

Abdominoplasty—Systematization of a Technique Without External Umbilical Scar

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ABSTRACT / The author describes an abdominoplasty emphasizing preparation of the abdominal flap, reinforcement of the muscular aponeurotic wall, treatment of the excess of cutaneous tegument, and careful handling of the umbilicus. He makes three umbilical flaps which are alternately stitched to three other flaps originating on the abdominal wall, which result in a scar hidden inside the umbilicus.

KEY WORDS / Abdomen—Abdominoplasty—Umbilical scar—Umbilicus.

Excess adipose tissue in the abdominal wall, muscular flaccidity, diastasis of the rectus muscles, as well as cutaneous striae and scars on the abdomen give an ungraceful appearance to the body, with enlargement of the abdominal volume and other physical damage.

Etiology

Usually situations which cause distention or enlargement of abdominal volume—as occur in obesity, repeated pregnancies, excessive weight loss, hernias and eventrations—produce distention of the abdominal musculature and skin, as well as diminution of the subcutaneous adipose tissue. In addition to being aesthetically unpleasing, scars from previous surgeries may produce alterations in the anatomic structure of the abdominal wall.

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Technique

Abdominoplasty leaving no external umbilical scar is performed in four steps: (a) preparation of the abdominal flap; (b) treatment of the muscular aponeurosis; (c) treatment of the excess cutaneous tegument; and (d) treatment of the umbilicus.

Preparation of the abdominal flap

A slightly curved horizontal incision line is marked at the limit of implantation of the pubic hairline and ends 2 cm below the anterosuperior iliac spines. This line may be extended if necessary (Fig. 1).

When the undermining reaches the umbilicus (Fig. 2), two important points must be considered: first, division of the infraumbilical flap in order to facilitate operative stages; subsequent and, second, preparation of the umbilicus.

A circle of 2 cm diameter is drawn around the umbilicus. Inside this circle a star with 3 triangular flaps are drawn. Flap A is directed downward and flaps B and C are directed obliquely upward to the right and to the left (Figs. 2, 3, and 4). A thick layer of subcutaneous tissue should be maintained on the umbilical pedicle to assure adequate blood supply (Fig. 4).

Once the umbilicus is prepared, undermining is continued to the rib margin and axillary midline (Fig. 5).

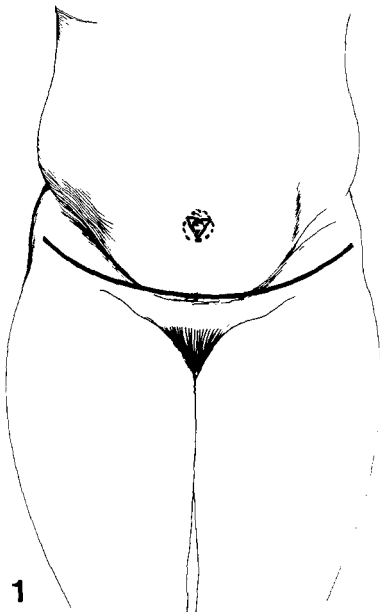
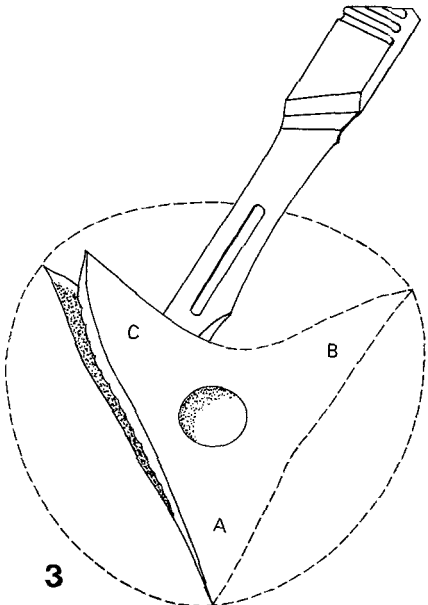
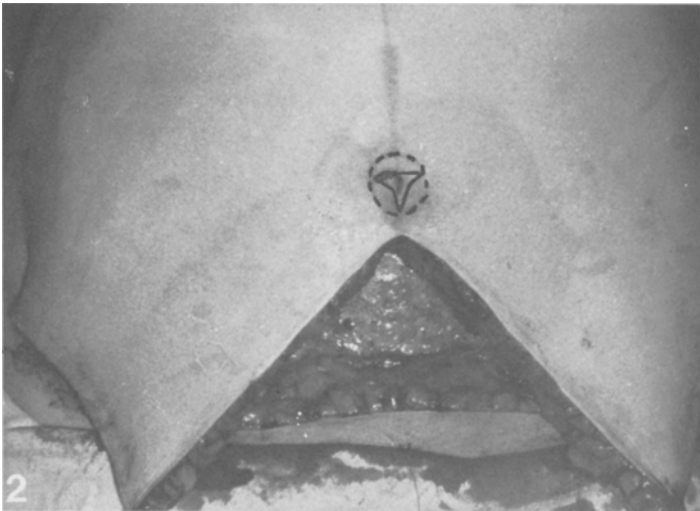


