RECURRENT DISLOCATION FOLLOWING HIP REPLACEMENT:
BRIEF REPORT

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A new method of preventing recurrent dislocation following total hip replacement was described by Olerud and Karlström (1985). It involves augmentation of the acetabular component with a sector cut from another acetabular prosthesis and screwed to the original implant.

This procedure was performed on three of our patients with recurrent dislocation, but in each case the hip continued to dislocate after the operation, despite the fact that all three were performed (as recommended in the original paper) by experienced surgeons. In each case the failure was due to impingement of the neck of the femoral component on the augmentation. The added sector acted as a fulcrum for the femoral neck, causing the femoral head to be levered out of the acetabulum in the opposite direction to the original dislocation (Fig. 1).

Two factors were identified as being responsible for the impingement. First, undue thickness of the added sector: in most cases an increased acetabular depth of 2 mm is sufficient to prevent dislocation providing the original components are correctly positioned (Olerud, personal communication). If, however, the acetabular component is not correctly positioned, a thicker sector may be needed. In the original article the thickness of the sector was not specified, but in the accompanying illustration it looked quite thick.

It is, however, possible to estimate from the pre-operative radiographs how thick the sector should be. If the acetabulum is correctly positioned, a sector 2 mm thick at its inner edge should be used; if it is malpositioned a slightly thicker sector may be needed. The most important step is to put the hip through a full range of movement after the sector has been positioned and to ensure that the hip is stable and that no impingement occurs.

The way in which the sector is cut also is important. It can be seen from the diagram that if it is cut from a ring as in Fig. 2a, its cross-section will be rectangular. But if the sector is cut as described in the original paper (Fig. 2b), the cross-section is wedge-shaped and the increased thickness will make impingement more likely.

The second factor which may cause impingement is the position of the sector in relation to the cup. If it is not concentric with the cup, it may overhang; this will lead to earlier impingement. Accurate positioning of the augmentation may be difficult, but is important, as even small errors may lead to dislocation.

Conclusions. The technique described by Olerud and Karlström is an elegant solution to the problem of recurrent dislocation following total hip replacement. It is, however, a mistake to suppose that if a little augmentation is good, then more must be better; a thickness of 2 mm is sufficient.

The operation to insert the augmentation is not as easy as it may seem. Access may be limited and positioning the sector accurately requires great care. A variety of sectors should be prepared prior to operation. They should be cut as shown in Fig. 2a and they should be no thicker than is necessary, in order to avoid impingement.

REFERENCE