The rectus abdominis flap

Since its description in 1982 by Hartrampf, this technique of reconstruction has gained great popularity, due mainly to its major advantage: the possibility of reconstructing a breast of satisfactory size and natural consistency without the help of supplementary prosthetic material.

It is, in a way, “the art of using the left-overs”, as the principle of this operation is based on the use of excess subumbilical skin and fatty tissue to restore the lost substance and volume, the skin island being represented by the cutaneo-adipose triangle which is ordinarily sacrificed in an abdominal plasty (fig. 219).

Unlike the latissimus flap, the volume represented by the muscle is negligible, and it is the muscle itself which serves as the vascular pedicle. It does in fact contain the anastomotic plexus between the superior and inferior epigastric arteries, still called the epigastric arch.

Fig. 219. The myocutaneous flap of the rectus abdominis is based on utilisation of the excess subumbilical skin and fatty tissue

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It must be stressed at the outset that, to benefit from this fine intramuscular vascular plexus, it is necessary to raise the muscle throughout its extent.

While this is a technique that gives excellent results, it requires — apart from the proper indications — a degree of experience as regards both the dissection of the pedicle and the stage of assessment of the vitality of the skin component and of its modeling, and should not in our view be performed in inexpert hands.

Anatomy

The muscle belly and its sheath

The rectus abdominis muscle (fig. 220) originates from the inner end of the 5th rib, the costal cartilages of the 5th, 6th and 7th ribs, and the xiphoid process. From here the muscle bundles travel vertically towards the pubis, the muscle belly becoming more compact and narrower below the umbilicus. The muscle ends as a short flattened tendon inserted on the pubis, from the pubic spine to the symphysis, and on the symphysis itself.

Fig. 220. Muscular anatomy: left the anterior surface of the muscle with its tendinous intersection; right the posterior aspect of the sheath

Fig. 221. Structure of the rectus sheath.
above: in the supraumbilical region the aponeurosis of the external abdominal oblique forms the anterior layer of the sheath, which is lined by the internal abdominal oblique. The posterior layer, equally firm, is formed by the posterior layer of the aponeurosis of the internal abdominal oblique and the middle of the transversus aponeurosis. The muscle is firmly adherent to the sheath opposite the intersections.
below: below the arcuate line, the aponeurosis of the flat muscles of the abdomen (external and internal oblique and transversus) pass in front of the muscle belly