THE OMEGA LATERAL APPROACH TO THE HIP

I. D. LEARMONTH, P. E. ALLEN

From Bristol Royal Infirmary, England

We describe a modified lateral approach to the hip which exploits the functional continuity of gluteus medius and vastus lateralis and their dense crescentic attachment to the greater trochanter. The gluteus medius is not incised or split, but is detached and mobilised with gluteus minimus as one unit. This facilitates reattachment of the glutei and helps to preserve abductor function.

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Exposure of the hip for arthroplasty should provide adequate access to the acetabulum and the resected neck of the femur with minimal disturbance of muscle function. The senior author (IDL) has used a modification of the anterior partial trochanteric osteotomy (Dall 1986) in over 1000 total hip replacements, with various methods of reattaching the anterior trochanteric fragment. None of these proved ideal and all were associated with local irritation, sometimes causing trochanteric bursitis.

The approach has been modified to facilitate reattachment of the abductors and to reduce the incidence of bursitis.

OPERATIVE TECHNIQUE

The approach can be used with equal facility in either the lateral or the supine position. A lateral skin incision is centred over the greater trochanter and its proximal limb curves gently posteriorly. In the presence of an external rotation deformity, the incision should be placed somewhat more posteriorly.

The fascia lata and gluteus maximus are split in the line of the incision, and the anterior and posterior flaps retracted to expose the greater trochanter and the muscles attached to it. A diathermy needle is used to make a 5 cm linear incision in the vastus lateralis just anterior to the lateral intermuscular septum; this is continued proximally in the shape of the Greek letter omega through the thickened crescentic attachments of vastus lateralis and gluteus medius to the greater trochanter (Fig. 1).

Tensor fascia lata has been retracted anteriorly and the gluteus maximus posteriorly. The omega-shaped incision is made in the posterior third of vastus lateralis distally, around the thickened crescentic trochanteric attachment of the two muscles, and then posterior to the gluteus medius tendon proximally. The course of the superior gluteal nerve is indicated where it passes anteriorly, sandwiched between gluteus medius and gluteus minimus. It is well protected, since the entire mass of these two muscles is detached and carried forward.
form an ‘osteaponeurotic’ flap. The dissection is continued and curved around the top of the greater trochanter, using a small osteotome of about 1 cm width in order to include the attachment of the tendon of gluteus minimus with the raised cuff of tissue. In osteoarthritic hips this tendon is often atrophied, but when it is substantial and is divided separately, it should be tagged with a stitch and resutured at the end of the procedure.

The entire muscle mass of gluteus medius, minimus and vastus lateralis is then mobilised off the anterior capsule of the hip by sharp dissection until retractors can be placed over the anterosuperior rim of the acetabulum (Fig. 2). Division of the piriformis tendon may be necessary if the proximal femur is tethered posteriorly. A T-shaped incision in the capsule (Fig. 3) allows the hip to be dislocated by flexion, adduction and external rotation.

At the end of the operation, the abductors are reattached with interrupted non-absorbable sutures. It is preferable to alternate mattress sutures with Kessler-type stitches, since these give an excellent purchase in the tendino-aponeurotic tissues (Fig. 4). A secure repair is easily achieved proximally and distally, but rarely when the anteroinferior tissues are somewhat tenuous. The repair in this region is augmented by sutures passed through holes drilled in bone.

**DISCUSSION**

Gluteus medius, gluteus minimus and tensor fascia lata are supplied by branches of the superior gluteal nerve; this emerges from the great sciatic notch above the upper border of piriformis and then disappears deep to the posteri-
be divided or damaged by an uncontrolled proximal extension of such a split. Heavy retraction in a tight hip may cause denervation of the anterior halves of gluteus medius and minimus and of the tensor fascia lata.

In such a tight hip with an external rotation deformity, intact posterior fibres of gluteus medius may tether the proximal femur and impair access to the medullary canal. When the bone is osteoporotic, the posterior part of the greater trochanter may be avulsed by this tight section of muscle during attempts to obtain an adequate exposure of the proximal femur. It seems preferable to avoid splitting the glutei. Detachment of the muscles from the centre of the greater trochanter, rather than using the omega loop, divides the most tenuous part of the aponeurosis continuum between gluteus medius and vastus lateralis. This makes reattachment much more difficult and any failure will compromise abductor function.

Van den Aardweg, Learmonth and Grobler (1992) reviewed 414 primary arthroplasties which used a modified anterior trochanteric osteotomy, and found that although bony union had occurred in 95%, trochanteric bursitis had required the removal of the fixation device in 11%. This incidence of reoperation is too high and we therefore modified the technique without losing the excellent exposure obtained with other lateral approaches (direct lateral (Hardinge 1982); Stracathro (McLauchlan 1984); and APTO (Dall 1986)).

We have used the new approach in over 150 primary hip arthroplasties. The abductor repair was tested through a full range of movement of the hip during operation and there were no disruptions. In 15 of these patients, we placed wire markers on the contiguous surfaces of the repaired abductor muscles and vastus lateralis; radiographs taken at eight to ten weeks after operation showed that they had not been displaced.

The omega approach allows complete detachment of gluteus medius and minimus and thus reduces any risk of damage to the superior gluteal nerve. Vastus lateralis is split near its posterior border, which avoids denervating a large portion of the muscle. The incision around the trochanter is placed in the thick portion of the tendinous insertions of gluteus medius and vastus lateralis, which provides a good cuff of tissue for reattachment and thus preserves abductor function.

We recommend this approach for primary and uncomplicated revision arthroplasty of the hip.

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REFERENCES


