

Bilateral Calcification/Ossification of Iliolumbar Ligament

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Abstract: *the iliolumbar ligament plays a very important role in supporting the lower lumbar vertebral column; they extend from 5th lumbar vertebrae to the iliac crest of the pelvis. Injury to this area, can cause from direct trauma and also it is quite common in sports persons due to the various spinal movements, which can develop into sacroiliac joint pain and associated problems. In this case report, we present a bilateral ossified iliolumbar of a 59-year-old male with a history of low back pain. The knowledge of ossification of iliolumbar ligament will be important to the clinicians in correct diagnosis and treatment of patients suffering from iliolumbar ligament syndrome, also known as iliac crest pain syndrome.*

Key Words: *Iliolumbar ligament, Ossification, Calcification.*

Introduction:

Iliolumbar ligament plays an important role in maintaining lumbosacral spine stability on the pelvis. It forms an important landmark in correct labeling of vertebral levels in patients with lumbosacral transitional vertebrae (1). Calcification of the iliolumbar ligament is observed in ankylosing spondylitis and diffuse idiopathic skeletal hyperostosis as a consequence of both inflammatory and non-inflammatory enthesopathy (2-4). The iliolumbar ligament is described as being attached to the tip and the lower anterior part of the transverse process of the fifth lumbar vertebra. The ligament descends laterally and slightly posteriorly and gets inserted into the upper part of the iliac crest. Sometime a lower band of the ligament is also described, and it is termed as lumbosacral ligament, which runs from inferior aspect of the fifth lumbar transverse process to the anterior part of the ala of the sacrum (5). The iliolumbar ligament has important biomechanical and clinical role in stabilizing the lower lumbar spinal column. The iliolumbar ligament strengthens the lumbosacral joint assisted by the lateral lumbosacral ligament, and, like all other vertebral joints, by the posterior and anterior longitudinal ligaments, the ligamentum flava, and the interspinous and supraspinous ligaments. Injury to this area, fairly common among certain athletes due to the amount of frantic spinal motion involved in many sports, can develop into sacroiliac joint pain and associated problems. Recent studies have shown that low back pain is due to trauma to the iliolumbar ligament. Repeated trauma and scarring of the iliolumbar ligament could cause entrapment of dorsal rami of spinal nerves exacerbating the chronic low back pain (6).

Case Report:

A 59-year-old male presented to the A & E with a history of low back pain. The patient did not have any other complaints. No past surgical or medical history but suffered from similar type pain in last two years back. Physical examination showed no significant findings. X-ray was ordered to rule out for any possible bony and other soft tissue abnormalities. The X-ray revealed evidence of paravertebral muscle spasms. However, incidentally on the frontal radiograph bilateral ossification of the iliolumbar ligament was found appearing as long transverse process.(Fig.1)

Discussion:

The iliolumbar ligaments are crucial in supporting the lower lumbar spine. It plays an important role in restraining movement in lumbosacral and the sacroiliac joints. This ligament stabilizes the connection between the pelvis and lowers back, limiting the trunk from lateral flexion. Though injuries to this ligament are rare, in the injury of this ligament lateral flexion becomes painful in the sacroiliac joint area.

Until recently, the iliolumbar ligament was thought to develop during late childhood or adolescence from stress-induced metaplasia of the quadratus lumborum muscle (7). However, in the studies of fetuses found that the iliolumbar ligament is developed during the 12th week of gestation (8). The paraxial mesoderm of early embryos becomes organized into somites which later differentiate into three parts; the dermatome, the myotome, and the sclerotome. The sclerotome segments further differentiate into the intervertebral disc and the pre cartilaginous vertebral body. Centers of chondrification subsequently develop to form the future vertebral bodies. Those parts of the sclerotome between vertebral bodies do not chondrify and eventually, form the intervertebral ligaments. This tissue differentiation occurs in utero, and the ligaments should be fully developed in the newborn child (9).

Snijders (10) suggests that the iliolumbar ligaments plays an important role in the motion of the lumbosacral junction in the sagittal plane. Without the iliolumbar ligament, there would be decreased the stability of the vertebral column in relation to the pelvis. Increased susceptibility to injury of the iliolumbar ligament due to its attachment, since the ligament is attached to a bony surface at an angle might not be as strong as a ligament attached parallel to a bony surface (11). Goudzward et al. (12) found that following severing of the iliolumbar ligaments the range of motion of the iliosacral joint was significantly higher. According to that study, the anterior part of the ligament provides the strongest influence upon this mobility. The iliolumbar ligaments have a stabilising capacity in the frontal plane at the psinal levels of L5 and L4. While the iliolumbar ligaments are not always attached to the transverse process of L4, the stabilizing capacity is continued to L4 via the intertransverse ligaments. In cases of spondylolysis of L5 iliolumbar ligament is the only limiting factor for the anterior glide of the L5.

Conclusion:

The bilateral calcification of iliolumbar ligament could restrict flexion and extension of the lumbosacral junction. The iliolumbar ligament also functions in restricting the rotational movement of the lumbosacral junction. Iliolumbar ligament calcification can also lead to more serious conditions involving the 4th or 5th lumbar vertebrae. These areas can become weakened and prone to degenerative processes that can result either in persistent lower back pain, disc tearing, a herniated disc, or lower back nerve root compression.

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Figure I: Showing bilateral calcification of iliolumbar ligament.

