



Kissing Spine of Baastrup Syndrome: Is there Surgical Treatment?

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Abstract

Aim: Baastrup's disease ("Kissing spine" or interspinous osteoarthritis) is a rare cause of low back pain and a peculiar variety of axial osteoarthritis. It is more prevalent in the elderly with no difference between sexes.

Methods: We performed a retrospective study in patients older than 75 years diagnosed with Baastrup Syndrome.

The series was composed of 15 patients operated on at the Virgen del Consuelo Hospital of the Vithas group in Valencia, Spain, the predominant symptom was lumbar pain.

The variables studied were age, sex, symptoms, location, major comorbid conditions, and radiographic classification by fluoroscopy.

Surgical technique was used (Interspinous U device), we used the Oswestry index and visual analogue scale of pain as evaluation instruments.

Results: The Oswestry index and visual analog scale pain showed significant improvement in postoperative and obtained 95% of excellent results.

Conclusion: After the evaluation of the results together with the satisfaction of the patients, we can show. That this surgical technique plays a very important role in a selected group of patients who do not find improvement in their pain with conventional techniques.

Keywords: Baastrup Syndrome; kissing spine; MIS technique; U device

Introduction

Baastrup Syndrome is a little known, although not excessively rare, cause of low back pain. The genesis of pain attributable to Baastrup's disease can be explained in two ways: Irritation of the adjacent cortices and distention of the inter apophyseal bursa, which in some cases can separate the affected cortical surfaces.

There is no agreement on its approximate prevalence, there are series that establish it between 8.2% [1] and 41% [2]. Studies epidemiological studies carried out on large volumes of tomography CT scans describe a prevalence of 81.3% in patients older than 80 years [2].

It was described by Baastrup in 1933, in a series of veteran soldiers [3]. It is a condition in which the spinous processes neighbors approach each other [3,4]. From the point of view Radiologically, Baastrup's disease is characterized by: Sclerosis of the surfaces in contact, flattening and hypertrophy of the processes prickly [5]). This occurs most frequently among third, fourth and fifth lumbar vertebrae.

Baastrup's disease is associated with the presence of stenosis of canal, disc bulges and anterolisthesis. That is why it is difficult to attribute low back pain exclusively to this entity. The genesis of pain attributable to Baastrup disease can be explained by two ways: Irritation of the adjacent cortices and distention of the inter apophyseal bursa, which in some cases can separate the affected cortical surfaces [6,7]). These theories are not completely accepted as it has been observed that the removal. Surgical removal of the affected spinous processes does not contribute significantly to pain relief in these patients [8]. Exceptionally Baastrup disease may be complicated by fractures of the spinous processes involved. This rare complication counts as a third etiology of low back pain in these patients [9-11].

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Interspinous osteoarthritis is a little known, although not excessively rare, cause of low back pain caused by the development of a pseudoarticulation between the lumbar spinous processes. The degeneration or rupture of the interspinous ligament seems to be a key process in the development of these degenerative phenomena that can be accompanied by the formation of adventitial bursae.

Indeed, interspinous osteoarthritis can be accompanied by the formation of adventitial bursae-bursitis is the inflammation or irritation of fluid-filled bags, called bursae, which are located in some places where there are friction points, such as muscles, tendons or the bones.

Patients frequently have acute and repeated crises of low back pain. The symptomatology increases progressively as the disease progresses, becoming almost constant and appearing in any movement or load of the lumbar region, with the consequent limitation of movements – especially flexion and extension – in the area.

From the radiological point of view, Baastrup Syndrome is characterized by: Sclerosis of the surfaces in contact, flattening and hypertrophy of the spinous processes.

The aforementioned changes in bone surfaces can be seen on X-rays of the spine or other imaging tests, such as Computed Axial Tomography (CAT).

Baastrup's disease is frequently associated with the presence of canal stenosis, bulging discs and anterolisthesis; For this reason, diagnosis based on the clinical picture is more difficult, as the symptoms of low back pain cannot be attributed exclusively to this entity.

