A Growing Pre-existing Juxta-facet Cyst after Lumbar Laminectomy: Report of a Case

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The growth of a pre-existing lumbar juxta-facet cyst after a laminectomy is a rare condition. Here we report a 60-year-old woman who presented with acute severe buttock pain and recurrent left L5 radicular pain one month after a laminectomy for L4-5 spinal stenosis and a herniated intervertebral disc. Magnetic resonance imaging (MRI) revealed that a cyst extending from the facet joint to the spinal canal compressed the left L5 nerve root. Without surgical intervention, the patient’s condition improved after analgesic medication, bed rest and the fitting of a lumbar corset. At the 6-month follow-up, the MRI showed spontaneous resolution of the cyst with no narrowing of the spinal canal or root compression. The pathogenesis of the cyst could have been related to the degenerative mobile spine after the decompressive laminectomy. This case demonstrates that post-laminectomy recurrence of radiculopathy may result from the growth of a pre-existing juxta-facet cyst. Furthermore, conservative treatment may be the first therapeutic option because spontaneous resolution of such a cyst is known to be possible.

Key words: juxta-facet cyst, post-laminectomy, radiculopathy

Lumbar radiculopathy is a common disease occurring most frequently as a result of a herniated nucleus pulposus or lumbar stenosis. However, on rare occasions, extradural cysts arising from the facet joint of the lumbar spine, so-called juxta-facet cysts, can cause radiculopathy.1 The pathogenesis of such cysts has remained unclear to this day, but degenerative facet joints associated with a defective or ruptured joint capsule and subsequent herniation of the synovial lining are the most accepted causative theory.2,3 Although the treatment of choice may be surgery or non-surgery, surgical decompression is nearly always required if symptoms deteriorate.4,5 The following case is unusual in that the patient who had undergone a laminectomy and was experiencing recurrent radiculopathy had a growing lumbar juxta-facet cyst. Extensive conservative treatment was considered in this case as the first therapeutic option.

Case Report

A 60-year-old woman, 80-kg in weight and 160 cm in height, was brought to the emergency room (ER) because of an acute onset of recurrent left lumbar radiculopathy. She had had chronic low back pain, intermittent claudication and left sciatica for 4-5 years. An MRI performed 7 months previously revealed grade I...
Meyerding spondylolisthesis, hypertrophy of the ligamentum flavum and a herniated intervertebral disc at the L4-L5 level. A small juxta-facet cyst 0.3 cm in diameter was also found (Fig 1). She underwent an L4-5 laminectomy and discectomy and her symptoms improved. We did not excise the small cyst during the operation because the cyst did not appear to be causing symptoms.

One month after the surgery she began to complain of severe buttock and left leg pain, as well as numbness and paresthesia in the L5 dermatome. An MRI, taken at this time, showed a left juxta-facet joint cyst extending to the left spinal canal, causing left lateral recess stenosis, and compression of the left L5 nerve root, and left aspect of the thecal sac (Fig 2), but no recent hemorrhage within the cyst was noted. Surgery was recommended and conservative treatment also started. However, while waiting for surgery, the patient’s condition improved significantly after analgesic medication, the use of a lumbar corset and bed rest for one week. She was discharged with mild soreness of the left leg 10 days after admission. At the 6-month follow-up, the patient was asymptomatic and was able to return to normal daily activities. The MRI findings disclosed that the cyst had undergone spontaneous resolution without narrowing the spinal canal (Fig 3).

Discussion

Lumbar juxta-facet cysts refer to cysts that arise from the zygapophyseal joint capsule of the lumbar spine containing serous or gelatinous fluid. The reported incidence of these cysts, among patients undergoing lumbar spine operations ranges from 0.01 to 0.08%. The clinical presentations include acute sciatica, myelopathy and cauda equina compression depending on the region of the spine involved and the size of the cyst. Our patient complained of acute severe buttock pain and left leg pain, as well as the development of numbness and paresthesia in the L5 dermatome. The clinical picture was compatible with the MRI findings which showed a cyst extending to the left spinal canal, causing left lateral recess stenosis, and compression of the traversing left L5 nerve root.

Although the pathogenesis of juxta-facet cyst formation is unclear, predisposing factors such as degenerative spondylolisthesis, trauma or postsurgical status, and hemorrhages within the cyst are likely causes. However, a postsurgical cyst is ventral in location and caused by arachnoid hernia or a persistent leakage of the spinal fluid. The MRI in this particular case revealed a pre-existing juxta-facet joint cyst extending to the left-hand side of the spinal canal, causing left lateral recess stenosis, and compression of the traversing left L5 nerve root. It however showed no acute hemorrhage within the cyst itself. The growth of the pre-existing juxta-facet cyst is thought to be multi-factorial in cause, including degenerative spondylolisthesis and segmental instability resulting from a previous laminectomy. A growing cyst can be caused by facet joint degeneration associated with a defective or rupturing of the joint capsule during the operation.
operation. Furthermore, both a laminectomy and the injured ligamentum flavum weaken the joint capsule and subsequent herniation of the synovial lining may be another factor for the cyst to begin growing.

Treatment can be divided into nonsurgical and surgical methods. Surgery is the most commonly recommended treatment, especially with symptomatic radiculopathy, progressive neurologic deficits or intractable pain. The results of surgical treatment are usually satisfactory. Nonsurgical treatment including bed rest, physical therapy, chiropractic care, oral analgesics, bracing and selective lumbar spinal injections have also been advocated. However, the results are controversial. In this particular case, both surgery and conservative treatment were scheduled, but without surgery the patient’s radicular pain improved dramatically after analgesic medication, the fitting of a lumbar corset and bed rest. Six months after discharge,
the follow-up MRI disclosed that the cyst had undergone spontaneous resolution without observable narrowing of the spinal canal or root compression. The patient was asymptomatic and had also returned to normal daily activities. We considered that the cyst resolved probably because of decreased inflammatory fluid production and a decrease in microtraumatic events after analgesic medication, the use of a lumbar corset and bed rest. Another explanation would be that physical therapy provided a sufficient mechanical stimulus to cause the cyst to extrude its contents, followed by reabsorption of the cyst fluid.11

Conclusions

Recurrent post-laminectomy radiculopathy may result from the growth of a pre-existing juxta-facet cyst. Conservative treatment could be considered as the therapeutic option because spontaneous resolution of the cyst is possible without surgical intervention.

References

先前已存在近關節面之囊腫於腰椎椎板切除後變大：病例報告

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先前已存在近關節面之囊腫，於腰椎椎板切除後變大之病例極為少見。我們報告一位60歲婦人，因第四、五腰椎椎間盤突出，接受腰椎椎板切除手術後一個月，發生急性臀部及復發性第五腰椎神經痛。磁振造影顯示一囊腫由關節面延伸至神經管，壓迫到左側第五腰椎神經根。病人接受止痛藥物、臥床休息及合身束腹帶治療，未經外科手術，症狀即見緩解。六個月後，磁振造影追蹤發現此囊腫已縮小，對第五腰椎神經管及神經根不再壓迫。病理產生原因可能與腰椎椎板切除後及退化性關節過度活動有關。此案例顯示：於腰椎椎板切除後，若發生復發性神經根疼痛，病因可能是先前已存在近關節面之囊腫，於腰椎椎板切除後變大。其次，可考慮先接受保守療法，因囊腫自發性消退是可能的。