CORRECTING ROTATIONAL DISPLACEMENT
OF FEMORAL NECK FRACTURES

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When a displaced subcapital hip fracture has been manipulated and radiography has confirmed good alignment of the fracture on both anteroposterior and lateral views, it is sometimes observed that the diameters of the femoral neck of the proximal and distal fragments are different, or that a spike of bone protrudes from one or other fragment (Fig. 1). The femoral neck in cross-section is not circular and therefore rotational displacement might explain this appearance. We have used a Dynamic Hip Screw (DHS) to fix three Garden stage 4 subcapital fractures, in men aged 23, 30 and 80 years. In each case it was possible to use the DHS to rotate the proximal fragment in both directions until the best alignment was found.

Technique. Under anaesthesia the fracture is manipulated into acceptable alignment. The hip is screened using an image intensifier. Through a lateral incision a guide wire is passed accurately up the femoral neck into the centre of the femoral head. A supplementary guide wire is now passed superior to the first leaving enough room for the DHS reamer and tap which are passed over the first wire. A screw is inserted and firmly impacted into the femoral head. The supplementary guide wire is withdrawn until it is just out of the proximal fragment and the screw introducer is gently rotated, anti-clockwise first, whilst the hip is screened. When the fracture is reduced, the supplementary guide wire is tapped back into the femoral head and the screw is turned sufficiently to allow correct placement of the plate. We prefer to augment the fixation with an AO cancellous screw passed along the track of the supplementary guide wire.

Discussion. Rau, Manoli and Morawa (1982) noted the tendency of the hip screw to rotate the proximal fracture fragment and suggested that this property contributed to the poor results in their patients with displaced subcapital hip fractures. Skinner and Powles (1986) reported better results but they used a supplementary guide wire in a proportion of their cases.

Fig. 1

It is possible that an attempt at rotational correction using our method might sometimes result in the screw backing out of the bone when turned anti-clockwise, we therefore emphasise the importance of attempting anti-clockwise displacement. We were initially concerned that our technique would depend on the bone quality; however it worked in both young and old patients.

The amount of rotational displacement of a femoral neck fracture is impossible to determine from standard radiographs; however we believe that it is common after manipulating Garden stage 4 fractures. The displacement of the fracture in the figure was accepted, but this is just the kind of appearance that can be improved by rotation. We do not advocate accepting a poor reduction in the hope of correcting it during operation; we aim at making a good reduction anatomical.

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REFERENCES
