Reviewer’s report

Title: Narrow Locking Compression Plate VS Long Philos Plate for Minimally Invasive Plate Osteosynthesis of Spiral Humerus Shaft Fractures

Version: 1 Date: 28 Apr 2019

Reviewer: Henry Atkinson

Reviewer’s report:

The authors hypothesised that minimally invasive plate osteosynthesis (MIPO) using a long philos plate (LPP) would lead to better clinical and radiological outcomes and fewer complications than using narrow locking compression plates (NLCP) for spiral humerus shaft fractures with or without metaphyseal fracture extension (AO classification 12 A, B, C except A3).

They recruited 35 patients in to this retrospective review over a 7 year period (January 2009 to May 2016), during which their practice changed from using the NLCP plate to using the LPP plate (17 patients).

The authors collected various data at follow-up including shoulder range of motion (ROM), pre- and post-operative anteroposterior (AP) and lateral angulation of the fractures, the operative times, the amount of blood loss, and functional outcomes including the American Shoulder and Elbow Surgeons score, University of California at Los Angeles score, and the Simple Shoulder Test scores.

The authors found that 33 of the 35 patients achieved complete bony union and achieved satisfactory functional outcomes. The LPP group had better postoperative fracture angulation on X-ray and a shorter operative time (p <0.05), though 2 LPP patients had to undergo revision surgery with an NLCP and bone grafting, due to failure of their LPP hardware.

The authors concluded that though the LPP was an easier operation, and had better fracture reduction on X-ray and a shorter operative time; one should still consider using the NLCP plate (which gives a more rigid fixation), owing to the risk of metalwork failure using the LPP (which has a weaker fixation).

I reviewed the original submission, and the authors have made all my requested changes to the manuscript. The paper is now much better structured and consistent, and the Discussion much improved.

I am happy to recommend publication of this paper in BMC MD

Thanks
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
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