

LUMBOSACRAL TRANSITIONAL VERTEBRAE: CLASSIFICATION OF
VARIATION AND ASSOCIATION WITH LOW BACK PAIN

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ABSTRACT

The association of lumbosacral transitional vertebrae (LSTV) and low back pain, commonly referred to as Bertolotti's syndrome (Bertolotti, 1917), has a controversial history. LSTV are caused by the overlap or shift of developmental fields, and result in vertebrae with abnormal morphology. Current classification systems are inadequate for assessing LSTV both morphologically and clinically. Thus, I have created a classification system based on my analysis of over 2800 individuals in the Hamann-Todd collection. Also, I have analyzed the metric variation among those individuals as well as a control group of 100 individuals. I then analyzed a clinical sample using my classification system. Analysis shows that LSTV have a definite affect on vertebral dimensions ($p < 0.0001$), even after separation by sex. In the clinical setting, LSTV were nearly twice as prevalent (13.5% vs. 7% in Hamann-Todd), with unilateral types occurring twice as often; however, LSTV did not cause more intense LBP.