In the cause of Baastrup's disease, the presence of a notable increase in lumbar lordosis seems essential, regardless of the causes for which the latter is produced.

The decrease in the radius of lumbar curvature formed by the vertebral bodies, produced by an increase in lordosis, brings about an approximation of the posterior part of the vertebrae, reaching contact between the spinous processes, which favors the appearance of the process: Friction between its edges causes the appearance of new joint surfaces, secondarily forming the cartilage that covers them, the capsule and even the synovium.

If frequent, sudden and repeated movements of hyperextension of the lumbar spine are added, then direct bone contact occurs, which normally the spinous ligaments would cushion between the apophyses, predisposing to new tears, crushing and low back pain crises.

Likewise, the degeneration or rupture of the interspinous ligament seems to be a key process in the development of the degenerative phenomena observed in Baastrup Syndrome.

Age is not the only factor responsible for the evolution of Baastrup syndrome. Other suggested risk factors are:

- Excessive lordosis causing increased mechanical pressure.
- Repetitive sprains of the interspinous ligament with subsequent degeneration and collapse.
- Wrong posture.
- Traumatic injuries.
- Tuberculous spondylitis.

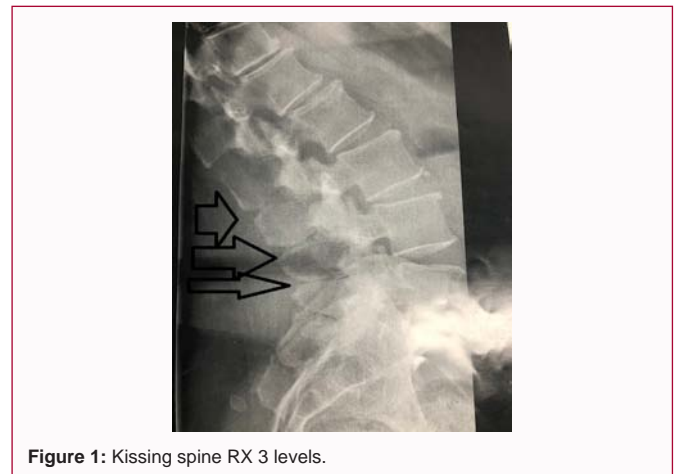


Figure 1: Kissing spine RX 3 levels.

- Bilateral forms of congenital hip dislocation.
- Stiffness of the thoracic spine or thoracolumbar transition.
- Obesity.

Concluding that Baastrup syndrome is more common among older people, but this does not exclude the incidence in younger individuals. The effect of gender is still unknown, so more research is needed.

Methods

We performed a retrospective study in patients older than 75 years diagnosed with Baastrup syndrome Figure 1.

The series was composed of 15 patients operated on at the Virgen del Consuelo Hospital of the Vithas group in Valencia, Spain. The predominant symptom was lumbar pain.

The variables studied were age, sex, symptoms, location, major comorbid conditions, and radiographic classification by fluoroscopy.

Surgical technique was used (Interspinous U device) Figure 2, we used the Oswestry index and Visual Analogue Scale of pain as evaluation instruments.

Results

The predominant symptom was Lumbar pain (Figure 3). The Oswestry index and visual analog scale pain showed significant improvement in postoperative and obtained 95% of excellent results.

Discussion

The cause of the pain is described as mechanical due to contact of neighboring spinous processes. The pain worsens with hyperextension or increased lordosis that can be seen in obese patients with limited hip movements.

Baastrup syndrome can occur independently or in conjunction with symptoms of other disorders, such as spondylolisthesis and spondylosis with osteophyte formation and loss of disc height.

Characteristics of Baastrup syndrome

Patients with Baastrup syndrome often show excessive lordosis. This results in mechanical pressure that can cause pain and repetitive stress combined with subsequent degeneration and collapse.

Patients often complain of back pain, more specifically, midline



Figure 2: Device (U) *in vivo*.



