

## Baastrup's disease: The kissing spine

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### Back pain

**Core tip:** Baastrup's disease, although not a rare entity, is often misdiagnosed and wrongly treated due to poor knowledge. Complete evaluation and a detailed examination of radiographic images are crucial for a proper diagnosis and to avoid mismanagement of the condition, including a hasty surgical intervention.

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### Abstract

A 67-year-old male presented with a gradually progressive low back pain of 2 years duration. The patient was leading a retired life and there was no history of chronic fever or significant trauma. There was no radiation of pain or any features suggestive of claudication. There was no history of any comorbidity. The pain was aggravated with extension of the spine and relieved with flexion. There was no swelling or neurological deficit, but muscle spasm was present. Radiographs of the spine revealed degenerative changes in the lumbosacral spine, along with articulation of spinous processes at in lumbar spine at all levels level suggestive of Baastrup's disease, commonly known as "kissing spine". Routine blood investigations were within normal limits. The patient was managed conservatively. He was given a week's course of analgesics and muscle relaxants and then started on spinal flexion exercises, with significant improvement being noted at 6 months follow up.

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**Key words:** Baastrup's disease; Neoarthrosis; Spinous process; Kissing spine; Osteophytes; Low back ache;

### INTRODUCTION

Baastrup's disease (kissing spine) is a relatively common entity characterized by degenerative changes of spinous processes and inter-spinous soft tissues. It involves the formation of hypertrophic spinous processes, an important cause of mechanical back pain, and accompanying degenerative disc disease. Most of the cases previously described in the literature were managed either surgically or with fluoroscopy image guided steroid injections. To the best of our knowledge, this is the first case showing significant improvement with only conservative management.

### CASE REPORT

A 67-year-old male presented with gradually progressing low back pain of 2 years duration. The pain was aggravated with extension of the spine and relieved with flexion. There was no evidence suggestive of radiation of pain or any clinical features suggestive of claudication. The patient had no additional comorbidity. There was no history of chronic fever or significant trauma. Radiographs of the spine revealed degenerative changes involving the lumbosacral spine, along with articulation of spinous processes at at multiple levels level (Figure 1),



**Figure 1** Radiographs of lumbar spine in anterior-posterior and lateral views showing Baastrup's disease at multiple lumbar level.

commonly known as “kissing spine” and strongly suggestive of Baastrup's disease in the absence of any other features. The patient was managed conservatively with muscle relaxants and analgesics for one week and, once the pain subsided, was started on physiotherapy with spinal flexion exercises. The treatment plan involved conservative management with a close follow up. The option of intralesional steroid injections and bursal excision was to be considered if conservative treatment failed. The patient was monitored at the outpatient department at regular intervals and at 6 mo follow up was found to have significant improvement with physiotherapy alone and hence was asked to continue the exercises.

## DISCUSSION

This condition was first described as a neoarthrosis between adjacent spinous processes by Mayer<sup>[1]</sup>. Brailsford<sup>[2]</sup> demonstrated the same entity and labeled it “kissing spines”. Baastrup<sup>[3]</sup> described this condition again in detail and subsequently this condition came to be known as Baastrup's disease. It was noted clinically in 6.3% of college athletes<sup>[4]</sup>, most commonly gymnasts, and was thought to be related to the repetitive flexion and extension attributed to the sport. In a recent study by Kwong *et al*<sup>[5]</sup>, Baastrup's disease was found in 413 (41.0%) patients (diagnostic criteria being close approximation and contact between apposing spinous processes and sclerosis of the superior and inferior portions of adjacent processes on computed tomography) with an incidence of 81.3% among patients older than 80 years, whereas Maes *et al*<sup>[6]</sup>

reported an overall incidence of 8.2% with the presence of a bursa between spinous process as a diagnostic criteria based on magnetic resonance imaging.

Two cohort studies have demonstrated conflicting reports of clinical improvement following surgical intervention. This included one early study of 10 patients by Franck<sup>[7]</sup> in 1944 in which the patients undergoing surgical excision of the spinous process for Baastrup's disease demonstrated improvement. A later study by Beks *et al*<sup>[8]</sup> in 1989 in which 64 patients who underwent either partial or total surgical excision of the lumbar spinous processes demonstrated that surgery does not always alleviate the patient's pain. Their research suggested that “kissing spine” might not be a disease entity itself but an additional pathology, specifically spondylosis with osteophyte formation. A case has been reported of atrophy and fatty replacement of the paraspinal musculature in a patient with Baastrup's disease on X-ray<sup>[8]</sup>. Pain can be attributed to multiple factors in Baastrup's disease, including mechanical pain secondary to the hypertrophic spinous processes coming into contact with each other, secondary to degenerative disc disease, and interspinous bursal fluid collections extending through the ligamentum flavum, leading to central canal stenosis<sup>[9]</sup>. In 2004, Pinto *et al*<sup>[10]</sup> reported 2 cases of spinous process fractures in patients with Baastrup's disease and proposed that close proximity of the spinous processes resulted in its fracture and hence pain. Management includes decompression and posterior spinal instrumentation surgery or fluoroscopically guided interspinous steroid injections<sup>[11]</sup>.

In conclusion, Baastrup's disease is not a rare cause of back pain in the elderly but it is frequently missed on radiographs due to lack of knowledge about the disease on the part of physician and overexposure of spinous processes in most X rays. Most of the management suggested in the literature is invasive, *i.e.*, surgery or intralesional injections. However, conservative management can also produce good results. Hence, it is imperative that the treating physician must attempt a conservative line of management before moving onto invasive modalities. Since this condition is one of the few treatable causes of back pain in the vast spectrum of spinal conditions, one must be aware of the condition to correctly diagnose and institute a line of treatment most beneficial to the patient.

## COMMENTS

### Case characteristics

A 67-year-old male presented with a gradually progressive low back pain of 2 years duration.

### Clinical diagnosis

Baastrup's disease is not a rare cause of back pain in elderly, with pain aggravated on extension and relieved on bending forward.

### Differential diagnosis

Common differential diagnoses include lumbar spondylosis, muscle strain, spondylolisthesis, fracture of the spinous process, vertebral compression fractures and infectious etiologies of the spine.

### Imaging diagnosis

Radiographs showing articulation of spinous processes, *i.e.*, the kissing spine.

**Peer review**

The authors present a nice case report.

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