Cervical intradural disc protrusion

Sir: I present the case of a 47 year old man who developed neck and right arm pain after a vigorous game of badminton. Two months later these symptoms increased in severity and he consulted his general practitioner who recorded a restriction of neck movements and some cervical tenderness but no abnormal neurological signs. The patient was treated with a soft collar and simple analgesics. Over the following week a reduction in pinprick and temperature sensation was observed in the left arm and leg and the patient was referred to the Regional Neurosurgical Centre at Newcastle General Hospital. On admission a reduction of power in the right arm and loss of the right triple reflex were recorded.

A cervical myelogram showed a small round, intradural, extramedullary filling defect apparently lying posterior to the cord at the level of the C5/6 disc space. A CT myelogram showed an extradural disc protrusion at C5/6 indenting the dural sac and in continuity with an intradural mass which displaced the cord posterolaterally and to the left (fig). A diagnosis of an intradural cervical disc protrusion was therefore made.

An anterior cervical exploration and microdiscectomy was performed with a Cloward’s fusion at C5/6. The posterior longitudinal ligament appeared intact and was incised and several extradural disc fragments were removed. A large intradural disc fragment was seen and was removed provoking a rush of CSF. A few smaller intradural disc fragments were then removed and the defect in the dura was closed with Surgicel. The patient made an uncomplicated recovery, the abnormal clinical signs resolved and the neck pain was much improved.

Intradural penetration of disc fragments from a prolapsed intervertebral disc is an unusual manifestation of disc disease and a review by Eisenberg identified 51 previously recorded cases. Ninety per cent of the reported cases have occurred in the lumbar spine. The incidence of the discovery of intradural disc fragments during surgery for prolapsed lumbar intervertebral discs has been estimated by Lesoin to be 0.27%. Intradural herniation of fragments from a cervical disc is much less common and we could find only four such cases in the literature.

The onset of symptoms in these patients is typically sudden although as in our case it may be preceded by a period of local and radicular pain. The absence of a history of neck trauma in our patient is not unusual and none of the previous cases suffered neck trauma immediately prior to the onset of symptoms although in two cases there was a history of a cervical injury at a road traffic accident several years earlier. All of the cases presented with paresis of an arm which in four of five patients was specified as lower motor neuron and most (three of five) also had a spastic paraparesis. Four of these patients had a dissociated sensory loss and one patient had a complete Brown-Séquard syndrome. At least one and probably two of these patients presented with a Horner’s syndrome (an unusual finding in extradural cervical disc prolapse). Although these clinical features can be produced by extradural disc protrusion, in the presence of this combination of clinical symptoms and signs, particularly where a Horner’s syndrome is observed, the possibility of an intradural disc fragment should be considered.

Conventional myelography was performed in all of these five cases: two had a complete myelographic block and in three an irregular, probably intradural filling defect was seen. The latter is a more reliable guide to the correct diagnosis. CT myelography has been shown to be valuable in the diagnosis of lumbar intradural disc protrusion and typically shows an irregularly margined, intradural filling defect. This case is only the second reported in the literature of confirmation of an intradiscal cervical disc prolapse by CT myelography and the findings were characteristic in both cases. A rounded intradural soft tissue mass displacing the spinal cord at the same level as an extradural disc protrusion.

The four reported cases of intradural cervical disc protrusion underwent laminectomy with removal of the intradiscal fragments and made a good but incomplete recovery. anterior exploration, microdiscectomy and Cloward’s procedure was performed in the case reported above and the patient made a complete neurological recovery.

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References

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Fig (a) diagram of CT myelogram, (b) CT myelogram showing the disc protrusion at C5/6. The intradural portion is clearly demonstrated with compression and deformity of the cervical cord.
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