Figure 3: 3 Levels after surgery.

pain radiating distally and proximally, which increases with extension and decreases with flexion.

This abnormal contact between adjacent spinous processes can lead to nearthrosis and the formation of an adventitious pocket. It can be seen pathologically on MRI.

Other features may be tenderness at the level of the pathological interspinous ligament, edema, cystic lesions, sclerosis, flattening and enlargement of the joint surfaces, and bursitis.

Occasionally, midline epidural cysts or fibrotic epidural masses may also appear.

Rotation and lateral flexion are usually painful, with flexion being the least painful of all lumbar movements. Bastrup's disease can result in intraspinal cysts secondary to interspinous bursitis which, in rare cases, can cause symptomatic spinal stenosis and neurogenic claudication.

Baastrup syndrome cannot be diagnosed simply by evaluating the lumbar spine, imaging modalities are required to avoid misdiagnosis. Numerous radiographic methods can be used to determine a diagnosis of Baastrup syndrome.

If necessary, different methods can be combined to obtain a more detailed image of the degenerative and inflammatory signs at the level of the interspinous ligament.

Diagnosis with Computed Tomography (CT)

It is diagnosed if 3 criteria appear on a CT scan:

- Close approximation and contact between touching the lumbar spinous processes.
- Flattening and widening of the articulated surfaces.

- Reactive sclerosis of the upper and lower fragments of adjacent processes.

CT scans can also report detailed degenerative changes (e.g., facet joint hypertrophy, intervertebral disc herniation, or spondylolisthesis).

However, this type of diagnostic procedure is limited in evaluating disc degeneration and soft tissue imaging, meaning that the interspinous bursae cannot be seen.

Diagnosis with radiography (X-rays)

X-rays are analogous to CT scans. X-rays are cheaper, more readily available, and give a relatively low dose of ionizing radiation.

The disadvantage of radiographic images is the poor quality of the images, particularly in the lower lumbar fragments.

Diagnosis with Magnetic Resonance Imaging (MRI)

Unlike CT scans, an MRI can detect interspinous bursal fluid and a posterocentral epidural cyst in the opposing spinous processes.

Lumbar interspinous bursitis is diagnosed when there is bursal fluid between two affected opposing spinous processes.

Similar to a CT scan, MRI shows any flattening, sclerosis, enlargement, cystic lesions, and bone edema on the articular surfaces of the spinous processes.

This type of diagnostic procedure is extremely beneficial in determining if there is compression of the posterior thecal sac as a result of this contact of the interspinous processes.

Other advantages of magnetic resonance imaging also include the absence of ionizing radiation and a highly detailed image at various levels (axial, coronal, and sagittal).

Medical treatment can be conservative or surgical, and an accurate diagnosis of the disease is necessary to determine the appropriate treatment. When an MRI shows active inflammatory changes or edema, localized injections may be tried. If the injections do not improve the patient's symptoms, surgical treatment is recommended.

Non-surgical treatment consists of localized injections of analgesics or NSAIDs, which can be administered fortnightly. During this treatment period, extension movements of the lumbar spine should be avoided.

After local anesthesia of the skin and subcutaneous tissues, the injection is administered into the painful interspinous ligaments between the affected spinous processes under fluoroscopic control.

Studies suggest a positive long-term effect of steroid and local anesthetic injections into the interspinous ligaments for the treatment of Baastrup's disease.

Suggested old surgical therapies include: excision of the bursa, removal of part or all of the spinous process, or an osteotomy. These invasive therapies occasionally have unsatisfactory results and numerous patients have been reported to develop pain after surgery.

New techniques are interspinous spacer devices such as an X-Spot or U device. The device is inserted to increase the distance between the spinous processes and the intervertebral foramen. This procedure is simpler and less invasive than other techniques.

Conclusion

Our results obtained in the 15 patients carried out have been

excellent, all of them have improved their lumbar pain, many have obtained an improvement in walking by improving their lumbar pain process.

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