Comment on Kritsaneephaiboon et al.: Minimally invasive plate osteosynthesis of distal tibial fracture using a posterolateral approach: a cadaveric study and preliminary report

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Dear editor,

We have read with great interest the article entitled “Minimally invasive plate osteosynthesis of distal tibial fracture using a posterolateral approach: a cadaveric study and preliminary report” by Kritsaneephaiboon et al. [1]. They described a posterolateral approach combined with the MIPO technique to treat distal tibial fracture in one patient and the anatomical relationships between the posterior tibial artery, tibial nerve, sural nerve, lesser saphenous vein and the plate in a cadaveric study. They concluded that this protocol could be a reasonable and safe treatment option for distal tibial fractures (including the pilon fractures) with anterior soft-tissue problem. However, there are some concerns regarding this study.

First, the case reported by the authors did not involve the articular surface of the distal tibia. They also stated that their technique could be used in pilon fractures. However, in our opinion, MIPO would cause great difficulty with the articular reduction for pilon fractures. As is known, most pilon fractures are characterised by the severe comminution of the articular surface, especially the type C3 fractures. As to the treatment for this type of fracture, both soft-tissue protection and anatomical reduction of the articular surface should be considered. For MIPO techniques, the limited incision is usually not large enough to allow visualisation of the joint surface and direct manipulation of fracture fragments, especially the die-punch fragments. Borens et al. [2] retrospectively evaluated 17 patients with type C pilon fractures, who were treated with MIPO techniques. Articular reduction was

maintained in only four patients and seven patients developed moderate arthritis.

Second, an L-shaped contralateral anterolateral distal tibial locking plate was placed through a distal 2.5-cm posterolateral incision to stabilise the fracture. In our opinion, for most pilon fractures, the distal incision is too small to expose the articular surface, drill and place the screws, especially the medial screw for fixation of the medial fragments. Perhaps, the posterolateral incision should be enlarged or an additional small posteromedial incision should be used.

Third, the case reported by the authors had no fibular fracture. However, most distal tibial fractures are associated with fibular fractures. We would like to know how to deal with the fibular fracture when the MIPO techniques through the posterolateral approach are used to stabilise the tibial fracture. If a traditional posterolateral approach was used, both the tibial and fibular fractures could be simultaneously treated through the same incision [3].

Finally, we think their techniques might be more suitable for single distal tibial fractures with no involvement of the fibula and distal tibial articular surface rather than the classic pilon fractures.

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