Letters to the Editor
Proximal femoral locking plate versus dynamic hip screw for unstable intertrochanteric femoral fractures

To the Editor:
We read with interest the article by Dhamangaonkar et al.¹ May the authors clarify the following points.
1. A dynamic hip screw (DHS) with fixed angle locking screws reduces the risk of implant failure, particularly for patients with osteoporotic bone or less stable fracture configurations.² Why did the authors compare a proximal femoral locking plate with a non-locking 135º DHS? Comparison of the DHS locking plate with a proximal femoral locking plate would have been more realistic and generalisable.
2. Filling all screw holes may lead to stress concentration and high strain, which can lead to implant failure after cyclic loading.³ The working length has no effect on stiffness, gap motion, and resistance to fatigue.⁴ What is the authors’ opinion regarding this issue? We believe that in cases of comminution, increasing working length at the level of the fracture enables a larger area of stress distribution on the plate and reduces the strain at the fracture site.
3. Correct placement of screws is of crucial importance and should be ensured in both anteroposterior and lateral planes. Convergence/divergence of the locking head screws in the anteroposterior/lateral planes enables an angular stable buttress that increases the stability of fracture fixation.⁵ Did the authors check the screw placement in both planes?
4. The ‘kickstand’ screw has greater axial stiffness and lesser torsional stiffness,⁶ but its use to reduce the risk for mechanical failure cannot be established.⁷ What is the authors’ opinion regarding this?
5. Regarding a large posteromedial void, what were the factors that impeded the locking of screws besides osteoporosis? Did the authors attempt bone grafting for the void?
6. The authors stated that “All patients in the DHS group were operated on with a short barrel plate, which increased the risk of jamming of the lag screw.” The lag screw length during the procedure determines the barrel plate sizes, i.e. standard (38 mm) or short (25 mm).⁸ Please comment.

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5. The DHS with locking screws is not as commonly used as the conventional DHS. Moreover, there is no proven significant advantage to the former.1 Nonetheless, we agree with the concept and have already discussed this in our article, in which the main focus was to compare a sliding extra-medullary conventional fixation system with a newer locking extra-medullary fixation device for unstable intertrochanteric fractures.

2. The cited study2 suggests that not all screws adjacent to the fracture site be inserted in cases of increased metaphyseal comminution, but the authors filled all locking screws at a safe distance from the fracture site, and immediate postoperative weight bearing was allowed. We have followed the same principles, except that non–weight bearing was used to protect the fixation. We agree that a longer plate with intermittent locking shaft screws would be ideal. Regarding the study using a locking compression plate in a cadaveric diaphyseal dog femur,3 the forces acting at the fracture site differ from those in the intertrochanteric region in humans with a bipedal gait where 4 or 5 bicortical locking screws are not possible in the proximal fragment of intertrochanteric fractures. Hence, it is not a suitable study from which to draw any clinical inference.

3. The screw placement was checked in both the anteroposterior and lateral planes using an image intensifier.

4. Good reduction of the medial and posteromedial cortex, rather than only the calcar ‘kickstand screw’, can provide a stable fixation. The biomechanical study cited also acknowledges this fact in a clinical scenario.4 The ‘kickstand screw’ provides a secure bony hold in the calcar, especially in osteoporotic patients, which only augments the stability of good reduction of the medial and posteromedial cortex.

5. In patients with a small proximal femur, one of the 3 neck screws may have to be inserted using a free-hand technique, as the jig is too big for the femur.5 This may lead to a slight mismatch of the threads of the screw hole in the plate and those on the locking screw head, which results in the screw not being fully locked. Bone grafting for the posteromedial void was not attempted in our series.

6. We agree that the lag screw length determines the use of the short or standard barrel plate. The 2 studies cited were not exclusive to treating unstable intertrochanteric fractures with the DHS.6,7 We too have used a short barrel plate for a lag screw size of ≤75 mm.8 Nonetheless, we encountered occasional jamming of the lag screw, probably owing to the large posteromedial void in unstable intertrochanteric fractures. This large posteromedial void followed by axial loading in an unstable intertrochanteric fracture may lead to jamming of the lag screw in the barrel. Only 15 mm of dynamisation is required with a DHS,6 but when a DHS is used in an unstable intertrochanteric fracture without a lateral wall and there is smooth sliding with a short barrel without jamming, there is an uncontrolled coaxial collapse as there is no lateral buttress. In these cases, using a standard barrel plate may partly restrict this uncontrolled collapse by restricting the sliding length available for the lag screw. This may prevent the excess medialisation of the shaft.

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Bipolar hemiarthroplasty for intracapsular femoral neck fractures in elderly patients

To the Editor:
I read with interest the article by Rajak et al.1

1. The authors included patients as young as 56 years, although the title indicated elderly patients. The mean age of the patients was 70 (range, 56–86) years. The authors failed to explain why hemiarthroplasty was performed instead of total hip arthroplasty. 15 of the patients had no comorbidities and were aged from 61 to 82 years. Patient mobility status or the use of walking aids before injury were not mentioned. The National Institute for Health and Care Excellence guidelines for management of hip fractures states that a total hip replacement should be offered to patients with a displaced intracapsular fracture who were able to walk independently, are not cognitively impaired, and are medically fit for anaesthesia and the procedure.2

2. The authors stated that a cemented prosthesis was used when the bone was osteoporotic and the medullary canal was wide, but there was no mention of how they assessed the bone quality. The gold standard for measuring bone mineral density is by dual energy X-ray absorptiometry. Nonetheless, bone mineral density accounts for no more than 60% to 70% of bone strength.3

3. The patients were only allowed partial weight bearing initially and then full weight bearing after 6 weeks. This is not the practice in the United Kingdom, as patients are allowed full weight bearing as tolerated from day 1. Further clarification for such a restriction is needed, especially as only one case of intra-operative periprosthetic fracture was encountered.

4. The authors stated that limb lengthening of <3.2 cm was not significant and did not affect outcome. How did the authors reach such a result when they only encountered one case of limb lengthening of 1.5 cm?

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