Technical Section

TECHNICAL NOTES AND TIPS

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Modified arrangement of supports to improve intraoperative assessment of stability in total hip arthroplasty

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BACKGROUND

Intraoperative assessment of stability during total hip arthroplasty (THA) aims to minimise the risk of postoperative dislocation. In the lateral position the patient is traditionally supported by a posterior sacral bolster and two small anterior pads placed on both anterior superior iliac spines (ASIS). This commonly described configuration restricts flexion to 90° (Fig 1) and potentially limits intraoperative assessment of stability. We report a modified arrangement of supports that allows a greater range of movement.

Figure 1 Limited intraoperative assessment of hip flexion (to 90°) due to traditional positioning of supports

TECHNIQUE

Posterior support is achieved with a sacral bolster. Anterior support is applied with a standard commercially available two-pad bolster. These are placed at approximately 45° so that the inferior pad rests on the lower ASIS and the superior pad rests over the pubis (Fig 2). This provides flexion past 90° and therefore a more physiological assessment of stability (Fig 3). Greater anteroposterior compression of the supports may be required to prevent the pelvis falling forward.

Figure 2 Alternative positioning of the anterior support at 45°; bolsters positioned over the anterior superior iliac spine and the pubis

Figure 3 Improved intraoperative assessment of flexion due to positioning of the supports

DISCUSSION

Traditional supports allow the pelvis to be held in the correct orientation to allow cup positioning but limit flexion and can lead to an inaccurate assessment of stability. Intraoperative stability assessed within a limited range of movement may give false reassurance in a hip that will be unstable outside of this range postoperatively. Conversely, the thigh may impinge on the support while testing for stability and a stable THA may appear to be unstable intraoperatively. The method described here allows intraoperative assessment of stability throughout a physiological range of movement and therefore more closely resembles postoperative stability.