

## Comment on “Transpedicle body augments in painful osteoporotic compression fractures” (Kung-Chia Li, Anna F.-Y. Li, Ching-Hsiang Hsieh, Hsiang-Ho Chen)

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The authors present a retrospective study about the treatment of vertebral body compression fractures (VBCF) in patients with osteoporosis using a closed reduction maneuver and a mini open transpedicular approach for the placement of bone graft and a body augment. The presented data appear sound and are well documented.

The presented treatment method remains a principle concern. My first concern is regarding the reduction maneuver: this method has been advocated by trauma surgeons for the initial treatment in traumatic fractures. The application of this technique to the population with osteoporosis appears critical—manipulating patients in the described manner with severe osteoporosis might expose them to rib fractures or fractures of the sacrum or femoral neck and should therefore be avoided in this group of patients. It has been shown in a well-documented study by Voggenreiter [3] that the spontaneous kyphosis correction by positioning the patients is already substantial. If a reduction is needed other techniques should be considered.

My second concern addresses the principle of the technique: transpedicular bone grafting was advocated by Daniaux for traumatic fractures in combination with internal fixation. However, the reported results of other authors failed to support this principle. Looking at the surgical technique presented here, again the same concerns do appear. I am in doubt that the presented technique will provide the same results in the hands of less experienced surgeons. On the contrary I would warn that the technique could lead to further complications as fractures of the pedicles with secondary instability. Yes, osteoporotic vertebra are soft and pedicles may be plastically enlarged, but the mechanical stability of osteoporotic vertebrae depends strongly on the integrity of their structure.

The last concern regards the comparison of this technique with percutaneous cement augmentation (vertebroplasty, kyphoplasty). The authors are listing all shortcomings of the technique of cement reinforcement, which are important to realize. However, they ignore many newer studies that show the importance of cement viscosity [1] and the potential of the technique for this increasing problem of osteoporotic spine [2]. Many arguments against percutaneous cementing techniques like the lack of long-term results are not valid and apply as well to this presented alternative technique. The huge success of cement reinforcement for VBCF is self-explaining. The presented technique in the article above is not an alternative to overcome the problems related with vertebral body augmentation by cement. A more standardized technique with adapted cements and seriously trained surgeons is the solution.

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