BRIEF REPORTS

REMOVAL OF FEMORAL COMPONENTS DURING REVISION KNEE ARTHROPLASTY

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The removal of a femoral component during revision total knee arthroplasty can be a formidable problem; it is often firmly fixed to the underlying bone, which is easily damaged. We have found that a Gigli saw is an excellent instrument for facilitating the removal. In the 10 cases where we have used it, rigidly fixed femoral components have been removed within 10 minutes without complications and with minimal damage to the underlying bone.

Technique. Debridement of hypertrophic synovium and soft tissue from the anterior, medial, and lateral margins of the femoral component is essential to ensure exposure of the interfaces. A Gigli saw is then placed at the most proximal edge of the femoral component, and directed distally and anteriorly at an angle of 45° (Fig. 1A). The blade is kept in contact with the metal to minimise bone resection. This may damage the Gigli saw; several wires should be available. Depending upon the design of the femoral component a variable amount of distal interface will be accessible to the saw wire. The wire is removed when contact with the central stem or peripheral pegs is made (Fig. 1B).

Attention is then directed to the posterior condyles where holes are drilled, using a 2.4 mm Steinmann pin or drill bit, directed obliquely adjacent to the metal towards the intercondylar notch (Fig. 1C). The drill emerges at the inner interface, and the flattened loop at one end of the Gigli saw is threaded through (Fig. 1D). Sawing action is then applied pulling distally to divide most of the remaining interface posterior to the studs of the prosthesis (Fig. 1E). The remaining intact parts of the interface on each posterior condyle can be freed with an osteotome (Fig. 1F). A femoral extractor or bone tamp can then be used to remove the component.

Fig. 1

Discussion. We have found the Gigli saw to be particularly well suited for removing well fixed cemented and cementless femoral components. The accessibility of the distal femur affords ample clearance, the thin saw blade is readily engaged between prosthesis and bone, and the saw cuts well through polymethylmethacrylate. Dividing the interface before extraction minimises the risk of avulsing bone.

It is important to be familiar with the design of the component being removed. The 'saddle' recess under the trochlear surface of some femoral components may make the technique we describe more difficult. For the majority of modern designs, including the current cementless prostheses, this method is easy, conservative, expedient, and inexpensive.

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