Technique for obtaining iliac bone graft for anterior cervical fusion

Technical note

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Modifications in the operative technique for removing bone dowels from the iliac crest for anterior cervical interbody fusion are described. The technique has been successful in alleviating hip pain following graft removal.

KEY WORDS • bone dowel • iliac crest • postoperative pain

Surgeons have complained that many of the patients subjected to anterior cervical fusion had more pain at the graft site than at the site of the anterior cervical fusion. We too have noted this problem, and it is one of the reasons for the development of a bone bank.

We are describing modifications in the technique for removing the bone dowel from the iliac crest that have reduced the incidence of this complaint.

Operative Technique

The patient is positioned with a sand bag beneath the right buttock to elevate the iliac crest and a pillow beneath the knee to flex it to relax the fascia lata. After adequate preparation and draping, the skin, subcutaneous tissue, and muscle are infiltrated with 10 cc of 1% xylocaine with 1/200,000 epinephrine. An oblique incision 9 cm long is made 4 cm below the superior margin of the right iliac crest, paralleling the lines of tension of the skin. The incision is carried through the skin and the most superficial subcutaneous layer. Blunt dissection with the tips of large Mayo scissors will then separate the subcutaneous tissue in a vertical direction.

The fascia lata is split in the direction of its fibers from the superior margin of the iliac crest inferiorly for approximately 8 to 9 cm. The surgeon should avoid opening the fascia with the T-shaped incision as this will cause the patient increased postoperative pain. The muscle and periosteum are elevated from the iliac crest with a large periosteal elevator, and a dowel cutter is used to remove bone from immediately below the superior aspect of the crest. The iliac muscle on the inside of the crest provides good protection, but care should be taken not to push the dowel cutter too far through the crest when the posterior cortex has been cut. Bone bleeding can be controlled with bone wax or Gelfoam soaked in thrombin. After closure of the muscle fascia, 2 cc of 10% Kenalog solution is injected at random into the margins of the muscles beneath the fascia. The incision is closed with subcutaneous sutures and running nylon sutures in the skin.

Discussion

There have been no complications using

*Kenalog solution is manufactured by E. R. Squibb & Sons, 745 Fifth Avenue, New York, New York 10022.
Iliac bone graft for anterior cervical fusion

this technique in 52 patients; specifically there have been no wound hematomas and no infections. Eleven of these patients had two-level fusions, requiring removal of two dowels. Two patients had been operated on previously; both stated, when asked about pain in the donor site, that they were surprised at how much less painful the new hip wound had been as compared to pain on the opposite side at the time of the first operation. The reasons for this improved response at the donor site are: the skin incision paralleling the lines of tension, the vertical blunt dissection of the subcutaneous tissue, the splitting of the fascia lata in the direction of its fibers, and the injection of Kenalog into the traumatized muscle.

References


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