

Use of an Intraoperative Limb Positioner for Adjustable Distraction in Acetabulum Fractures with Femoral Head Protrusion

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Purpose: Anatomic reduction of acetabular fractures with femoral head protrusion requires lateralization of the femoral head to facilitate reduction and definitive fixation. Several methods exist to apply traction in pelvis and acetabular surgery. Limb positioners designed originally for upper extremity surgery and for arthroscopic procedures have gained favor in the lower extremity due to their ease of adjustment intraoperatively. The use of a limb positioner has not been previously described for this application. Here we report the application of a technique to modify an arthroscopic limb positioner to apply easily adjustable distraction vectors in acetabular fracture surgery.

Methods: A 71-year-old male fell from a ladder, sustaining an associated both-column acetabulum fracture with medialization of the femoral head (Fig. 1A). He was placed supine on a radiolucent table. A limb positioner was attached to the table (Fig. 1B). A 5.0-mm Schanz pin was inserted into the femoral neck and head in line with the femoral neck, and with minimal distraction the head was lateralized and located back under the anterior column (Fig. 1C). The Schanz pin was affixed to the limb positioner using a modified limb positioner adaptor, in which a universal chuck had been welded to the adaptor (Fig. 1D). The attachment is easy to affix to the positioner, as the manufacturer’s connector for the limb positioner is cut and welded to a universal T-handle chuck. Distraction was applied through the Schanz pin and maintained with the pneumatic limb positioner (Figs. 1 E-G).

Results: An ilioinguinal approach was made to the right acetabulum. The fracture was reduced and clamped. Buttress plates were applied to the anterior column anterior and medially. Distraction was adjusted and maintained throughout the case as needed. Postoperative plain radiographs demonstrated anatomic reduction (Figs. 2A-C).

Conclusion: A limb positioner can provide appropriate on-table traction in pelvis and acetabular surgery to neutralize deforming forces and facilitate reduction and fixation.

Figure 1

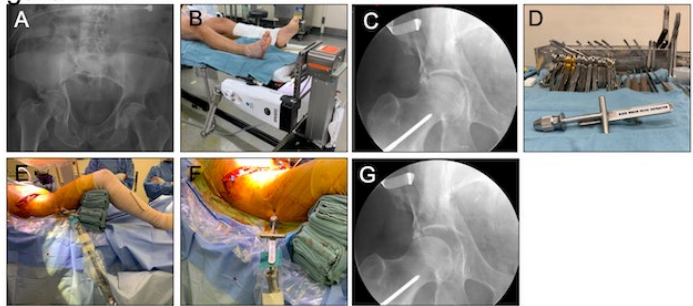
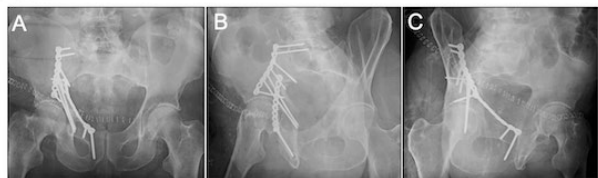


Figure 2



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