Fig. 1. Incision used in preparation of abdominal flap.



Figs. 2 and 3. Preparation of the umbilicus. Incision with No. 11 scalpel blade.

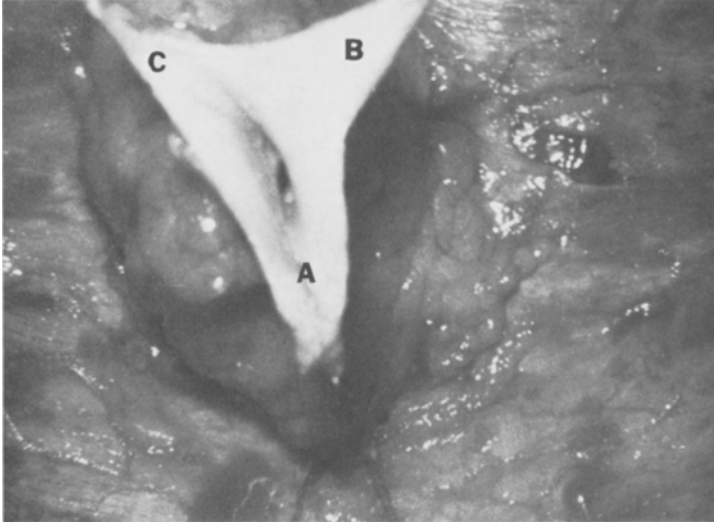


Fig. 4. The shape of the umbilicus as well as the subcutaneous tissue around the umbilical pedicle.

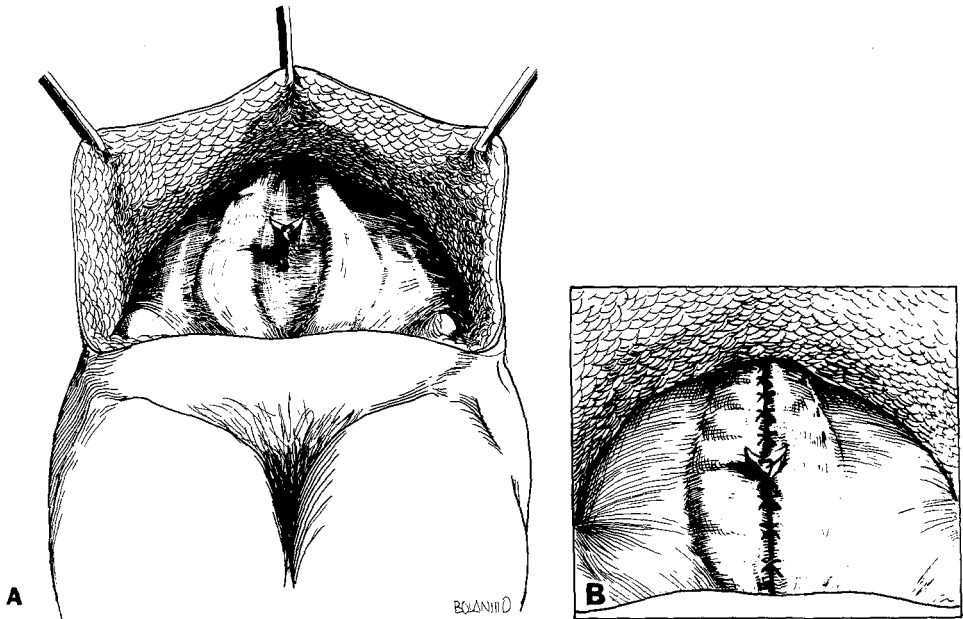


Fig. 5 A and B. (A) Diagram of the undermining area, the umbilicus and flaccidity of the abdominal wall. (B) The umbilicus is shortened and the whole muscular aponeurosis is reinforced with non-absorbable sutures.

