

RETROLISTHESIS

Although numerous reports on spondylolisthesis exist in the literature, little attention has been paid to retrolisthesis because it was regarded as a rare and insignificant condition.

Recent studies have, however, shown that it may exist more commonly than was previously believed and with significant symptoms. It has been reported .[*J Spinal Disord Tech* 2002;15:93–99.] 83 cases (2.6%) of degenerative retrolisthesis among 3259 outpatients with low back pain. Their series included 39 patients with a single-level retrolisthesis, 25 with multilevel retrolisthesis and 19 with a retrolisthesis combined with an anterolisthesis

In a recent study of 269 consecutive patients with a degenerative spondylolisthesis [*Bone Joint J.* 2013 Sep;95-B(9):1244-9], identified 106 patients (39.4%) with a pure retrolisthesis, 130 (48.3%) with a pure anterolisthesis, and 33 (12.3%) with a combined retrolisthesis and anterolisthesis.

The presence of retrolisthesis has been associated with the degenerative changes of the lumbar spine. However, retrolisthesis in patients with L5–S1 disc herniation has not been shown to have a significant relationship with worse baseline pain or function.

A recent study [*Spine J.* 2013; 13(4):367-72.] was to determine the relationship between retrolisthesis (alone or in combination with other degenerative conditions) and postoperative low back pain. 125 patients over 4 years after surgery was assessed. Retrolisthesis was defined as a posterior subluxation of 8% or more. Disc degeneration was defined as any loss of disc signal on T2 imaging. Modic changes were graded 1 to 3.

Patients with retrolisthesis did significantly worse with regard to bodily pain and physical function over 4 years. However, there were no significant differences in terms of ODI or SBI.

Disc degeneration, modic changes, and posterior degenerative changes did not affect the outcomes. Although retrolisthesis in patients with L5–S1 disc herniation did not affect the baseline pain or function, postoperative outcomes appeared to be somewhat worse. It is possible that the contribution of pain or dysfunction related to retrolisthesis became more evident after removal of the disc herniation.

In the previous study [*Spine J.* 2007; 7:406–413] examining preoperative patient function, there was no significant relationship between retrolisthesis in patients with L5–S1 disc herniation and worse baseline pain or function. Retrolisthesis was also not associated with an increased incidence of having degenerative disc disease, posterior degenerative changes, or vertebral end plate changes.

Investigations of white [*Spine.* 1998; 23:2640–2647] and African American [6] women both concluded that retrolisthesis was associated with a higher likelihood of low back pain. Although once believed to be a benign finding, it is becoming more apparent that retrolisthesis can be a source of morbidity for patients.

