Comments on Lee et al.: Lateral fixation of AO type-B2 ankle fractures: the Acutrak plus compression screw technique

Ajay Pal Singh · Divesh Gulati · Arun Pal Singh ·
Subhash Mahajan · Vipul Garg

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We read with interest the article of Lee et al. [1] regarding fixation of fibula in a type B2 ankle fracture and would like to commend the authors for exploring a new technique of fixation in these fractures.

The authors claim that the differential pitch of the screw resulted in compression at the fracture site [1]. But considering that it is inserted into the medullary cavity, the 6.5-mm Acutrak screw may not have a purchase in the distal fibula (at the entry point) if the fibula is wider, as may be the case in some patients, leading to rotational instability [2]. Moreover there may be a serious risk of splintering the lower end of fibula if such fixation is used in patients where the lower end is not wide enough to accommodate a 6.5-mm screw.

We also have concerns about the use of these screws in fractures that are long oblique in configuration or grossly comminuted. An intramedullary fixation in long oblique fractures will lead to translation of the fracture in either plane depending on the plane of obliquity [2, 3]. It would be interesting to know in how many patients with oblique/spiral/comminuted fractures did the authors use any supplementary fixation and if these patients ever demanded a removal of the supplementary fixation.

Another issue is regarding need for implant removal after fixation. Though none of the authors' 23 patients demanded implant removal, we anticipate technical difficulty if implant removal is contemplated, considering the

new bone formation that would occur at the screw insertion site due to burying of the screw head. We expect need for more dissection and potential bone and ligament damage during implant removal, if this became necessary.

Considering that headless screws were used with advantages of smaller incision and compression at the fracture site, we would like the authors view as to whether cannulated cancellous screws could be used in their place with their heads countersunk. Cannulated cancellous screws are easily available and a cost-effective alternative to these screws. Was a cost-benefit analysis of the method of fixation used done with other methods such as plate fixation or lag screw fixation. Furthermore, two screws are required for the rotational stability [4].

The authors demonstrated excellent results with this method of fixation in their patients. In previous studies of similar fracture patterns in the elderly, a good fracture reduction was obtained in more than 95% of patients ($n=45$) using Knowles pins with a reasonably small incision (4.2 cm) and no complications or prominent hardware [5]. Similar good results were reported by the authors in another study on open type B2 fractures with Knowles pins with only one patient ($n=25$) complaining of symptomatic hardware problems [6]. Krenk et al. conducted a study using a minimally invasive distal fibular plate and reported small incisions were required with no complications, no symptomatic hardware and no hardware removal in their 19 patients [7].

We would like to question the recommendation of the use of Acutrak screws considering that it has been propagated for only a single subtype of fracture of fibula in this study with exclusions of comminuted fractures, open fractures, and patients with syndesmotic injury. We would like to point out that a plate has been used in fixation of all these types of fractures with good results [2, 3]. So is it worthwhile to have another gadget in the operating room

A. P. Singh (✉) · D. Gulati · A. P. Singh · V. Garg
Department of Orthopaedics, UCMS & GTB Hospital,
Dilshad Garden,
Delhi, India
e-mail: docajaypal@gmail.com

S. Mahajan
Department of Orthopaedics, Gian Sagar Medical College,
Punjab, India

for fixation of a particular subtype of fracture which can be fixed with other methods as well? In our opinion, this technique cannot be recommended for use unless a cost–benefit analysis proves its utility.

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