



## LETTER TO THE EDITOR

### Comments on: "Open wedge high tibial osteotomies: Calcium-phosphate ceramic spacer versus autologous bone graft" by F. Gouin, F. Yaouanc, D. Waast, B. Melchior, J. Delecrin and N. Passuti, published in *Orthop Traumatol Surg Res* 2010;96:637–45

It was with great interest that we read the article by Gouin et al. In a randomized study, the authors reported the medium-term clinical and radiological results of medial open wedge high tibial osteotomies stabilized with plate and locked cortical screw fixation (two epiphyseal and two diaphyseal screws). The two arms of the study differed in the type of osteotomy defect filling: an autologous tricortical iliac graft for one group and a 40-mm long and 20- to 30-mm wide ceramic spacer with a variable height depending on the opening desired (never greater than 15 mm). This spacer was mixed with 20 ml of autologous bone marrow harvested percutaneously from the ipsilateral iliac crest.

The authors showed that the ceramic spacer had mechanical qualities that were inferior to those of the autologous graft and insufficient to maintain the osteotomy opening before bone union (particularly if there was rupture of the lateral bony hinge). Moreover, radiological healing occurred later with the ceramic spacer. The authors concluded that ceramic spacers should not be used, particularly when there was rupture of the lateral hinge.

This cautious conclusion is debatable: if intraoperative radiographs of varied rotations are taken after opening the osteotomies, intact hinges in AP views often appear fractured on another incidence. It would have been logical to improve the stability of the epiphyseal osteosynthesis, ensuring that the two epiphyseal screws had hold in the posterior solid cortical bone. On Fig. 6b, which illustrates a loss of correction, one of the two epiphyseal screws, seen in a frontal plane, most certainly does not have sufficient hold in the posterior cortex. In contrast, in Fig. 7, which illustrates healing without loss of correction, it is probable that both screws have reached the posterior cortex.

Finally, the choice of iliac crest material for filling the opening defect for the study's reference arm can be discussed. The morbidity of iliac tricortical bone samples has long been known. In fact, out of 18 cases, the authors noted two cases of suppuration and one of painful "calcification", all three requiring surgical revision. The reference series could have used a less invasive technique such as a short (1.5 cm) and narrow (1.5 cm) acrylic cement wedge fashioned intraoperatively with the height depending on the opening desired. Introduced in the posteromedial angle of the osteotomy, this wedge is associated with plate osteosynthesis placed on the medial side of the tibia in front of the wedge, with two of the three epiphyseal nonlocked cortical screws screwed into the posterior cortex. This procedure resulted in only one case of loss of correction out of 107 osteotomies followed. The osteotomy is not filled with neighboring cancellous bone material if the opening is less than 15 mm [1]. This technique would also have made it possible to compare the rapidity and radiological quality of spontaneous bone growth filling the osteotomy with bone material obtained with the ceramic wedge mixed with autologous bone marrow.

### Disclosure of interest

The author declares that he has no conflicts of interest concerning this article.

### Reference

- [1] Goutallier D, Juliéron A, Hernigou PH. Cement wedges to replace iliac grafts in upper tibial opening wedge osteotomy. *Rev Chir Orthop* 1992;6:173–9.

D. Goutallier\*  
 S. Vandriessche

*Orthopedic and Traumatologic Surgery Department,  
 Henri-Mondor Hospital, Paris Public Assistance Hospitals  
 Group, Créteil Medicine School, Paris XII University, 51,  
 avenue du Maréchal-de-Lattre-de-Tassigny,  
 94010 Créteil cedex, France*

\* Corresponding author.

E-mail address: daniel.goutallier@wanadoo.fr  
 (D. Goutallier)