs. Only half the patients have painful straight leg raising. Loss of reflexes is more common in third lumbar disc herniations than in the other upper lumbar levels (2, 12, 14, 19).

Half the patients have sensory disturbances in the involved dermatome (2). Muscle wasting, especially of the psoas and quadriceps muscles, is common (2). Sphincter dysfunction rarely occurs (7). Paraparesis or paraplegia, the most impressive clinical presentations, are rare and usually associated with achondroplasia (1, 2, 6, 12, 19, 21).

A series of multilevel herniations was reviewed by Cloward in 1955 (7). Of the 206 operated patients, 33 had multilevel herniations but none occurred in the upper lumbar area. Sprangfort's review of large series of disc herniations confirmed the relative rarity of the upper lumbar disc herniations but did not mention their multilevel occurrence (18).

CONCLUSION

We assumed that the L1-L2 herniation caused the claudication and that sciatica was caused by the L3-L4 herniation appearing older because of the gaseous degeneration seen on the sagittal MRI.

In our case the patient was referred to our center with a CT scan exploring the lower lumbar area from L3 down to S1. Clinically an upper lumbar "lesion" was suspected leading to myelography and MRI because the CT scan lacked precision.

Upper lumbar disc herniation is uncommon. The diagnosis may be difficult because of the lack of precise "root" signs. We stress the fact that medical imaging work-ups can only be directed by precise clinical history taking and careful clinical examination.

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SAMENVATTING

M. VLOEBERGHES, J. NOTERMAN, M. LEVIVIER, D. BALERIAUX en J. BROTCHE. Het voorkomen van discus hernia in de hoge lumbale regio.

Het voorkomen van discus hernia in de hoge lumbale regio wordt op minder dan 5% geschat. Deze specifieke localisatie van een discus hernia uit zich door andere symptomen en tekens dan de herniae in de lage lumbale regio. De differentiaaldiagnose met een nauw lumbaal kanaal kan zich opleggen. Dit artikel handelt over een patiënt met een zeldzaam voorval, namelijk een hernia op L1-L2 en een andere simultaan op L3-L4. De diagnostische en operatieve procedures worden beschreven. De auteurs benadrukken het belang van klinisch gerichte medische beeldvormingsprocedures.

RÉSUMÉ

M. VLOEBERGHES, J. NOTERMAN, M. LEVIVIER, D. BALERIAUX et J. BROTCHE. La fréquence des hernies discales de la région lombaire supérieure.

La fréquence des hernies discales de la région lombaire supérieure est estimée à moins de 5%. Une hernie discale avec cette localisation particulière se manifeste par d'autres signes cliniques que les hernies dans la région lombaire basse. Cet article présente un cas de hernie discale à deux niveaux : L1-L2 et L3-L4. La démarche diagnostique ainsi que l'intervention sont décrites. Les auteurs insistent sur l'importance des données cliniques et du bilan radiologique, dans l'évaluation préopératoire.