

Transition anomalies at the lumbosacral junctions

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Introduction

Transition anomalies at the lumbosacral junction are frequent problems in spinal practice [4, 6–8, 10]. Sometimes it is difficult to correlate the clinical symptomatology with the actual spinal morphology at this anatomical location. Many of these transition anomalies, like incomplete lumbalisation, incomplete sacralisation, combined or not with spondylolisthesis or spondylolysis or spina bifida occulta or dysplastic joints, do not really represent a problem in younger patients [2, 3, 5, 14, 15]. As degenerative changes occur over the years, some of these anomalies may become significantly painful and, specifically in people who have to work physically, this may be the reason for inability to work under certain conditions [1, 16].

Case description

In this film, we present a case of a 50-years-old male patient who works as a heavy labourer in the construction

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business. Since several years he has experienced increasing low back pain as well as pain in both hips, which has become so severe over the last few months before the surgery that he was unable to work. He has a transition anomaly at L5/S1 with a L5 vertebra, which is deeply sitting in the pelvis with an incomplete sacralisation, meaning that the big transverse processes of L5 were almost in touch with the massa lateralis of S1. This segment is poorly mobile—on one side due to its location in relation to the pelvis and the sacrum and on the other side due to severe facet joint arthritis. In consequence, most of the load at the lumbosacral junction most probably goes through the joint L4/5 with a secondarily degenerated and narrowed disc at L4/5 as well as facet joint degeneration at this level.

The workup of this patient included the usual imaging, like conventional X-rays, CT scan as well as MRI and he had selective facet blocks of the joints L5/S1 as well as L4/5 [1, 7, 9, 11–13]. Those facet blocks led to a temporary relief of the pain. In addition to this spinal pathology, the patient also has a beginning coxarthrosis on both sides with a coxa vara. In exchange with the hip surgeon it has been decided that first the spinal problem should be treated and that it is very highly possible that later on the patient will also need hip surgery. It was clear that even after surgery was done, the patient could not go back to the heavy physical work and a retraining for a lighter profession was part of the treatment plan.

Surgical procedure

The purpose of this surgery is to immobilise the painful lumbosacral junction, including the segments L4/5, L5/S1. Since the segment L5/S1 seems to be very rigid and the

facet joints severely degenerated, there was no intention to mobilise this segment and to do an interbody fusion in conjunction with the posterior fusion. However, the segment L4/5, which demonstrates a severely degenerated disc, with narrowing of the disc space and air inclusion, should be immobilised with a circumferential fusion by excising the pathological disc, performing a TLIF fusion and finally a posterior pedicular fixation from L4 to S1 with a posterolateral fusion. The spinal canal should be opened to make sure that the exiting roots of L5 and S1 are free.

Postoperative information

The postoperative course was uneventful. There was no neurological deficit and the patient was entered in a rehab program for muscle relaxation as well as isometric build-up of muscles. Parallel to this, he had a re-education for a lighter work. The back pain has significantly improved but it seems that very soon the patient may need hip surgery in addition. As soon as the patient is doing any physical effort, this pain in the back increases. A lot of this back pain may be related to massively contracted muscles around the pelvis.

Discussion and conclusion

The controversy, whether these transition anomalies, when complicated by secondarily degenerative changing, should be operated on or not, is ongoing [10, 14, 15]. Most probably, with surgery, the muscular contraction in the context with these severely degenerated lumbosacral spine is more severe than it can be treated with a fusion surgery. However, there are very little alternatives to deliberate these patients from their suffering. Most of the time, the non-surgical treatment does not deliberate the patients from their daily pains.

Conflict of interest None.

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