Frequency of agenesis of the dorsal wall of the sacrum and its clinical implications

Frequência da agenesia da parede dorsal do sacro e suas implicações clínicas

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ABSTRACT
Introduction: The sacrum, formed by the union of the five sacral vertebrae, is positioned at the base of the spine and between the two hip bones. These vertebrae begin to fuse between 16 and 18 years of age and end around 30 years of age. However, in some cases, this structure may suffer anatomical variations, such as agenesis of the dorsal wall of the sacrum, which is a failure in the union of the laminae of the sacral vertebrae. Objective: To analyze the frequency of complete agenesis of the dorsal wall of the sacrum and its

clinical and surgical implications. Methodology: A descriptive morphologic and anthropometric study was performed with 45 sacrums of unknown sex and age. The length of the sacral canal was calculated using a digital caliper with 0.01 mm precision. Results: Complete agenesis of the posterior wall of the sacrum was observed in 2 of the 45 sacrums analyzed (4.44%). In the first case, the length of the sacral canal was 110 mm. A triangular shape was observed in the proximal two-thirds and a quadrangular shape in the distal third, with a narrowing between the third and fourth sacral vertebrae. In the second case, the length of the sacral canal was 96 mm, and a triangular shape was observed in the proximal and middle thirds, with a narrowing between S2-S3 and a quadrangular shape in the distal third, with a narrowing between S4-S5. Conclusion: The study of this anatomical variation was necessary, since its occurrence has been persistent and its knowledge can reduce the failures made by clinicians and surgeons in the application of caudal epidural anesthesia, in the diagnosis of low back pain or even in the treatment of congenital diseases, for example meningocele and myelomeningocele.

Keywords: Sacrum, Sacral canal, Complete agenesis, Caudal epidural anesthesia, Lumbar lower back pain.