Correspondence

Bone transport of the tibia with a motorized intramedullary lengthening nail — a case report

Sir–We read with interest the article by Kold and Christensen (2014). However, we think that there are some points that could be discussed. The authors used a custom-made motorized nail for 5 cm bone transport and lengthening instead of acute bone shortening with compression at the nonunion site and lengthening via proximal osteotomy. Acute shortening should be considered for tibial defects of ≤ 3 cm. This method offer the advantage of immediate bone to bone contact which initiate the healing process early. Another advantage is the ability to bone graft the docking site immediately. Furthermore, acute shortening results in a stable fracture which allows the patient to walk and bear weight soon after surgery. This method decreases the time of healing and therefore additional surgeries might have been prevented.

Saleh and Rees (1995) compared the results of the treatment of bone defects by bone transport with those of acute limb shortening followed by lengthening. They obtained excellent results in 12 patients and good results in 4. They found a shorter treatment time and fewer complications with the limb shortening and relengthening method. Paley et al. (1989) have discussed the importance of obtaining bone contact for greater stability of the construct and described several methods for obtaining this by open or closed means.

Secondly an intramedullary nail with multiaxial locking screws rather than uniaxial locking screws might improve the stability and provide earlier weight bearing. We think that stability of the constructs should be improved as possible in the treatment of such complex cases.

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Sir–Thank you for the interest in our work. We agree that acute shortening and subsequently bone lengthening should be considered whenever possible. Indeed this is our preferred method when treating less than 3 cm long bone defects with external circular frames. However, in the current case acute shortening was not performed for several reasons. We had to remove a loose plate and broken screws through a long longitudinal scar already present. Additionally the patient had very stiff soft-tissues due to previous surgeries. Acute shortening of the 3 cm bone defect would have resulted in an oval-shaped wound, which would have been impossible to close primarily.

We chose to perform the bone transport and subsequent bone lengthening only by use of an intramedullary nail to spare the patient from any external fixation. When performing acute shortening of the tibia with an external circular frame we always carefully observe the arterial perfusion distal to the shortened area. In case of compromised arterial perfusion due to the acute shortening it is always possible with the external fixator immediately to undo the shortening. However, this was not a possibility when using the intramedullay bone transport nail and therefore we chose not to do any acute shortening.

In the current case acute shortening would not have shortened treatment time. The docking site was healed 2½ months earlier than the proximal bone regenerate was healed. The two complications (1 loosened proximal screw and removal of 1 distal tibio-fibular screw) would not have been avoided by acute shortening of the tibia.

The patient was partial weight-bearing after 2 months and fully weight-bearing after 5 months. The docking site as well as the bone regenerate healed within the expected time and no secondary loss of reduction was observed. The stability of the nail construct therefore seemed to be sufficient in our case.

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Kold S, Christensen K S. Bone transport of the tibia with a motorized intramedullary lengthening nail–a case report. Acta Orthop 2014; 85 (2): 211-3.

Paley D, Catagni M A, Argnani F, et al. Ilizarov treatment of tibial nonunions with bone loss. Clin Orthop 1989; (241): 146-65.

Saleh M, Rees A. Bifocal surgery for deformity -and bone loss after lower-limb fractures. Comparison of bone-transport and compression-distraction methods. J Bone Joint Surg (Br) 1995; 77 (3): 429-34.

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