Herniated disc extruded in the retroperitoneum

S. Djebbar\textsuperscript{a,}\textasteriskcolor{red}, J. Manelfe\textsuperscript{b}, P. Meyer\textsuperscript{c}, P. Copin\textsuperscript{b}, E. Desportes\textsuperscript{b}, M. Gomes\textsuperscript{a}, E. Souverain\textsuperscript{a}, A. Nataf\textsuperscript{a}, B. Dallaudiere\textsuperscript{b,}\textsuperscript{c}

\textsuperscript{a} Service d'imagerie musculosquelettique, CHU de Lille, rue du Pr-Émile-Laine, 59037 Lille, France
\textsuperscript{b} Hôpital Bichat – Claude-Bernard, 46, rue Henri-Huchard, 75018 Paris, France
\textsuperscript{c} Clinique du sport, 2, rue Negrevergne, 33700 Mérignac, France

Observation

A 57-year-old man consulted for repeated episodes of hyperalgic left lumbar cruralgia, with sudden onset 3 weeks before without any specific antecedents.

The patient was apyretic. The clinical examination detected a spinal syndrome with left bending sign. The imaging of the lumbar spine included a CT scan without injection (Fig. 1a and b) and an MRI without injection and with injection of gadolinium (Fig. 2a, b, c and d).

\textsuperscript{☆} Here is the answer to the case Left lumbar cruralgia in a 57-year-old man previously published. As a reminder we publish again the entire case with the response following.

\textsuperscript{*} Corresponding author.

E-mail address: sahlyadjebbar@yahoo.fr (S. Djebbar).
Figure 1. CT scan of the lumbar spine without injection.

Figure 2. MRI without and with injection of gadolinium.
What is your diagnosis?

Which of the following proposals is your diagnosis for this case?
• Schwannoma of left L3;
• disc herniation;
• abscess of the left psoas;
• thrombosis of a left lumbar vein.

Diagnosis

Herniated disc extruding into the retroperitoneum, with mass effect on left L3.

Comments

The CT scan, obtained three weeks after the onset of the symptoms, reveals multileveled degenerative changes, with marked narrowing of the intervertebral space, in particular in L3–L4, as well as adjacent osteophyosis (Fig. 3a and b). Moreover, a mass of tissue density is noted. It is isodense to the discs, homogenous, adjacent to the body of L3, following the deep side of the psoas major bundle of the left iliopsoas muscle, from which it nevertheless remains distinct (Fig. 3a and b). It is located within the juxtaspinous retroperitoneal fat, in contact with the arteria radicularis magna of L3 and the corresponding lumbar veins.

The MRI obtained 1 week later found multileveled degenerative disc disease, with narrowing of the intervertebral space and hyposignal in T2 of the discs (Fig. 4a). Slight inflammatory mirror rearrangements of the vertebral bodies are seen in L3–L4 on the left (Fig. 4d). The mass appears in hyposignal in T1–WI, identical to the signal of the adjacent intervertebral discs, but in hypsosignal in T2–WI (Fig. 4b), only enhanced at the periphery (Fig. 4c) and leads to a major inflammatory reaction (Fig. 4d). The signal is higher than the adjacent degenerative disc in T2–WI, giving a semiological key in the diagnosis of extruded disc herniation.

Discussion

Extruded disc herniation is defined by the presence of a fragment of hernia completely detached from the disc that has become mobile. It may remain in a sub-ligamentous situation, the most common case, but may also migrate through the posterior longitudinal ligament in the extra-ligamentous space, as in our case. The extruded fragment is then free within the epidural fat, providing a granulomatous reaction that will stimulate its resorption. This inflammatory reaction explains the radicular symptomatology, by chemical irritation, and is essential for the imaging characteristics, especially MR. In this example, CT scan does not provide any specific information regarding to the nature of the mass. Nevertheless, it provides a perfect idea of the retroperitoneal topography at the deep side of the psoas muscle, in contact with the extraforaminal portion of the left L3 root, followed by corresponding vessels. Above all, it supplies fundamental informations about the state of the adjacent degenerative spine and excludes differential diagnoses (lesions of the psoas and lumbar vessels).

MRI is the most efficient study for the aetiological diagnosis. The signal of the disc fragment is identical to the other discs in T1–WI, in hypsosignal T2–WI, moderate, but highly superior to the signal of the adjacent intervertebral disc. The enhancement is circumferential within a large area of oedema, attesting to the extent of the inflammatory reaction. These MRI characteristics are classic signs of extruding herniation. The interest of our case report is in the very atypical topography of the disc migration, at a distance, in extracanalar situation. These “far lateral” migrated hernias represent 2 to 12% of all herniations, in equal proportions in L3–L4 and L4–L5. The differential diagnoses are:

Figure 3. CT scan of the lumbar spine, reconstructions in the coronal plane: mass of tissue density, isodense at the discs, homogenous, at the height of the body of L3 (a). CT scan of the lumbar spine, reconstructions in the axial plane: the mass of tissue density is located within the juxtaspinous retroperitoneal fat (b).
Figure 4. MRI of the T1-weighted lumbar spine in the sagittal plane: the mass is in hyposignal T1, identical to the adjacent discs (a). MRI of the T2-weighted lumbar spine in the axial plane: rounded lesion in hypersignal T2, at the deep side of the left psoas muscle (b). MRI of the lumbar spine in the sagittal plane in T1 after injection of gadolinium: the mass is only enhanced at the periphery, in an annular manner (c). MRI of the lumbar spine in the frontal plane in T1 after injection of gadolinium: large area of oedema at the deep side of the psoas muscle (d).

- schwannoma of the spinal L4 root: less sudden clinical settings; classically hypointense on T1, more distinct in hypersignal T2. The enhancement is usually more diffuse, even if the target aspect is frequent. No associated degenerative changes;
- abscess of the left psoas: the lesion is not developed within the psoas muscle;
- thrombosis of the left lumbar vein: no risk factor in the patient’s history (lumbar puncture, recent surgery, blood dyscrasia); integrity of the lumbar vessels: the mass is extravascular.

Disclosure of interest
The authors declare that they have no conflicts of interest concerning this article.

Further reading