Treatment of the muscular aponeurosis

The muscular aponeurosis should be reinforced to correct the muscular flaccidity and diastasis of the abdominal rectus muscle. Isolated stitching with nonabsorbable suture is made along the midline (Fig. 5B). The pedicle of the umbilicus is sutured to the aponeurosis, and it may be shortened if necessary (Fig. 6).

Treatment of the excess cutaneous tegument

When the surgeon resects the cutaneous excess, the patient is placed in a semi-sitting position, the table is bent, the flaps are pulled downward, associated with a lateral rotation from the outside to the inside and in the posteroanterior direction (Figs. 7 and 8). This giratory displacement of the superior flap avoids extensive lateral prolongations of the scar. In cases of extremely flaccid abdomens in which the layer of subcutaneous tissue is thin, this lateral rotation should be accentuated, which increases the thickness of the superior flap.

Treatment of the umbilicus

Once the abdominal flap has been pulled and resected, the position of the umbilicus at the point corresponding to its projection on the flap is marked (Fig. 7). At this point a circle with approximately a 2 cm diameter is drawn. This circle is divided in three equal flaps, with external pedicles and their vertices directed inward, resulting

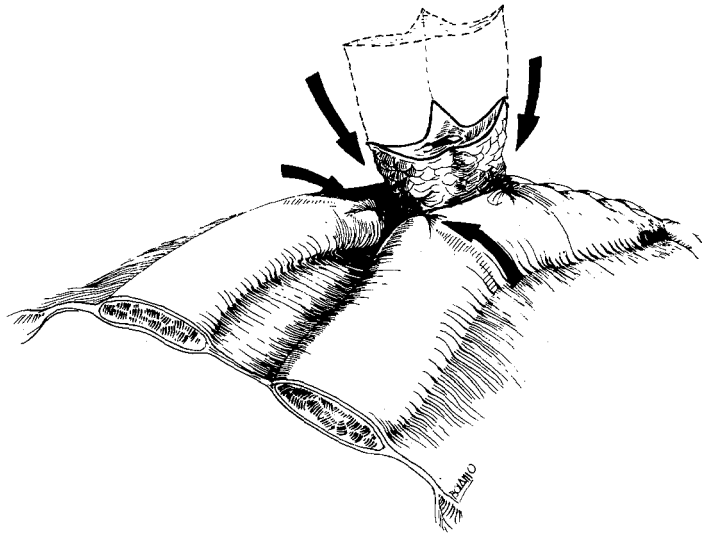


Fig. 6. Shortening of the umbilical pedicle.



Figs. 7 and 8. Direction of traction and rotation of the abdominal flap to be resected.

in one superior and two inferior flaps to the right and to the left (Fig. 9). The subcutaneous tissue corresponding to these three flaps is partially resected to aid its rotation from the surface to the depth (Fig. 10). This procedure creates three central flaps of the umbilicus, which are alternately stitched to three other lateral or external flaps, that have been obtained from the abdominal wall (Figs. 10, 11). Closure is performed with isolated mononylon sutures. We use a special dressing inside the umbilicus for 3 weeks after surgery.

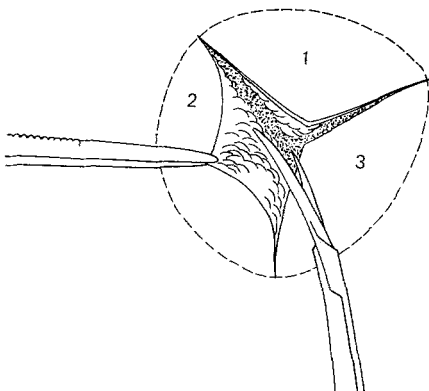


Fig. 9. Detail of area corresponding to the reimplanted umbilicus showing the position of 3 flaps on the abdominal wall.

