

Letter to the Editor concerning the article “Anterior pedicle screw fixation of C2: an anatomic analysis of axis morphology and simulated surgical fixation” [Zeng-Hui Wu et al. (2014); *Eur Spine J* 23(2):356–361]

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To the Editor:

We sincerely applaud the work of Zeng-Hui Wu et al. [1] about the size, position and angle of the anterior approach of the C2 pedicle. It is well known that vertebral morphometric studies represent the basis for the planning and execution of spine surgeries, as well as for the design and manufacture of pedicle screws. Knowledge of these morphometric characteristics is important to prevent damage of adjacent structures, particularly the upper portion of the cervical spine.

Classic studies of morphometric anatomy of the axis focus on morphometric parameters of relevance for conducting posterior surgical approaches, rather than the morphometric characteristics involved in performing an anterior approach to C2 [2, 3]. However, at present, transpedicular axis fixation is commonly performed via an anterior approach. The authors accurately describe the angular and linear relationships relevant to the placement of pedicle screws through an anterior approach to the axis. The simultaneous use of osteological specimens and CT

reconstruction represents a strength of the study. This is important because of the scarcity of quantitative information regarding the morphometric parameters studied in an anterior approach of the axis.

However, a strong limitation of the study is the lack of demographic data of age and gender of the specimens involved. Morphometric changes of significance have been documented for age and gender in the vertebral pedicle in other regions of the spine [4, 5], therefore it is logical to think that these can also be found in the cervical region, where no studies including these variables (age and gender) were found.

We agree that preoperative determination of morphometric characteristics of the axis by CT reconstruction should be performed in each patient to individualize treatment. Furthermore, it is necessary to conduct similar morphometric studies with a larger sample number, considering age and gender of the specimens involved. It is important to study morphometric characteristics regarding age, gender, and ethnicity in the cervical region. This study provides invaluable information for better development of C2 transpedicular fixation through an anterior approach.

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Conflict of interest None.

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