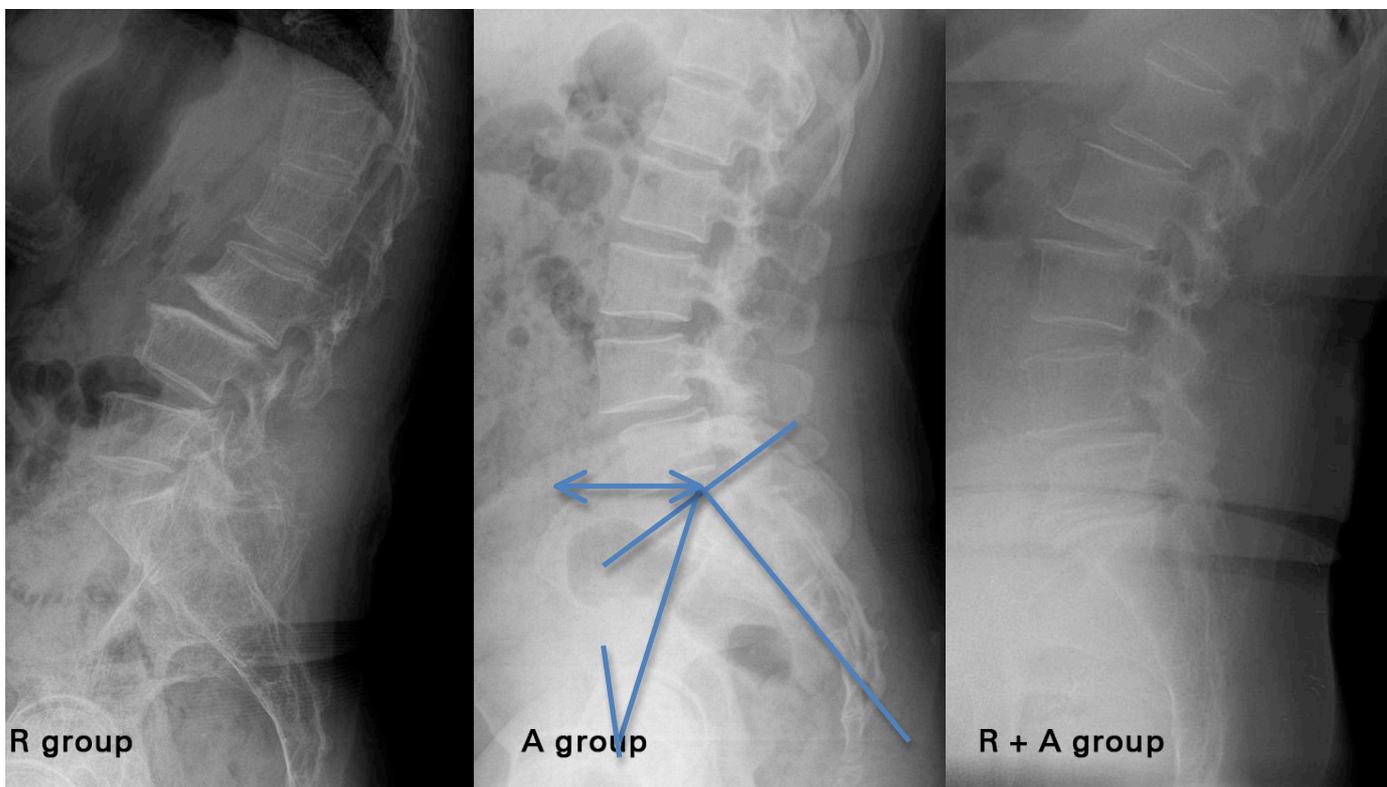
The postoperative data shows that with time, the effects of retrolisthesis may be clearer. Although there is no appreciable difference at the first follow-up of 3 months, at 1 year patients with retrolisthesis exhibited greater bodily pain that continued through the 2-year and 4-year follow-up points. It is possible that after the removal of the offending disc and recovery from the actual lumbar discectomy procedure, **pain caused by retrolisthesis was no longer overshadowed.** Similarly, physical function was significantly worse in retrolisthesis patients at the 2-year mark.

Overall complications were also unaffected by retrolisthesis. It was once believed that the presence of retrolisthesis in discectomy patients meant a higher likelihood of recurrent herniation and repeat surgery. Similar to patients with spondylolisthesis, fusion after discectomy was considered at times to provide greater stability to the involved vertebral segments. However, our study failed to show any correlation between retrolisthesis and increased rates of complications up to 4 years after surgery.

It is not known why in some degeneration Retrolisthesis and other's Anterolisthesis: some anatomic factors has been observed [Acta Orthop Belg. 1999 Dec;65(4):472-7]. In a retrolisthesis: a retrolisthesis of a lower lumbar spine segment is correlated with a reduction of lumbar lordosis, endplate inclination, and segmental height. In anterolisthesis: The facet joints in patients with DS were oriented more sagittally.

Two types of retrolisthesis:

There are two types of degenerative retrolisthesis: one occurs primarily as a result of degeneration in patients with low pelvic incidence, and the other occurs secondarily as a compensatory mechanism in patients with an anterolisthesis and high pelvic incidence.



radiograph showing the measurement of pelvic parameters: pelvic incidence (PI) is defined as the angle subtended by a line connecting the centre of rotation of the hip joint to the midpoint of the endplate of S1 and a perpendicular to the endplate of S1 at its midpoint; sacral slope (SS) is defined as the angle between the superior endplate of S1 and the horizontal plane; pelvic tilt (PT) is defined as the angle between a line joining the midpoint of the superior endplate of S1 and the centre of rotation of the hip with the vertical

ane.

The spinopelvic morphology and global sagittal balance in the two types of retrolisthesis [Bone Joint J. 2013 Sep;95-B(9):1244-9]

The spinopelvic morphology determines the mechanical stress at the lumbosacral junction. Degenerative anterolisthesis was reported to have a higher PI [Pelvic incidence], SS, and lumbar lordosis.

By contrast, degenerative retrolisthesis was associated with a lower lumbar lordosis and Sacral slop [SS].

REFERENCE

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