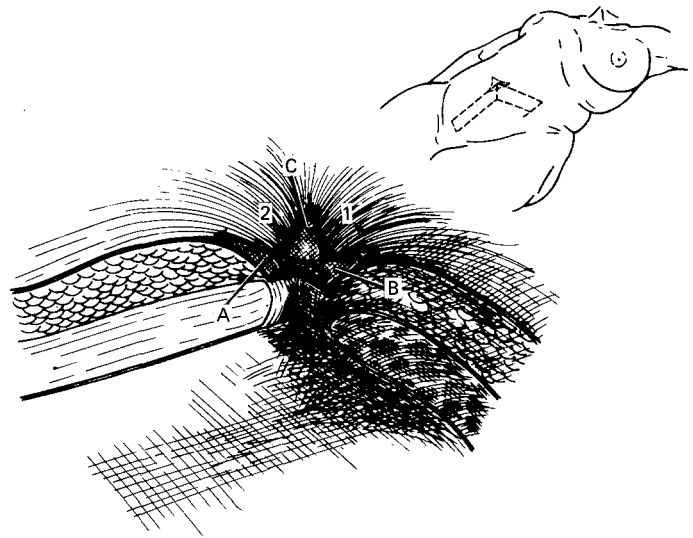


Fig. 10. The suture is made alternately with the 3 flaps coming from the abdominal wall (according to Figs. 7 and 9 -flaps 1, 2, and 3) and with the 3 flaps of the umbilicus itself (according to Figs. 3 and 4 -flaps A, B, and C), which is hidden inside the umbilicus and avoids late contractions of the scar.

Following the operation, the operative wound on the abdomen is sutured in three layers, two subcutaneous and one cutaneous.

Drainage and a plaster dressing during the first 24 to 48 hours of after surgery are recommended to avoid complications.

Pre- and postoperative results of using this technique can be seen in Figs. 12, 13, and 14.

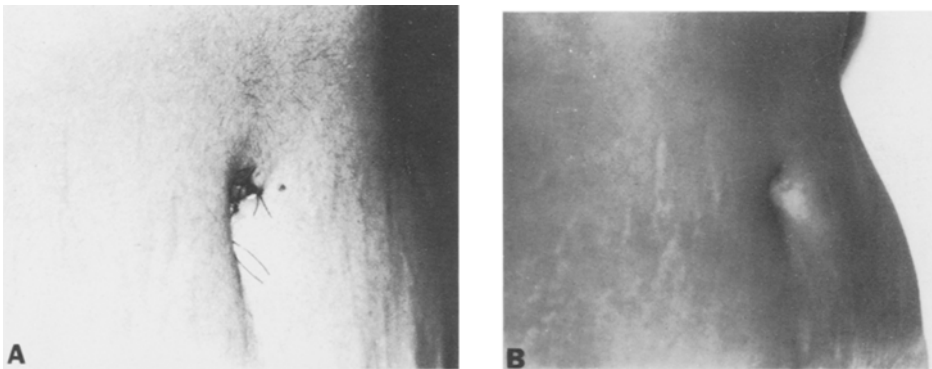


Fig. 11 A and B. (A) This suture has been rotated from the surface to the depth so that it is not visible on the abdominal surface. (B) Same patient, 1 year after surgery.

