Comment on Stern et al.: Prospective randomised study comparing screw versus helical blade in the treatment of low-energy trochanteric fractures

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Received: 12 January 2012 / Accepted: 23 January 2012 / Published online: 21 February 2012
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We admire the work of Richard Stern et al. on the cephalic implant to be used in the treatment of low-energy trochanteric fractures [1]. The authors have conducted a randomised controlled trial and concluded that both screw and a blade perform equally well with a SHS or IM nail for the treatment of trochanteric fractures in the elderly age group.

The primary idea of treatment of a trochanteric fracture with a DHS or an IM nail is procurement of controlled fracture impaction by the cephalic implant in femoral head with plate or a nail acting as a lateral tension band. This allows unimpeded healing in a cancellous environment of the extracapsular intertrochanteric region. Thus, there is a constant race between the fracture healing by collapse and tendency for implant failure typified by cephalic implant cut-out. Most trochanteric fractures heal uneventfully with good clinical and radiological outcome. However, some of them, especially the unstable ones and those with delayed union, may end up in varus malunion due to the combined effects of fracture collapse, lack of posteromedial buttress and poor anchorage of the cephalic implant resulting in suboptimal clinical and radiological outcome. Rarely, the tendency for implant cut-out may win the race over fracture healing, resulting in implant failure and worse clinical result.

Before moving into a discussion of the article by Stern et al., we describe the proposed advantages of a helical blade. The helical blade allows for compaction of the bone during insertion, an advantage in osteoporotic bone. Improved rotational stability along with better anchorage in a cancellous

environment is supposed to reduce the risk of screw cut-out, delayed union and varus malunion. The higher resistance of helical blade to heavy loads and reduced chance of screw cut-out has been made evident by various anatomical and biomechanical studies [2–5]. However the proposed benefits of helical blade have not been construed by any clinical studies to demand a change in the conventional practice.

There are a few issues which need to be addressed in the article by Stern et al.:

1. The quality of reduction has been shown to affect the outcome in trochanteric fractures [6]. Only the tip apex distance (TAD) and position of the implant in the femoral head in the immediate postoperative radiographs have been compared between the two groups including cases of implant cut-out. Appended information about the quality of reduction in these radiographs in cases that healed uneventfully and ones with screw cut-out would have added more enlightenment into the quandary.
2. As discussed above the helical blade is supposed to reduce the risk of cut-out, varus malunion and delayed union. Thus, clinical validation of helical blade in the management of a trochanteric fracture should be based on implant position in the femoral head, incidence of varus malunion, re-operation rates and implant failure and include time of healing complemented by clinical outcome.

The authors have considered only the re-operation rates along with incidence of cephalic implant cut-out and these cases constitute only the tip of the iceberg. Although the limitation of lack of complete evaluation of patients at one-year follow up was addressed, such a prime study with randomisation and good number of subjects should have thrown light on the incidence of varus malunion, time of fracture healing and clinical outcome by appropriate

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radiological and clinical evaluation. These would have made the article more edifying and denouements of such a unique clinical study would have more impact in clinical decision making.

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