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(CASE REPORT)

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Baastrup's disease (kissing spines syndrome) old but often missed etiology for back pain

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Abstract

Background: Baastrup's disease or "kissing spines syndrome" was first described in 1933 as a cause of postural back pain, which was thought to be related to the adjacent 'kissing' of the spinous processes. The diagnosis was based on 'symptoms' of positional back pain with extension, and plain radiographs showing close approximation of the spinous processes.

The aim: Baastrup's disease is overwhelmingly underdiagnosed and often missed due to a lack of knowledge and/or improper diagnostic techniques, leading to frequent mistreatment. A case of Baastrup's disease is reported.

Case report: 70-year-old patient, with a 4 years history of back pain presented a severe neurogenic claudication for a year. Neurological evaluation was normal. Extension of the lumbar spine exaggerates the pain. Locally the pressure of the spinous processes shows a painful point located next to L4-L5. Lumbar CT scan showed a typic "kissing posterior spinous processes" associated with disc space narrowing at multiple levels especially L4-5 and L5-S1. The patient underwent a decompressive laminectomy. A neoarticulation with synovial structure was noted, between L4 and L5 spinous process. Postoperative was unremarkable with good results after two months physiotherapy program.

Conclusion: Baastrup´s syndrome is more common in the lumbar spine with L4-L5 being the most affected region. Baastrup's disease is a part of dynamic degenerative process. Management must be adapted to clinical and radiological findings. Medical treatment can be conservative or surgical and an accurate diagnosis of the disease is necessary for determining appropriate treatment. If the predominant symptoms are related to neurogenic claudication or radiculopathy, surgical decompression or stabilization may be necessary.

Keywords: Lumbar Back pain; Lumbar computerized tomography scan; Kissing spines; Neoarthrosis; L4-L5 lumbar; Baastrup's disease; Surgery

1. Introduction

Baastrup's disease or "kissing spines syndrome" was first described as a cause of lumbar pain before computerized tomography (CT) and magnetic resonance imaging (MRI) scanning existed. The diagnosis was based on x-ray studies, which showed that the spinous processes, especially in the lower lumbar spine, became approximated to each other and this was a generator of positional back pain [1,2,3].

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Though fairly common, Baastrup's disease is overwhelmingly underdiagnosed and often missed due to a lack of knowledge and/or improper diagnostic techniques, leading to frequent mistreatment [1,2,3,4]. A case of Baastrup's disease is reported.

2. Case report

70-year-old patient, with a history of arterial hypertension and type 1 diabetes, who has been consulting for stubborn low back pain for 4 years. The patient recently reported intermittent neurogenic claudication for a year. The walking distance is 300 meters. The neurological examination does not show any sensorimotor deficit. The Lasegue test was negative bilaterally. Extension of the lumbar spine exaggerates the pain. Locally the percussion / pressure of the spinous process shows a painful point located next to L4-L5. Somatic examination showed no abnormalities. Lumbar CT scan in sagittal view shows the close approximation and hyperostosis seen with the lumbar spinous processes of L4-L5. Lumbar CT scan showed a typic kissing posterior spinous processes. Also shown is associated, disc space narrowing at multiple levels especially L4-5 and L5-S1. Routine blood test was normal. Blood Phosphocalcic dosage were normal. Preanesthetic evaluation showed no abnormality.

The patient underwent a decompressive laminectomy in genu pectoral position. In peroperative a neoarticulation with synovial structure was noted, between L4 and L5 spinous process (Figure 1. C, D and E). The postoperative was unremarkable. A 2 months physiotherapy program was made. The neurogenic claudication was very ameliorated and residual back pain was tolerable. With 2 years follow-up he was very satisfied and feeling good.

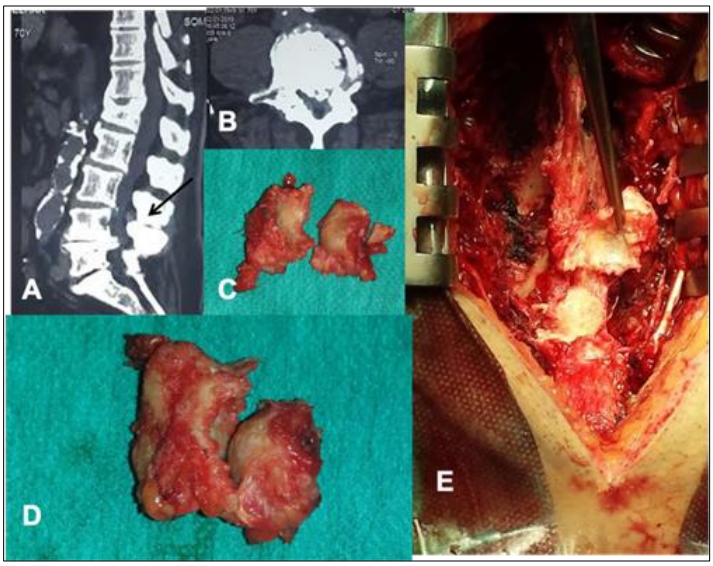

Figure 1 (A) Lumbar sagittal computerized tomography scan shows the close approximation and common hyperostosis seen with the lumbar spinous processes of L4-L5 (Black arrow). Also shown is associated disc space narrowing at multiple levels especially L4-5 and L5-S1 'vacuum' phenomenon characteristic of advanced disc degeneration in L5-S1 level. (B) lumbar CT scan in axial view showing lumbar canal stenosis. (C, D, E) Peroperative view of lumbar spine approach showing the neoarticulation with synovial, between the spinal process of L4 and L5. Baastrup's disease or "kissing spines syndrome"

3. Discussion

Baastrup's disease was first described in 1933 as a cause of postural back pain, which was thought to be related to the adjacent 'kissing' of the spinous processes [1]. The diagnosis was based on 'symptoms' of positional back pain with extension, and plain radiographs showing close approximation of the spinous processes [2,3].

