Letters

Unilateral paresis of the abdominal wall: a radicular syndrome caused by herniation of the L1–2 disc?

Sir: Herniation of the disc between L1 and L2 is uncommon; we report a patient with weakness of the abdominal wall muscles that was caused by a disc herniation at this level. This radicular syndrome has not been described before.

The patient had experienced mild episodes of low back pain since 1981. In October 1985, when 62 years old, he felt a strange painful sensation in his right flank. The pain developed gradually and was not preceded by injury; it worsened and radiated into the right inguinal region. He felt a bulging of the lower part of his abdomen and sought medical attention. The severity of the pain was increased by walking and sitting but not by increasing abdominal pressure. There was no evidence of sphincter or genital reflex disturbance, nor of weakness in the legs or anaesthesia in the buttocks. He had not previously had an operation on his spine nor abdomen.

Investigations in November 1985 did not show evidence of an abdominal tumour, or an inguinal hernia; blood count, chest radiograph and bone scans were normal. He had moderate paravertebral muscle spasm with restriction of spinal movement. Standing upright made the bulging of the lower part of the abdomen more clearly visible (fig 1). When testing the oblique abdominal muscles on the right the lower shoulder could not be lifted from the table and the torso could not be rotated in the opposite direction. There was reduced sensation of the skin above the right inguinal ligament and the adjoining upper part of the right pubic region, antero-medial thigh and lateral aspect of the pelvis and hip. The superficial hypogastric reflex was absent on the right side. Other reflexes were normal and the plantar flexor. Straight leg raising was full and without pain. Plain radiographs showed a marked thoracic scoliosis and a slight lumbar spondylosis. A computed tomographic scan with intrathecal contrast showed displacement of the dura at the L1 level on the right side (fig 2). Myelography of the lower thoracic and lumbar sacral region showed an indentation into the column of contrast at a similar level. The CSF protein content was normal. In December 1985 an L1 laminectomy was performed and showed prolapsed disc material still attached to the L1–2 interspace. The tissue had migrated in an upward direction and settled underneath the right side of the lamina of L1 where it was compressing the outgoing root, which was red and swollen. The disc material was removed and microscopically showed degenerative cartilage in connected tissue. Within two weeks of the operation the patient's symptoms had been relieved and ten months later the weakness of the abdominal wall had almost disappeared.

The clinical, radiological and operative features pointed to a lesion of the right L1 nerve root. The ventral ramus of L1 divides into iliohypogastric and ilioinguinal nerves; although the former can receive a fascicle from the twelfth thoracic nerve and the latter a fascicle from the second lumbar nerve, both are mainly produced by the first lumbar root of which they form the "upper branches". They supply the lower segments of the transversus abdominis and the internal oblique muscles and may also supply the external oblique. The cremaster muscle is supplied by the genitofemoral nerve which, in addition to its L1 component, has supply from L2 and hence its reflex was not lost in our patient. The upper and lower borders of the L1 dermatome are approximately parallel to the groin; they exclude the skin of the scrotum and the upper part of the femoral triangle supplied by the genitofemoral nerve and this area was not involved in our patient. The findings in our patient are therefore consistent with these anatomical principles. They differ from those previously described in patients with herniation at L1–2 who suffered pain in the anterior aspect of the thigh probably because the herniation was more medial and inferior and therefore compressed the L2 root rather than the L1. A syndrome similar to the one we described can occur after a herniomy or nephrectomy, the so-called ilioinguinal syndrome, and other non-traumatic compressive syndromes affecting the ilioinguinal nerve are also described. 4

We suggest that when a patient has a unilateral bulging of the abdominal wall musculature which cannot be explained by these other syndromes, an upper lumbar disc herniation should be suspected.

References

Accepted 5 November 1988

Fig 1 Standing upright; bulging of the right lower part of the abdomen.

Fig 2 CT scan with intrathecal contrast; at the level of vertebrae is an intraspinal, but extradurally localised, mass with impression in the dura on the right side and displacement of the conus medullaris in the opposite direction.

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