

LETTER TO THE EDITOR

Soft-plastic brace for lower limb fractures in patients with spinal cord injury

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I refer to the article by Uehara *et al.*¹ in volume 51 of *Spinal Cord*. In the Conclusion section of their Abstract, the authors state their final opinion that a soft-plastic brace is a practical option for a conservative approach to treat fractures of the lower extremities in patients with spinal cord injury.

In their Introduction they draw attention to the fact that paraplegic patients sometimes suffer fractures of the lower limbs. They cite various treatment options from the literature, but only the paper by Baird *et al.*² deals with fractures of the femur, and not those by Sarmiento³ and Thomas and Meggitt.⁴

They cite the paper published by Freehafer and Mast in 1965⁵ (!) as an indication of the elevated rate of morbidity and complications resulting from surgery; more up-to-date papers on the treatment of fractures of the lower extremities in paraplegic patients^{6,7} are not even mentioned.

Further on in the paper the authors assert that the soft bone invariably found in such patients cannot support fixation and that precise alignment is not of critical importance.

In the Discussion, only literature dating from 1970 to 1981 is cited in support of conservative treatment alone. Conservative treatment of femoral shaft fractures has been abandoned in modern orthopaedic surgery. In the International Orthopaedic Community, operative procedures are used almost exclusively.

The paper by Uehara *et al.*¹ gives 130 days as their patients' mean length of stay in hospital. The patients treated by Meiners *et al.*⁶ were similar but were in hospital for a mean of 76 days, which means there are clear advantages to operative treatment.

We cannot accept the authors' assertion that precise alignment is not of critical importance. Deviations from the axis in the femorotibial angle affect the sitting position, as does shortening of supracondylar fractures of the femur, which we assume must have occurred, although it is not documented.

The authors make absolutely no reference to fractures of the trochanter or ankle regions. In what way can a soft-plastic brace help in these regions?

Operative treatment of fractures of the lower extremities of chronically paraplegic patients is successful and has been shown to be a low-risk approach.⁷ The treatment with a brace presented by Uehara *et al.*¹ is certainly a practical alternative, but it is not the only method. The advantages and disadvantages of both conservative and operative methods must be described to each patient, who should then be allowed to decide whether she/he is willing to accept additional malformations following conservative treatment.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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- 1 Uehara K, Akai M, Kubo T, Yamasaki N, Okuma Y, Tobimatsu Y *et al.* Soft-plastic brace for lower limb fractures in patients with spinal cord injury. *Spinal Cord* 2013; **51**: 327–330.
- 2 Baird RA, Kreitenberg A, Eltorai I. External fixation of femoral shaft fractures in spinal cord injury patients. *Paraplegia* 1986; **24**: 183–190.
- 3 Sarmiento A. Fracture bracing. *Clin Orthop Relat Res* 1974; **102**: 152–158.
- 4 Thomas TL, Meggitt BF. A comparative study of methods for treating fractures of the distal half of the femur. *J Bone Joint Surg Br* 1981; **63**: 3–6.
- 5 Freehafer AA, Mast WA. Lower extremity fractures in patients with spinal-cord injury. *J Bone Joint Surg Am* 1965; **47**: 683–694.
- 6 Meiners T, Keil M, Flieger R, Abel R. Use of the ring fixator in the treatment of fractures of the lower extremity in long-term paraplegic and tetraplegic patients. *Spinal Cord* 2003; **41**: 172–177.
- 7 Bärlehner C, Böhm V, Flieger R, Meiners T. [Surgery for fractures of the lower extremities in cases of chronic spinal cord injury]. *Orthopäde* 2005; **34**: 137,138,140–143.