Baastrup's disease or "kissing spine disease" is a relatively common disorder of the vertebral column, characterized by low back pain arising from the close approximation of adjacent, posterior spinous processes and resultant degenerative changes. Baastrup's disease leading to neoarthrosis formation with synovial cavity and causing low back pain has been reported previously. Baastrup's disease is not a disease entity by itself; rather it is a result of mechanical changes in the

interspinous and supraspinous ligaments, degenerative lumbar discs, and facets with interspinous bursas, osteophyte formation, and spondylosis [2,4,5].

Exceptionally an extension of the synovial cavity to the intraspinal space resulting in extradural compression was reported. The cyst can enter into the epidural space through the midline cleft of the ligamentum flavum to result in extradural compression [1].

The histology reports of neoarticluaion showed the composition to be a collagen matrix mass with peripheral inflammation. The Baastrup's cyst may change over time becoming more fibrous [2,4,6]. Kwong, et al. [7] performed radiologic retrospective review of 1008 CT scans and found that 41% had evidence of Baastrup's disease, most commonly at L4-5, and the frequency of this finding increased with age and also became multilevel. They concluded Baastrup's disease was part of the expected spinal degenerative changes with age and urged caution before diagnosing Baastrup's disease as the sole cause of back pain. A study with the use of interspinous distraction and stabilizing devices clearly demonstrated that stabilizing the interspinous space leads to cyst resolution and symptomatic relief, suggesting that cystic degenerative changes are a reaction to the instability resulting from deterioration and laxity of the degenerative interspinous ligament [1-5].

Clinically: If the patients are symptomatic in 'classical' Baastrup's disease they only have positional and very localized midline back pain [1-3]. Patients present with symptoms of either localized back pain worse with extension (i.e., typical Baastrup's disease), or more generalized back pain secondary to either facet degeneration or associated with symptoms due to spinal canal compression. The pain is described as midline, in the lumbar region, and with radiation along the spine but not laterally. Symptoms are relieved with spinal flexion and aggravated by extension, and the pain can be elicited clinically by palpation of the affected interspinous space.

Radiologically: Lumbar CT scan is suitable for visualizing these bony changes and may also show generalized degenerative changes in greater detail; however, neither CT nor plain films are suitable for demonstrating pathological changes in the soft tissues of the spine. Frequently, Baastrup's disease is missed due to lack of knowledge and overexposure of the spinous processes. Baastrup disease was defined as present if the following two accepted radiographic criteria were present on CT scans: first, close approximation and contact between apposing spinous processes and, second, sclerosis of the superior and inferior portions of adjacent processes.

MRI is the most sensitive imaging modality for detecting Baastrup's disease and may do so much earlier in the disease course. MRI scans reveal a spectrum of abnormalities in the interspinous ligament from fluid cystic change, thickening of the adjacent ligamentum flavum, and anterolisthesis of the involved vertebrae [5]. There was often multilevel disease on MRI. It has been noted that interspinous bursitis may precede the more pronounced osseous changes of the spinous processes, which MRI is the best suited for detecting. The bursae appear as bright, high-intensity areas on T2-weighted MRI, between posterior spinous processes [5]. Additionally, MRI may show reactive sclerosis and hypertrophy of the spinous processes which may have flattened and enlarged articulating surfaces, may show associated edema at the level of the interspinous ligament, and provides insight into the degree to which the posterior thecal sac is compressed [1,4,5].

Baastrup's disease is a part of dynamic degenerative process. Management must be adapted to clinical and radiological findings. Medical treatment can be conservative or surgical and an accurate diagnosis of the disease is necessary for determining appropriate treatment.

Local infiltration with radiofrequency ablation can help to relief back pain. Okada et al. [6] suggested a positive result in the long-term effects of injections of steroid and local anesthetics into the interspinous ligaments for the treatment of Baastrup's disease.

The use of interspinous distraction and stabilizing devices clearly demonstrated that stabilizing the interspinous space can leads to amelioration or resolution symptomatic patients. Suggested surgical therapies include: excision of the bursa, partial or total removal of the spinous process, or an osteotomy. If the predominant symptoms are related to neurogenic claudication or radiculopathy, then surgical decompression or stabilization may be necessary [4,6].

4. Conclusion

Baastrup syndrome is more common in the lumbar spine with L4-L5 being the most affected region. People who are most likely to suffer from Kissing Spine are particularly elderly patients with a degenerative disc disease. Typically, Baastrup's disease became the most likely diagnosis when considering the relief of back pain with flexion, and

exacerbation with extension of the spine. Baastrup's Disease (kissing spines syndrome) is an old but often missed etiology for back pain.

Compliance with ethical standards

Disclosure of conflict of interest

The authors have declared that no conflicts of interest exist.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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