with standard instrumentation until the distal stem segment is visualised. The slender aspect of the extracted proximal portion of the stem is used to select a tight-fitting trephine (Fig. 2). The trephine is inserted into the femoral canal engaging the distal portion of the stem in order to ream the cement mantle. Saline irrigation may be needed to avoid overheating. Periodic checks should be made of the distal segment. Once there is an appropriate space, a grasper can be used to remove the stem. However, if this is difficult, continue to ream and the stem will become trapped within the trephine, and can then be removed with it.

DISCUSSION

Despite the rarity of broken Exeter stems, this technique provides an effective method for removing well-fixed distal components. It avoids the need to create a distal window, which may weaken the femur and leave it prone to fracture.

Reference

1. van Doorn W, van Biezen F, Prendergast P, Verhaar J. Fracture of an Exeter stem 3 years after impaction allografting – a case report. *Acta Orthop Scand* 2002; **73**: 111–3.

Application of hip spica cast using a box-and-bar technique

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BACKGROUND

Application of a hip spica is one of the most commonly performed procedures in paediatric orthopaedics. A commercial hip spica table is not always available, and is expensive. A straight spine and pressure free abdomen are vital for the comfort of the child and to allow expansion of thorax and abdomen. This reduces the chances of mesenteric artery syndrome.¹

TECHNIQUE

The technique utilises a box-and-bar configuration for hip spica application. A square wooden box is used with a slot in the centre in which the bar slides. This can be placed on any ordinary operating table (Fig. 1A,B). After anaesthesia, the child is placed on the box. The edge of the box is level with the rib cage, with the spine and sacrum supported by the bar. The assistant holds the legs with hips flexed and abducted (Fig. 2). Padding is applied from the rib cage to the medial malleolus of both limbs, followed by plaster cast. The child is supported whilst the assistant removes the supporting bar and later the wooden box. The presence of the bar creates space for expansion of abdomen and no window is needed for this.²

Figure 1 (A,B) Two views of the box-and-bar apparatus.

Figure 2 Child on the box-and-bar apparatus.

DISCUSSION

This technique has been used successfully at our institution for more than 15 years in several hundred hip spica applications. The same apparatus has been used for all children from a few months to more than 6 years of age with no modifications. We found this technique to be simple, safe, economical and reproducible. It can be used at any centre without special equipment or operating table modifications.

References

1. Hutchinson DT, Bassar GS. Superior mesenteric artery syndrome in paediatric orthopaedic patients. *Clin Orthop* 1990; **250**: 250–7.
2. Kiter E, Demirkan F, Kiliç BA, Erkula G. A new technique for creating an abdominal window in a hip spica cast. *J Orthop Trauma* 2003; **17**: 442–3.