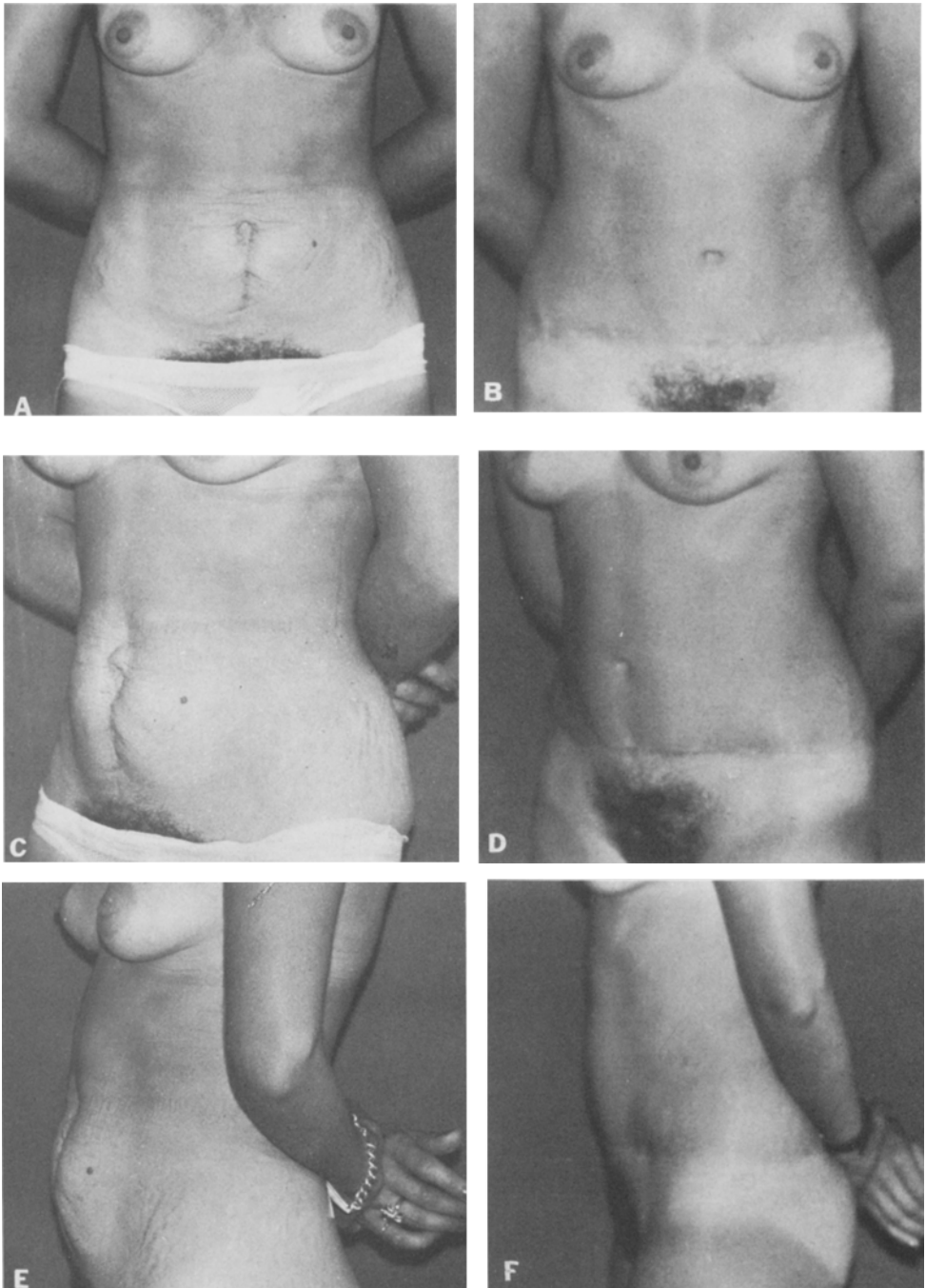


Fig. 12. A-F. (A, C, E) preoperative; (B, D, F) postoperative.

