Lumbosacral transitional vertebra

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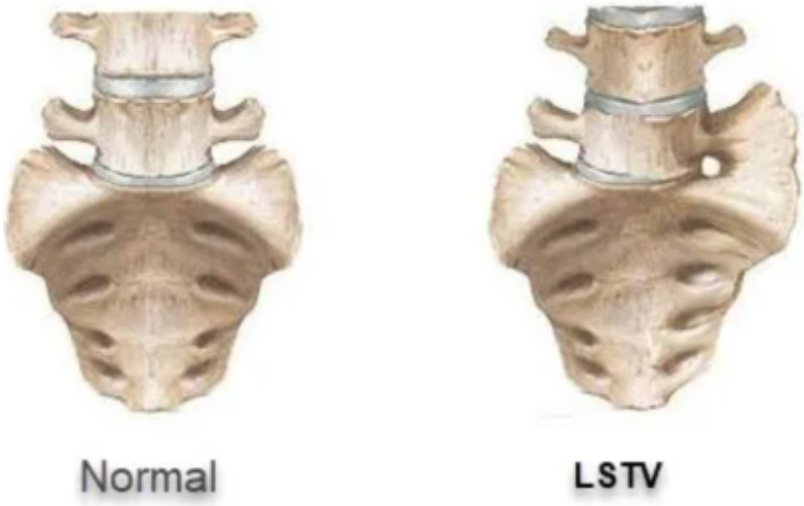

Lumbosacral Transitional Vertebra LSTVs is a congenital spinal anomaly defined as either sacralization of the lowest lumbar segment or lumbarization of the most superior sacral segment of the spine.

It has been considered as one of the reasons for back pain.

Epidemiology

LSTVs are common in the general population, with a reported prevalence of 4%–30% [1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13) 14)].

The conus medullaris (CM) level, when lumbarization occurred, was lower, with a mean level at L1-L2, whereas a more superior mean level at T12-L1 was seen when sacralization occurred. CM level was not influenced by sex, age, or pathology other than tethered cords [15)].

Case series

Four hundred ninety-four LSTV patients were included and categorized into sacralization (n = 201) or lumbarization groups (n = 293). Magnetic resonance imaging (MRI) of all of the LSTV patients were reviewed to determine the level of dural sac (DS) termination, the shortest distance between the apex of the sacral hiatus and DS, and the presence and the caudal level of sacral perineural cysts. Each lumbosacral vertebra column was divided into 3 equal portions (upper, middle, and lower thirds). The MRI findings in both of the groups were compared and analyzed.

The distribution frequency of the levels of DS termination demonstrated a significant difference between the 2 groups. The mean caudal DS level in the lumbarization group was significantly lower than the sacralization group (lower third of the S2 [131 {44.7%} of 293 patients] vs. lower third of the S1 [78 {38.8%} of 201 patients]). The DS terminated at the S3 in more than 19% of the lumbarization group, whereas in only one case of the sacralization group. Although the incidence of perineural cysts

was not significantly different between the 2 groups, the mean level of caudal margin of perineural cysts in the lumbarization group was significantly lower than the sacralization group (middle third of the S3 [10 {35.7%} of 28 cases] vs. middle third of the S2 [11 {44%} of 25 cases]).

This study reveals several limitations including the practical challenge of accurate enumeration of the transitional segment and the constraints on generalizability posed by the single-country study.

When planning CEB for patients with LSTV, pre-procedural MRI to check the anatomical structures, including the level of DS termination and caudal margin of perineural cysts, would be of great use for lowering the risk of unexpected dural puncture during the procedure, especially in the lumbarization cases [16].

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