We present 2 cases of cauda equina tumours that caused delay and confusion in diagnosis because initially the lesions were not localized to any particular level. Neurosurgeons are aware of the mobility of spinal tumours; however, only 7 cases of mobile intraspinal tumours have been documented.1–5 Redundancy of the nerve roots of the cauda equina enables the tumours to migrate through several vertebral levels, causing only transient paroxysmal symptoms from involvement of lumbar and sacral roots at various times. Objective signs may develop only months later as the tumour enlarges enough to become impacted at one level. Until then, the fleeting, bizarre symptoms may be considered as non-neurogenic.

Magnetic resonance imaging (MRI) is desirable and reliable, but even in institutions where it is available, myelography and CT scanning are often used for initial screening. When correctly performed, these neuroradiologic procedures are sufficient to localize a mass lesion within the lumbar spinal canal. Our 2 patients were seen before the introduction of MRI. In mobile tumours, discrepancy between the clinical and neuroradiologic findings and the surgical location of the tumour may prevail. Therefore, awareness of mobility is important for early diagnostic confirmation when dealing with cauda equina tumours.

CASE REPORTS

Case 1

A 65-year-old man had paroxysms of backache and perianal spasms for a
year. He also had pain and paresthesias in 1 leg or the other, without any consistency. His transient symptoms worsened over 6 months. There were no bladder or bowel symptoms. No muscle weakness or sensory changes were noted by the physician, who admitted the patient for surgical management of spondylolisthesis, which was diagnosed by plain x-rays at the L3–4 level. The myelogram, surprisingly, was suggestive of an intradural tumour at L5 (Figs. 1 [left] and 2 [left]). However, CT scanning a few hours later revealed that the tumour had migrated further up to L3, above the L3–4 spondylolisthesis. After laminectomy at L3, L4 and L5, an intradural schwannoma attached to a root of the cauda equina, still moving up and down, was removed.

The patient made a smooth recovery and had no further paroxysmal radicular symptoms over a 3-year follow-up.

Case 2

A 78-year-old, previously healthy, man suffered pain in the right lumbar area like that from an electric shock, with occasional radiation to the anterior and lateral thigh. Sometimes he experienced pain or paresthesias radiating to the calf or even to the coccyx on the right side. These spells were transient and paroxysmal for several months and then became constant during the 3 weeks before admission. No objective neurologic signs were noted on admission. The clinical diagnosis was spinal stenosis, because the radiologist reported degenerative changes at multiple lumbar levels, without spondylolysis or spondylolisthesis. MRI was not available. Routine myelography, surprisingly, showed an ovoid intradural tumour just below
the L2–3 disc space. The subsequent CT scan demonstrated the lesion above the L2–3 level. After multiple lumbar laminectomies (L1, L2 and L3), before the dura was opened, the tumour mass could be seen moving up and down between L1 and L3 with each respiration. A schwannoma from an intradural root was removed. The patient’s symptoms resolved immediately and he remained well over a 4-year follow-up.

DISCUSSION

With the introduction of nonionic water-soluble contrast myelography, the lumbar spinal canal can be visualized much better, so a mass lesion can be demonstrated without great difficulty. These 2 cases suggest a migratory tendency of a cauda equina mass lesion, especially if the symptoms pertaining to different lumbar or sacral roots are transient and paroxysmal. These are not the usual clinical presentations in spondylolisthesis (case 1) or spinal stenosis (case 2). The myelogram and CT scan are needed to make the correct diagnosis if MRI is not available. In case 1, even when the myelogram showed a mass lesion, the CT scan failed to confirm the diagnosis because the radiologist limited the scanning to the myelographically abnormal levels only. With an awareness of the migratory tendency for some of these tumours, we were able to demonstrate the lesion on CT with less difficulty in case 2, as the whole lumbar spinal canal was scanned. Mobile spinal tumours may be rare and difficult to diagnose preoperatively. The movement of the tumour mass observed in the neuroradiologic studies and during surgery before opening the dura is caused by the laxity of the nerve root to which the tumour is attached. An ependymoma of the filum terminale has been reported to move over a distance of 7 cm. In lumbar spinal stenosis, redundancy of the cauda equina nerve root has been reported. Such redundancy allows mobility of an attached tumour. The lumbar spinal canal allows mobility for the cauda equina and for any mass le-

FIG. 2. Case 1. Two myelograms 1 week apart showing the lesion at the L5 (left) and L4 (right) vertebral levels.
sion arising from it, as the nerve roots can float in the spinal fluid below L1–2, where the cord ends in most adults.

In summary, there may be various reasons for the migratory tendency of some lumbar spinal tumours. Excessive mobility of the tumour is responsible for some bizarre, transient paroxysmal radicular symptoms with very little objective findings. Such mobile tumours, although rare, can be demonstrated by multilevel neuroradiologic investigations. Awareness of the possibility that tumours of the cauda equina may migrate is most important for the early diagnostic confirmation of the lesions and for prompt surgical management.

References


