

CYSTIC DILATATION OF SPINAL NERVE ROOT SHEATHS IN THE LUMBO-SACRAL AREA

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Anahtar Terimler:Sinir kökü kılıfı, kistik dilatasyon, bilgisayarize tomografi, myelografi.

Key Words:Nerve root sheath, cystic dilatation, computed tomography, myelography

OZET

Lumbo-sakral mesafede spinal sinir kök kılıflarında kistik dilatasyon

Lumbo-sakral alanda spinal sinir kök kılıflarında kistik dilatasyon tesbit edilen nadir bir vaka rapor edilmiştir. Non-iyonik kontrast madde ile yapılan myelografi, myelografi sonrası yapılan bilgisayarize tomografiye göre patolojiyi daha net bir şekilde demonstre etmiş ve hadisenin tanısını oldukça kolaylaştırmıştır. Görüntüler, klinik özellik, cerrahi endikasyon ve cerrahi tedavi kısaca tartışılmıştır.

SUMMARY

A rare case with cystic dilatation of spinal nerve root sheaths in the lumbo-sacral area was presented. Myelography with non-ionic contrast media demonstrated the pathology in more accuracy than computed tomography with myelography and greatly facilitated the diagnosis of this condition. Images, clinical pattern, indication for operation and surgical treatment are briefly discussed.

INTRODUCTION

In 1938 tarlov gave the first detailed description of cystic lesions of the spinal nerve roots and used perineurial cyst for them (1). Then reports related with spinal nerve root cyst termed such as root sleeve dilatation, meningeal cyst, arachnoid diverticula and arachnoid cyst have been appeared in the literature (2,3,4,5,6).

Recent advances in neuroimaging procedures; including myelography with non-ionic contrast media, high resolution computed tomography and magnetic resonance imaging have increased the change of finding these pathologies (4,7,8,9).

In this article a case of bilateral spinal nerve root sheaths dilatation that was confirmed by radiological and surgical appearance was reported.

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CASE REPORT

A 47 year-old man presented with a 4 year history of Lumbar pain. He described his lumbar pain increased in severity and radiated to his left leg for a month and to his right leg for a week. He complained of only pain in his both legs occurred during walking and standing without numbness, tingling and weakness. At rest it disappeared.

No neurological deficit was observed on examination. Only straight leg raising test was positive on both side. Radiographs of the spine were normal. Computed tomography of the L3-S1 area demonstrated root abnormality in size bilaterally, more on the left side at L5-S1 level (Fig.I). Either iohexol myelography or computed tomography performed 3 hours after myelography disclosed abnormal dilatation of S1 and S2 roots at L5-S1 and S1 levels (Fig.II, Fig.III).



Fig I: Computed tomography with contrast media at L5-S1 level. Root abnormality in size bilaterally, more on the left side.

