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Congenital Absence of Unilateral Zygapophyseal Joint and S1 Superior Articular Facet in An Adult Patient – A Case Report

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Abstract

This case report describes a rare congenital absence of the L5-S1 lumbosacral articular facet joint and S1 superior articular facet on the left side in a 17-year-old male presenting with lower back pain. Despite being asymptomatic in most cases, this anomaly was diagnosed through a CT scan, highlighting the importance of advanced imaging for accurate diagnosis. Awareness of such rare congenital defects is crucial for proper management of unexplained lower back pain.

Keywords

Congenital absence of unilateral zygapophyseal joint, Superior articular facet, Lower back pain, L5-S1 lumbosacral articular facet joint.

Introduction

The zygapophyseal joints, also known as facet joints, play a crucial role in the stability and flexibility of the vertebral column. The L5-S1 lumbosacral joint, in particular, is pivotal for the biomechanical integrity of the lower spine.

Congenital absence of the L5-S1 lumbosacral articular facet joint is an exceedingly rare anomaly, with only 34 documented cases in the medical literaturesince it was first reported by Müllerin 1932 [1, 2, 3, 4].Most of these cases are asymptomatic, often remaining undiagnosed and subsequently unreported [5].There are just three documented occurrences in the literature of congenital absence of the lumbosacral articular facet joint with concomitant conjoined nerve root [6, 7]. Absent lumbosacral articular facet joint at times might be mistaken for a destructive lesion [8]. It can easily be missed on an X-Ray image and the diagnosis is confirmed in a CT scan.

Here we report a case of 17-year-old male who presented with lower back pain.

Case Report

A 17-year-old male presented with the complaint of dull nagging continuous pain located at the left lower lumbar region of the spine. The intensity increased while standing and during normal range of motion. Results of a physical examination of the spine and legs were unremarkable. Further examination revealed no neuropathy of the back or legs.

A CT scan of abdomen and lumbosacral spine was obtained which showed absent left zygapophyseal joint at L5-S1 vertebral body level with absent S1 superior articular facet (Image 1). 3D rendering of the same is shown in Image 2.

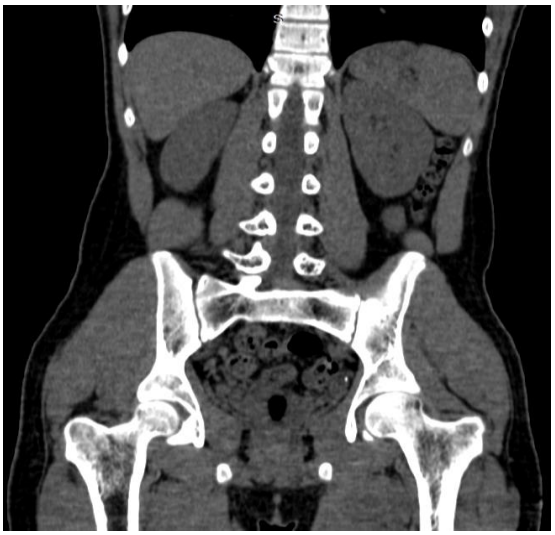

Figure 1: CT Coronal section showing absence of L5-S1 lumbar articular facet joint on the left side.

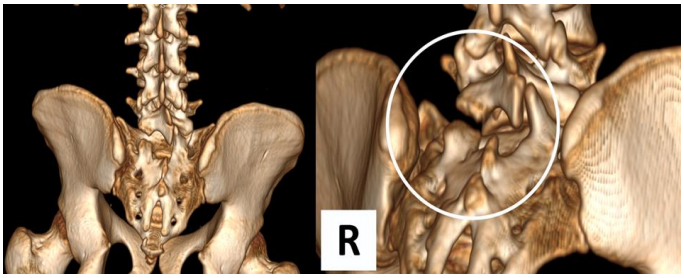

Figure 2: 3D Volume rendering showing absence of L5-S1 lumbar articular facet joint on the left side.

Discussion

There is a presence of approximately three to four primary centres of ossification in each vertebra [2, 3, 9]. During ossification, typically one primary ossification centre develops on each side of the neural arch along with one in the vertebral body. A congenital articular defect is caused by failure of this ossification process, mostly due to lack of proper vascularization [10].

This report details the case of a 17-year-old male with lower back pain. Lower back pain is one of the most common causes of disability resulting in loss of countless work-hours and subsequent decline in productivity. There are many common causes of it as disc disease, osteoarthritis, nerve root compression, paraspinal muscle strain, etc. Rare congenital absence of unilateral lumbosacral articular facet joint is also a cause lower back pain.

Conclusion

The congenital absence of the L5-S1 lumbosacral articular facet joint is a rare but significant anomaly. While the majority of cases are asymptomatic and frequently remain undiagnosed, this case report highlights the importance of considering such congenital defects in the differential diagnosis of lower back pain. This particular anomaly can easily be overlooked on standard X-ray images and requires advanced imaging modalities, such as CT scans, for preventing misdiagnosis and ensuring appropriate management of patients presenting with lower back pain.

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