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# REPAIR OF MIDLINE ABDOMINAL INCISIONAL HERNIA BY GRACILIS MUSCLE TRANSFER

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## INTRODUCTION

A midline lower abdominal incisional hernia is often seen in women following emergency obstetrical and gynaecological operations. The condition is often associated with divarication of the rectus muscles and aggravated by repeated pregnancies and obesity.

It is usually possible to repair the defect by using and repositioning the local tissues. The insertion of foreign material such as tantalum gauze or polyester mesh is sometimes advocated for the larger hernia, but the risk of complications is real. A new technique of closing the hernial defect with the patient's own gracilis muscle is described in this short communication.

## TECHNIQUE

The patient is placed supine with the legs widely abducted and externally rotated. A linear incision is made on each thigh from 3 inches below the pubic tubercle to the adductor tubercle. The gracilis muscle is identified, divided close to its insertion and raised proximally towards its origin taking care to preserve its neuro-vascular pedicle. Sufficient mobilisation is carried out to allow the muscle belly to reach as high as the level of the umbilicus. The thigh wound is then closed in layers except at its upper extremity (Fig. 1). The muscle is carefully wrapped in a saline pad for protection.

The incisional hernia scar is now excised and skin flaps raised on each side to define the anterior surface of the rectus sheath. The hernial sac is now opened in the midline and its extent confirmed, clearly defining the medial border of each rectus muscle (Fig. 2). The peritoneal layer is closed with a continuous suture of chromic catgut or any other absorbable synthetic material (Fig. 3).

Through a stab incision close to the medial end of the inguinal ligament the gracilis muscle on each side is drawn into the abdominal wound so that it can lie vertically without tension and without kinking the neuro-vascular pedicle, over the sutured peritoneal layer (Fig. 4). The distal tendinous part of each gracilis muscle is now sutured to the fibrous tissue around the umbilicus and to the medial border of the adjacent rectus muscle at the level of the umbilicus with interrupted nylon or silk (Fig. 5). No attempt is made to suture the gracilis to the rectus muscle apart from these few sutures at the upper end of the defect. This deliberate step should allow the gracilis muscle to contract freely and independently over the defect. The 2 leaves of the hernial sac are then overlapped and sutured in 2 layers with interrupted nylon or silk sutures (Fig. 6). The wound is closed in layers and a vacuum suction drain inserted.

## DISCUSSION

There are occasions when the poor quality of the local tissues may make it difficult or impossible to repair an abdominal incisional hernia. Experience has shown that the

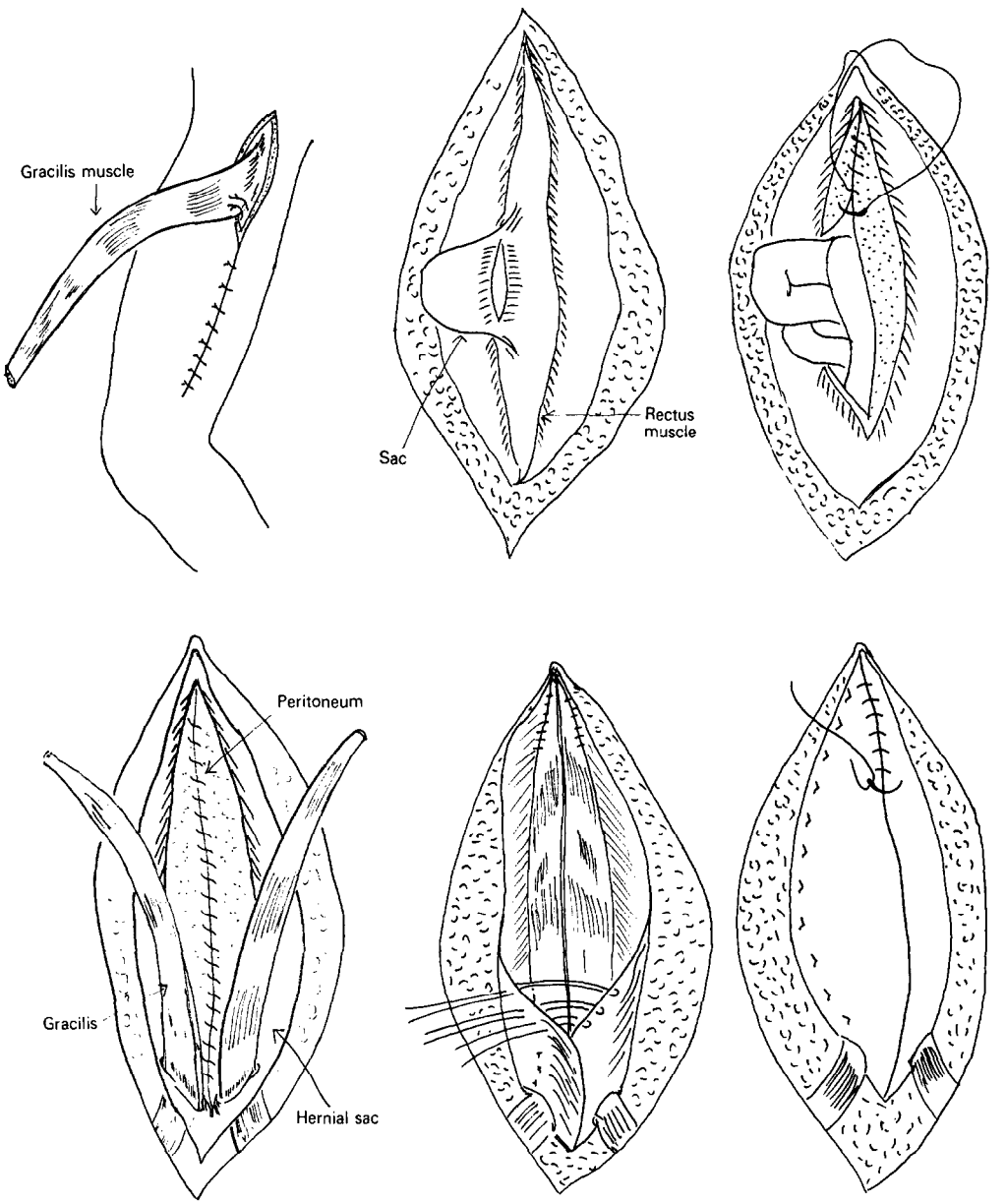


FIG. 1. Gracilis muscle dissected from the thigh, preserving the neuro-vascular pedicle.

FIG. 2. The incisional hernia sac has been identified and opened. The edges of each rectus muscle are clearly defined.

FIG. 3. After excising the sac and the excess thin peritoneal tissues, the peritoneal layer is closed with a continuous suture.

FIG. 4. The two gracilis muscles are brought into the abdominal wound and laid vertically over the repaired peritoneum.

FIG. 5. The upper end of the gracilis muscle and tendon is sutured to the fibrous tissue around the umbilicus. A few interrupted sutures anchor the upper end of the gracilis to the adjacent belly of the rectus muscle. A double-breasted repair of the aponeurotic layer is begun from below upwards.

FIG. 6. The closure of the aponeurotic layers is complete.

gracilis muscle may provide sufficient viable autogenous tissue to offer the patient an acceptable repair. The fact that the muscle transplant can actively contract could be regarded as an added advantage of this technique.

This method of repair of an abdominal incisional hernia was first used in 1974 and to date 20 patients have been treated. Follow up, 5 years later, on the earlier treated patients shows that the gracilis muscles are still functionally active and in no case has the incisional hernia recurred.