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LETTER TO THE EDITOR

Comment on Sen et al.: Osteosynthesis of femoral-neck nonunion with angle blade plate and autogenous fibular graft

Sanjay Meena

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We read with great interest the manuscript by Sen et al. entitled "Osteosynthesis of femoral-neck nonunion with angle blade plate and autogenous fibular graft" [1]. I must congratulate the authors for this study. However, I would like to draw the attention of the authors and readers to the following:

1. Femoral neck nonunion is associated, in the vast majority of cases, with varus malalignment; valgus intertrochanteric osteotomy is the recommended treatment of this problem in young patients. The osteotomy improves compression at the fracture site and improves the mechanical environment for healing. Only in those rare cases where femoral neck non-union is associated with no or minimal varus alignment, revision internal fixation with bone graft may be done [2].
2. Intraoperative static compression of the fracture fragments and dynamic compression during the postoperative period are achieved with parallel screws; excellent compression can be produced atraumatically by the lag effect of the screws. Compression of the fragments cannot be achieved by a blade plate.
3. As emphasised by the authors in the manuscript, the femoral head in non-union of the femoral neck is compromised by osteoporosis, secondary to disuse, and bone deficiency in the femoral head due to previous hardware. In osteoporotic bone, medial anchoring of multiple pins is better than a single unit implant because of multiple site of purchase. A rigid single member such as a blade plate is in contact with one set of trabeculae. Once these trabeculae fail to hold the plate, motion occurs between the two fragments, which leads to failure of osteosynthesis. In a multiple pin assemblage, failure of one group of trabeculae with the pin or screw inside does not predispose to failure of another set of trabeculae with its pins. These trabeculae are widely separated and are resistant to motion [3].
4. Fixed nails (blade plate) are notorious for penetrating into the hip joint or may cut out of the head and neck as opposed to cancellous cannulated screws (CCS), which do not penetrate into the hip joint or come out of the femoral head.
5. There is not enough space to apply blade plate due to the previous fixation tracts and the tract for the fibular graft. Moreover, inserting both blade plate and fibula in a limited space is technically demanding and cannot be done by an average orthopaedic surgeon.
6. Hammering the blade plate into femoral head causes distraction of the fracture fragments. Microfractures occur which may further damage the vascularity of head.

Warm regards to the authors, and once again congratulations on their research.

S. Meena (✉)
All India Institute of Medical Sciences (AIIMS),
Ansari Nagar, New Delhi - 110029, India
e-mail: sanjaymeena@hotmail.com

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