

# Review of: "L4-L5 Anatomy Classification System for Lateral Lumbar Interbody Fusion"

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Potential competing interests: No potential competing interests to declare.

In this paper Amaral et al present a new classification regarding anatomy of L4-5 for lateral lumbar interbody fusion.

Although their classification is simple and practical there are several issues with this paper

1. The classification is based on three parameters: psoas muscle anterior margin in relation to anterior margin of vertebral body, plexus position in relation to middle of vertebral body, vascular structures in relation to the anterior margin of vertebral body. Although psoas muscle and vessels are easily identifiable the position of lumbar plexus inside the psoas muscle cannot be verified accurately even with sophisticated methods like MRI neurography. Such erroneous "identification" may lead to permanent nerve damage during surgery with catastrophic results.
2. What about the asymmetry. For example Figure 5 shows anatomy where vascular structure is present between psoas muscle and vertebral body on the left side but not on the right. Please include asymmetry as possible variable in your classification.
3. There are three parameters and each of them is binary. Altogether there should be 8 possible variations but classification mentioned only 3 groups. What about other configurations.
4. Figure shows iliac crest highlighted by red dotted line. What is iliac crest has to do with the topic of this paper. If it is a part of the classification then include it otherwise exclude.
5. Figures 4 and 5 are distorted and not acceptable for publication standards.
6. Figure 4 has "two red arrows denote external forces acting on the psoas muscle due to hypolordosis, as hypothesized by Ebata et al. (2018)" what it has to do with the topic of this paper. Looks confusing and unnecessary.
7. The mentioning of Moro paper is erroneous in Discussion section. It has four sections (I-IV) - Roman numbers in brackets are fine but text is wrong. Also zones III and IV aren't anterior.