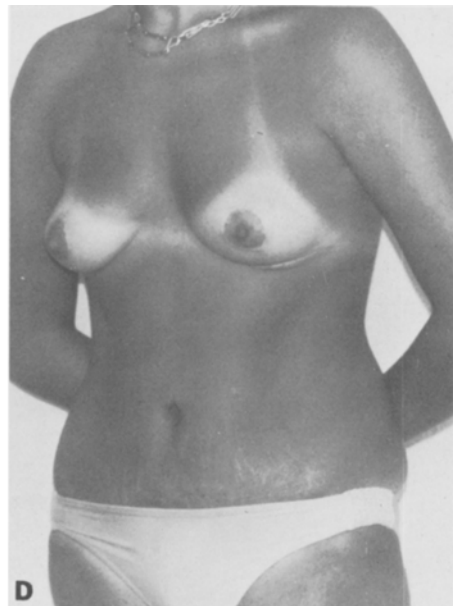
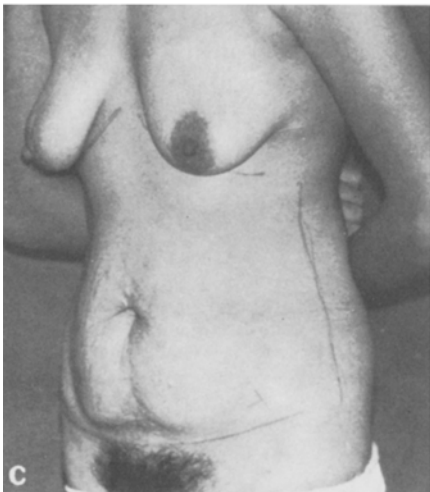
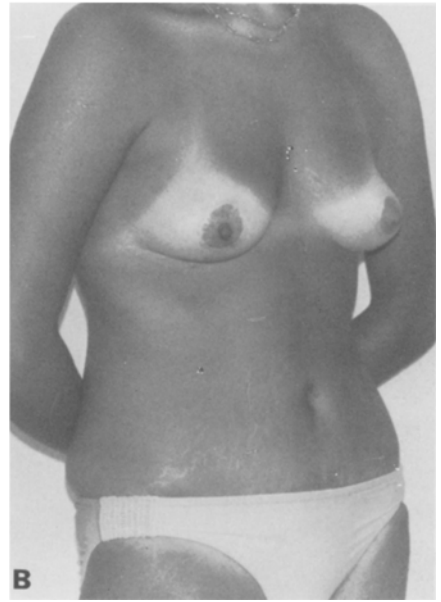
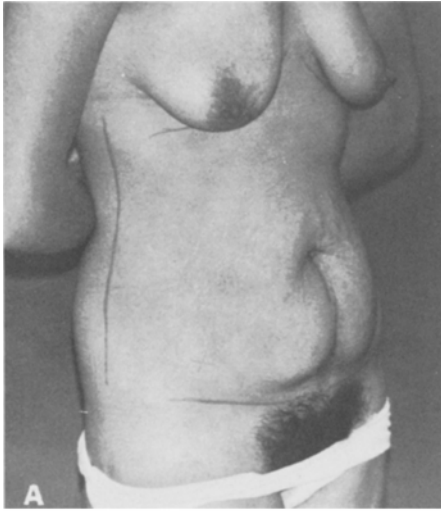


Fig. 13. A-D. (A and C) preoperative; (B and D) postoperative.

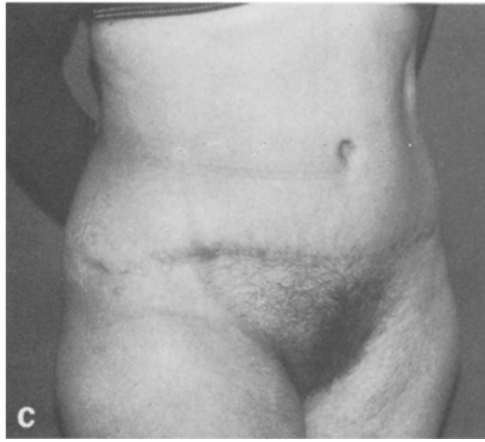
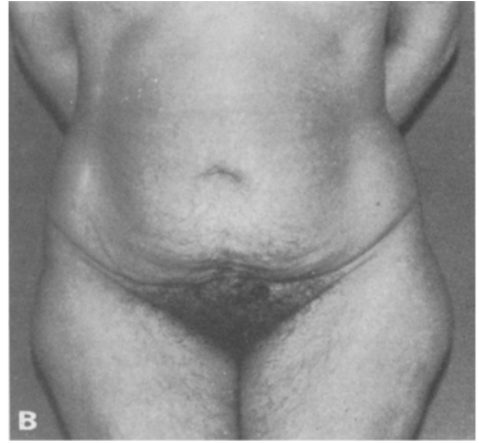


Fig. 14 A-F. (A and B) preoperative; (C and D) postoperative; (E and F) umbilicus close-up.

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