

Bertolotti Syndrome: Pathology of the Young and Active Subject Often Unknown: About a Case and Review of the Literature

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Abstract

Case Report

Bertolotti's syndrome is a disease characterized by lumbar pain and/or fessalgia secondary to the presence of a mega-transverse process of the last lumbar vertebra, which articulates with the sacrum and / or iliac wing. The diagnosis is easy based on clinical and standard radiographs, but raises therapeutic problems because of the possibility of recurrence of pain even after a well-adapted treatment by infiltration or surgical resection and / or arthrodesis.

Keywords: Mega-transverse process; back pain; fessalgia; standard radiographs; infiltration; excision ; arthrodesis.

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INTRODUCTION

Bertolotti syndrome, described in 1917, corresponds to the occurrence of lumbar or gluteal pain, induced by the presence of a transverse mega-apophysis of the last movable vertebrae that comes into contact with the sacrum and/or the iliac wing, sometimes forming an equivalent of a "third sacroiliac" joint space [1].

CASE PRESENTATION

We report a case of a 28-year-old soldier with no significant pathological history, who has been suffering 2 years ago from unilateral low back pain with homolateral gluteal irradiation, treated symptomatically with analgesics and nonsteroidal anti-inflammatory drugs (NSAIDs), with little improvement. On clinical examination, the pain was reproduced by right lateral flexion of the hip, absent on the left side, and by the right axial rotation of the dorsolumbar spine on a fixed pelvis. Lumbar flexion and squat were normal. Posture and walking without anomalies. The neurological

examination revealed no sensory-motor deficit, the osteo-tendinous reflexes were normal. Neither palpation nor passive stretching of the right pyramidal muscle reproduces pain. The sacroiliac joint provocation tests were negative, namely abduction flexion and external rotation of the pelvis (Fabre), Gaenslen in latero-ulnitus, and compression tests. The standard radiograph of the pelvis of the face has objectified a lumbar-sacral transitional vertebra with a right transverse mega-apophysis of the fifth lumbar vertebra (L5), articulating with the sacral wing (Figure 1). A computed tomography (CT) complement revealed the presence of a right transverse-sacral neo-articulation of the fifth lumbar vertebra without osteophytes or associated disc herniation (Figures 2 and 3). Our patient was treated with scano-guided cortisone infiltration the evolution was marked by significant relief after eighteen months and then the patient was enrolled in a physical rehabilitation program allowing him to be able to perform its service.



Fig-1: Standard X-ray of the pelvis showed a lumbosacral transitional vertebra with a transverse right mega-apophysis of the fifth lumbar vertebra (L5), articulating with the sacral wing



Fig-2, 3: A CT scan in coronal section revealed the presence of a right transverse-sacral neo-joint of the fifth lumbar vertebra without osteophytes or associated disc herniation

DISCUSSION

Described since 1917 by Mario Bertolotti [1, 2], this generally asymptomatic syndrome [3], affects 5 to 7% of the population, and represents 10% of low back pain in young people under thirty years of age. Revealed by lumbar (50%) and gluteal (50%) pain [5] with sometimes irradiation along a sciatic [6]. The authors proposed two mechanisms to explain Pain: A direct mechanism that is related to suffering to suffering of neoarticulation. The fixings detected in scintigraphy against these neoarticulations in 80% of the cases, could be arguments in favour of this hypothesis [4, 5]. Some authors who are in favour of an indirect mechanism by premature wear and tear of the immediately overlying disc due to either an asymmetrical play of it [8], or a bad locking by the iliolumbar ligaments. In the study by Aihara *et al.* on 70 carrier corpses of such a neoarticulation, the iliolumbar ligament was effectively much thinner and weaker on the side of the malformation [13].

The diagnosis is confirmed by standard radiography. CT allows an evaluation of the vertebral transition and guides the local infiltrations [5]. While scintigraphy and the single position computed tomography (SPECT-CT) [7] may reveal a pain in the

articular facets [8]. First-line therapy is essentially symptomatic, based on NSAIDs and physical rehabilitation [9]. Infiltrations of scopic or scano-guided corticosteroids may be indicated, they induce short-term relief, in ten cases out of twelve according to the experiment of Avimadie *et al.* With nine patients still being relieved by more than 50% One month and seven after more than six months [5]. In our case, significant relief was reported over a period of eighteen months. Other treatments may be proposed, such as anesthetic blocks and conventional radiofrequency neurolysis, with temporary reliefs [10]. In rebel cases, where the belief that the pain starts well from neoarticulation, excision of the mega-apophysis have been shown to be effective or even very effective in some isolated cases [11]. In cases where hypermobility of the overlying disc is supposed to account for the symptoms, arthrodesis can be proposed. The largest published series focused on out of 16 cases, including eight treated with posterolateral arthrodesis between the transverse and the sacrum, and eight by resection of the mega-apophysis. A good result was achieved in ten of the 16 cases, with no differences between the arthrodesis or exeresis [12]. The results were not perfect in general, because 11 of the 13 patients seen at a distance from the surgery still suffered from intermittent sciatica [12].

CONCLUSION

Bertolotti's syndrome is often overlooked by clinicians and should be borne in mind in the presence of all mechanical low back pain in young and active patients, whose diagnosis is easily confirmed by a standard radiograph, but which still poses a therapeutic problem. Requires more randomized controlled studies to establish an effective therapeutic protocol.

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