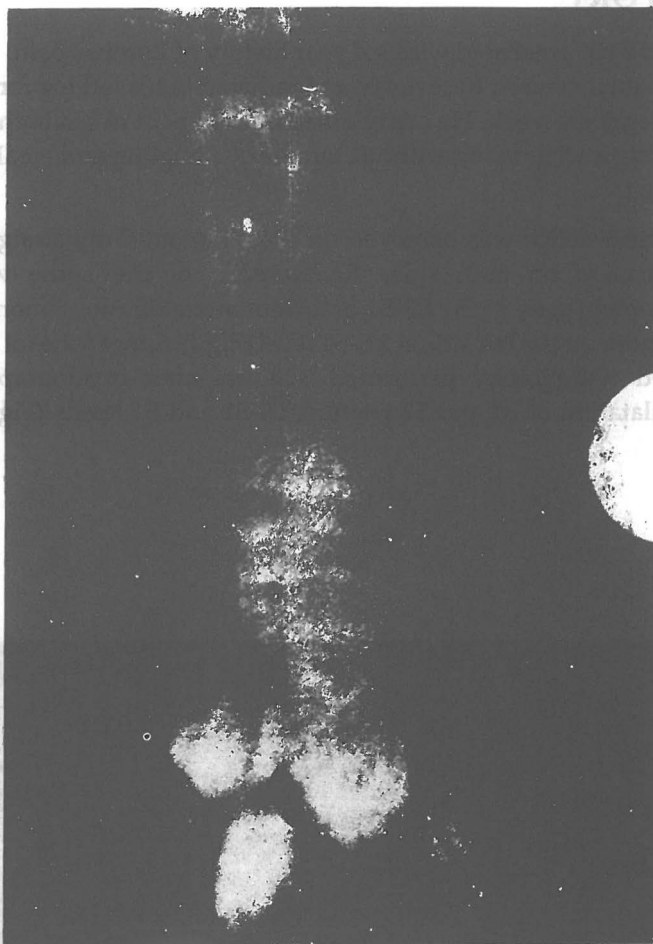


Fig II: Iohexol myelography of the lumbar area demonstrates bilateral cystic dilatation of S1 and S2 roots.

A laminectomy of L5 and S1 was performed. Both dural sac and nerve roots were compressed by laminae and facets. Bilateral S1 and S2 roots sheaths showed cystic dilatation between the dural sac and neural foramen.

Either of the roots were punctured with a needle attached to a syringe and aspirated. Though aspiration its size didn't diminish that shows free communication between the dural sac and nerve root subarachnoid space. When the sheath of the left S2 root was incised longitudinally, no pathology was observed related with dura arachnoid and nerve root except dilatation of the subarachnoid space and a very little pouch on the anterior surface of cystic cavity. Dura over the nerve root was closed with interrupted sutures. The post operative course was uneventful and his symptoms disappeared completely.

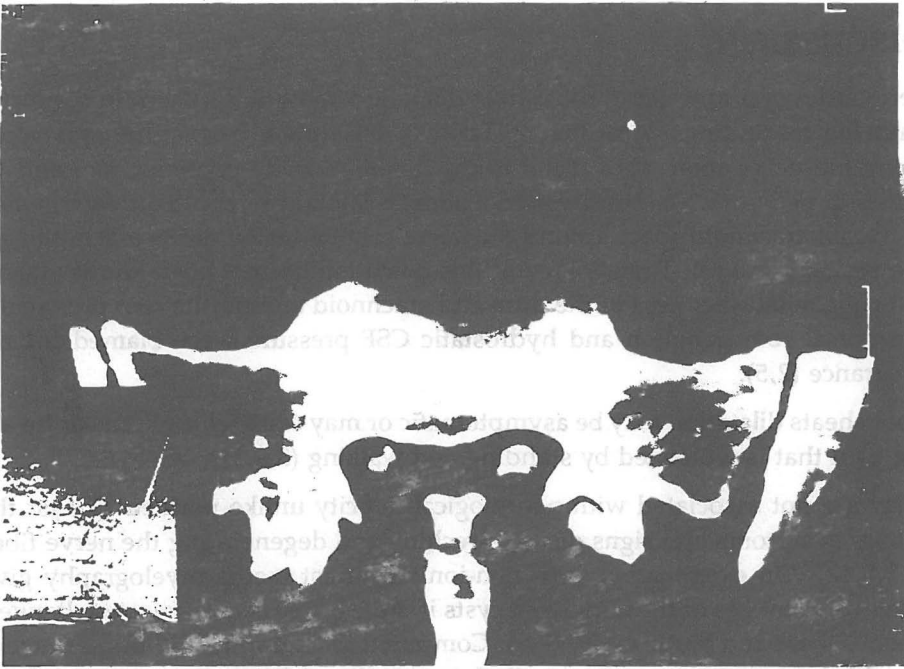


Fig III:Computed tomography with Intratechal contrast media.

A) Poor images of cystic dilatation of S1 roots. They are not seen clearly as well as in myelography with non-ionic contrast media.

