Comment on Cheng et al.: Comparison study of two surgical options for distal tibia fracture—minimally invasive plate osteosynthesis vs. open reduction and internal fixation

Siddhartha Sharma · Mohammad Farooq Butt

Received: 3 May 2011 / Accepted: 18 May 2011 / Published online: 31 May 2011
© Springer-Verlag 2011

Dear Editor,

We read with great interest the article by Cheng et al. on ‘Comparison study of two surgical options for distal tibia fracture—minimally invasive plate osteosynthesis vs. open reduction and internal fixation’ [1] in the online issue of *International Orthopaedics*. The authors have concluded in their study that the minimally invasive plate osteosynthesis (MIPO) technique is not distinctively superior to open reduction and internal fixation (ORIF) in the treatment of distal tibial fractures.

However, there are several intriguing points that we think need to be discussed further and elaborated upon.

1. To have a meaningful comparative analysis, the comparison groups should be matched for as many important variables as possible except for the variable to be measured, which in this case happens to be the surgical technique. However, the authors have used only three variables, viz. age, gender and fracture pattern. Several other factors that influence fracture healing and have not been compared include nutritional status, pre-injury activity status, smoking status, osteoporosis and the presence of systemic diseases. Also, the authors have not mentioned whether the quality of reduction and fixation was assessed and if so, whether it was comparable across the paired groups.

2. The fracture patterns included in the study are quite variable, ranging from simple patterns (AO type A), wedge patterns (AO type B) and comminuted patterns (AO type C). We believe that it is unrealistic to club all three categories together for a comparative analysis. Some interesting facts emerge from subgroup analysis of the comminuted (AO type C) fracture patterns. Although the number of cases is small, one can still appreciate the fact that three of four comminuted (AO type C) fractures (patients 7, 8, 9 and 10) united faster with the use of the MIPO technique. One case of four (25%) AO type C fractures developed osteomyelitis, whereas this complication was not seen in any case in the MIPO group.
3. The authors performed fibular fixation only for fractures involving the syndesmosis. However, many authors have reported that fibular fixation is a must for comminuted tibial fracture patterns. By restoring the lateral column, indirect reduction can be achieved and this also prevents fracture collapse [2, 3].

To conclude, we believe it would be wrong to jump to the assumption that the MIPO technique is not superior to ORIF for all distal tibial fractures. Distal tibial fractures are a diverse group, ranging from simple fracture patterns to complex patterns. MIPO, when used with the principles of bridge plating, apparently seems to be the superior of the two techniques for the subgroup of comminuted (AO/OTA type C) fracture patterns. Large, multi-centre randomised controlled trials are needed to confirm or refute this observation.

Regards,
Siddhartha Sharma
Mohammad Farooq Butt

S. Sharma (✉) · M. F. Butt
Department of Orthopaedic Surgery, Government Medical
College,
Bakshinagar, Jammu, India
e-mail: sids82@gmail.com

Conflict of interest The authors declare that they have no conflict of interest.

References

1. Cheng W, Li Y, Manyi W (2011) Comparison study of two surgical options for distal tibia fracture—minimally invasive plate osteosynthesis vs. open reduction and internal fixation. *Int Orthop* 35 (5):737–742. Epub 2010 Jun 2. PubMed PMID: 20517695
2. Gupta RK, Rohilla RK, Sangwan K, Singh V, Walia S (2010) Locking plate fixation in distal metaphyseal tibial fractures: series of 79 patients. *Int Orthop* 34(8):1285–1290. Epub 2009 Oct 10. PubMed PMID: 19820935; PubMed Central PMCID: PMC2989064
3. Bonneville P, Lafosse JM, Pidhorz L, Poichotte A, Asencio G, Dujardin F, French Society of Orthopaedics and Traumatology (SOFOT) (2010) Distal leg fractures: how critical is the fibular fracture and its fixation? *Orthop Traumatol Surg Res* 96(6):667–673. Epub 2010 Sep 20. PubMed PMID: 20851076