Tarlov cysts: a report of two cases

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ABSTRACT

Perineural cysts are common and usually detected incidentally during magnetic resonance imaging of the lumbosacral spine. Treatment is indicated only when the cyst is symptomatic. We report one such patients presented with cauda equina syndrome and another with low back pain with claudication. They underwent excision and duroplasty; both motor and sensory fibres were carefully separated from the cyst wall using a nerve root retractor and penfield. There was no nerve root damage or neural deficit. Symptoms were relieved postoperatively.

Key words: radiculopathy; spinal nerve roots; Tarlov cysts

INTRODUCTION

Tarlov cysts are perineural cerebrospinal fluid–containing cysts, most commonly arising in the sacral region within the sacral nerve roots.1 The prevalence of Tarlov cysts in the adult population can be as high as 4.6%.2 Most are small, multiple, and asymptomatic; large and symptomatic cysts are rare.3–7 We report 2 patients with symptomatic Tarlov cysts treated successfully by excision and duroplasty.

CASE REPORTS

Patient 1

In November 2009, a 34-year-old woman presented with a 6-month history of perianal paraesthesia, gradually progressive pain in the lower back and the back of the right thigh, and a one-month history of bowel and bladder incontinence. Examination revealed a diminished ankle jerk on the right side and hypoesthesia in the S2 to S4 dermatomes. Straight leg raising was limited on the right side, and the Lasegue’s sign was also positive.

Radiographs of the lumbosacral spine were normal. Magnetic resonance imaging (MRI) revealed a large cyst measuring 16x15x15 mm (comprising
a number of smaller cysts) in the spinal canal of S1 extending into neural foramina causing impingement of exiting and traversing nerve fibres (Fig. 1).

The cyst was exposed after laminectomy of S1 and S2. It was located near the dorsal root ganglion of S1. It was opened and was noted to be filled with cerebrospinal fluid; the Valsalva manoeuvre was used for confirmation. Both motor and sensory fibres seemed inseparable from the cyst wall. The cyst was aspirated, its neck ligated, and the redundant portion was excised. The nerve root was kept intact; only the covering sheath (containing nerve fibres) was excised. No inflow of cerebrospinal fluid was evident during a repeat Valsalva manoeuvre. Histopathological examination revealed inflamed layers of meninges and the presence of neural elements.

Postoperatively, the patient reported marked pain relief. At month 6, the patient regained bowel and bladder control. Sensation and deep reflexes were also normal. At year 2, the patient was neurologically intact and symptom-free.

Patient 2

In April 2004, a 28-year-old man presented with low back pain radiating to the lower limbs. He also had a history of claudication but no bowel or bladder symptoms. Examination revealed a diminished ankle jerk, weakened foot dorsiflexion, and hypoesthesia in the distribution of L4 and L5 dermatomes.

Radiographs were normal. MRI showed a cyst measuring 12x10x9 mm in the spinal canal at the L4/ L5 level encroaching into the left neural foramina and compressing both L4 and L5 exiting nerve roots (Fig. 2).

Laminectomy of L3 and L4 was performed using the standard posterior approach. The cyst was excised en mass after ligation of its neck. The nerve root was kept intact; only the covering sheath (containing nerve fibres) was excised. Again, the Valsalva manoeuvre was used for confirmation. Histopathology of the cyst wall revealed the presence of nerve sheath elements.

Postoperatively, the patient had dramatic improvement of pain and claudication. At month 6, the patient only had mild, localised back pain. At year 5, the patient was neurologically intact.

DISCUSSION

The prevalence of Tarlov cysts has been estimated to be 1 to 4.6% among the general adult population. 70% of the cysts are asymptomatic, 17% have an additive effect on other pathological entities, and only 13% are symptomatic. Symptoms include low back pain, radiating pain in the lower limb, motor weakness, and lumbar canal stenosis. The cysts are
often multiple, extend circumferentially around nerves, and can enlarge to impinge on neighbouring nerve roots causing bone erosion and/or fractures of the sacrum.9

Treatment is indicated only when the cyst is symptomatic. Options include external cerebrospinal fluid drainage,4 percutaneous cyst drainage,2,5 percutaneous fibrin glue injection,5 insertion of a cyst-subarachnoid shunt,6 a cyst-peritoneal shunt or a lumboperitoneal shunt,7,10 resection of the cyst neck,7,10 cyst wall resection,11–13 and cyst imbrications.7,14–16 Possible complications after excision include infection, cerebrospinal fluid leakage, and neurological deficit (as nerve fibres may entangle with the cyst wall). In our patients, both motor and sensory fibres were carefully separated from the cyst wall using a nerve root retractor and penfield. There was no nerve root damage or neural deficit.

Large Tarlov cysts are rare. A cyst measuring 11x10x9 mm consisting of multiple cysts detected by computed tomographic myelogram has been reported.17 The cyst in patient 1 was even larger measuring 16x15x15 mm. Tarlov cysts are usually located in the sacrum; involvement in the lumbosacral spine is rare. Thus, the diagnosis of a perineural cyst should not be precluded based on location. MRI is a useful tool for evaluation and surgical planning.

REFERENCES