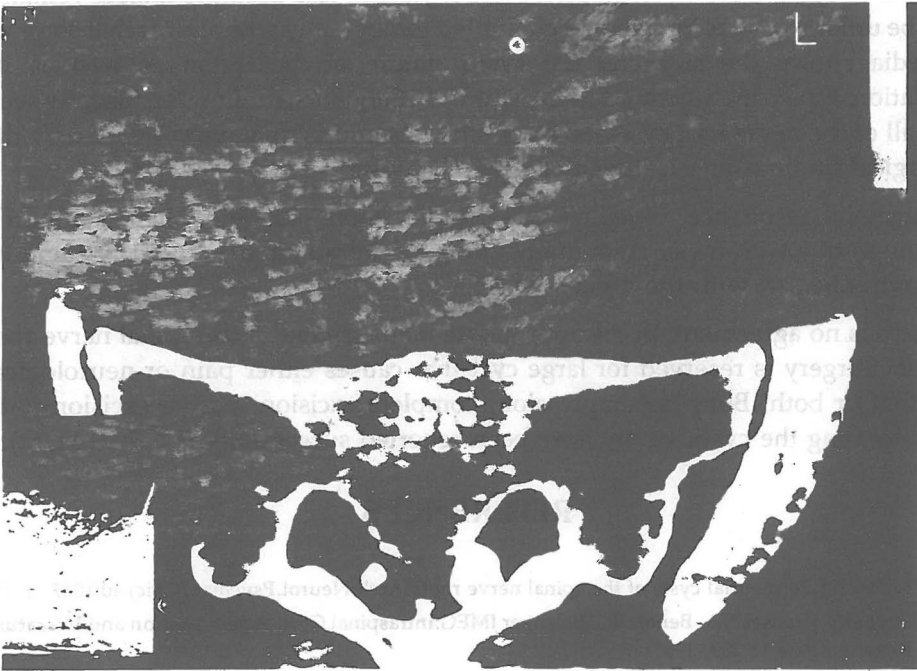


Fig III:B)Asymetric dilatation of S2 roots at S1 level.

DISCUSSION

Perineurial cyst and nerve root sheath dilatation show differences in respect to pathological findings. According to Tarlov's description perineurial cyst occurs along the nerve roots at or distal to the junction of the posterior root and the dorsal ganglion (1,10). However root sheath dilatation refers to an enlargement of the subarachnoid space around the nerve root till fusion of the arachnoid and the perineurium (3). The etiology of this dilatation has not been known exactly but congenital weakness of the dura and arachnoid around the root proximal to the dorsal root ganglion and hydrostatic CSF pressure were blamed for this occurrence (2,5).

Root sheaths dilatation may be asymptomatic or may cause chronic backache and leg pain that is worsened by standing and walking (3,9,11).

They are not associated with neurological deficit unlike perineurial cyst that causes symptoms and signs due to stretching and degenerating the nerve fibers (1,7,8,12). On examination with non-ionic contrast media myelography gives diagnostic images of the nerve root cysts if there is free communication between the dural sac and cystic cavity (8,9). Computed tomography without intrathecal or with intravenous contrast media have no diagnostic value except showing mass image and associated bony changes. In this case computed tomography after intrathecal contrast media was found less useful identifying the pathology of nerve roots than myelography. Why it yielded less accurate images remains to be unknown. It is known that computed tomography with intrathecal contrast media shows the size and the cystic nature of the lesion as well as its relationship to the surrounding structures (4,8,9). Such findings are usually seen in all of the nerve root cysts. So a definitive diagnosis must be supported by the surgical findings and histopathological diagnosis.

Magnetic resonance imaging was found more specific than computed tomography with myelogram in identifying the intradural arachnoid cyst and its communication with the dural sac (4).

There is no agreement on the appropriate management of the spinal nerve root cyst. Surgery is reserved for large cyst that causes either pain or neurological deficit or both. Bony decompression, complete excision, partial excision with obliterating the cystic cavity have been reported successfully (1,7,9,10,11,12).

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