Experience with the Split-Thickness Graft Technique in Congenital Absence of the Vagina

J. Kunz, E. Held, and W. E. Schreiner

University Hospital of Zurich, Department of Gynecology (Director: Prof. Dr. W. E. Schreiner), CH-8091 Zurich, Switzerland

Summary. Between 1961 and 1977 vaginoplasty was performed in 24 patients at the Zurich University Hospital, Department of Gynecology, using the split-thickness graft technique; in 22 cases the result was functionally satisfactory. Based on their experience and previous reports the authors describe the surgical technique and the follow-up measures designed to ensure a functionally and anatomically optimal result.

Key words: Congenital absence of the vagina — Vaginoplasty.
By giving a woman with congenital absence of the vagina ability to indulge in coitus, we take a major step toward solving her psychological problems and improving her social integration. However, the large number of techniques which have been proposed to deal with this anomaly suggests that none is wholly satisfactory. All of them, with the exception of Frank's non-surgical dilatation of the vaginal vestibule [1], are based on the surgical creation of a space or cavity in the area of the rectovesical septum. Subsequent epithelialization of the cavity formed in this way is usually attempted either from the perineal skin or by means of skin transplantation. Examples of the former are Wharton's construction of a simple vaginal tube [2]; its lining with fetal membrane described by Brindeau [3] and Burger [4]; the use of the labia, as proposed by Williams [5] or parietal peritoneum as favored by Bloch [6], Glowinsky [7], Davidov [8] and Friedberg [9]. Exponents of skin transplantation include Küstner [10] and Grossmann [11], who used pedicle grafts, while Kirschner and Wagner [12] and McIndoe and Barnister [13] preferred free grafts. More recently, Bruck [14] has advocated a reverse dermal flap technique, and Lang [15] the use of mesh grafts. All the techniques which rely on the use of intestine to line the vaginal cavity are major operations associated with a correspondingly high risk of failure. They include the transplantation of sections of the lower ileum [16, 17] of the rectum [18] of the sigmoid colon [19, 20] and of an intestinal muscularis mucosae graft [21]. We have developed a modified technique for vaginoplasty based on that of McIndoe and Barnister [13], and it is this which we shall now describe.

**Method**

The operation is performed in two stages. With the patient in the prone position a 0.3–0.4 mm thick split-thickness graft is first taken from the upper gluteal region using a dermatome; the graft is covered with Telfa gauze and a foam rubber pressure dressing. A phaloid plastic form coated with a solution of nebacetine or an estrogen cream and consisting of a cylinder with a sliding plunger is covered with Biogaze® and then with the split-thickness skin graft, with the raw surface outwards, using 4–0 atraumatic catgut. Meanwhile the patient is changed to the lithotomy position. A second surgical team then performs a laparoscopy or laparotomy, explores the internal genital organs, takes ovarian biopsies and examines the parietal peritoneum, while an other team dissects the space for the neovagina. This involves a transverse incision of the mucosa between the middle and dorsal third of the vestibule, followed by dissection in a circular fashion. A cavity 4 cm wide by 10–15 cm deep, extending as far as the pelvic peritoneum, is then created in the area of the rectovesical septum by blunt dissection. Care is taken to avoid injuring adjacent structures such as the urethra, bladder, rectum, and parietal peritoneum. In some cases it is necessary to make a lateral incision in the levator ani muscles. The exposed peritoneum is covered with subperitoneal fatty tissue and bleeding is controlled by cautery and fine sutures. When hemostasis in the cavity is controlled the plastic form bearing the prepared split-thickness graft is inserted. With the form in position the edges of the graft are sutured to the edges of the exposed vestibular mucosa using 3–0 atraumatic catgut.

Only then is the plunger removed and foam sponge cubes measuring 1–4 cm³, impregnated with nebacetine solution are pushed down into the form. Then the form is gradually removed. The foam sponge is sufficiently rigid to press the graft firmly against the walls of the vaginal cavity. The foam sponge cubes are held in place by deep transverse Mersilene sutures to the vulva. Bladder drainage for the ensuing 14 days is achieved by a suprapubic catheter. Systemic antibiotics are given perioperatively and the patient is mobilized on the day of the operation. After 10 days the sponge cubes and Biogaze® are removed under anesthesia and a vaginal form, also made of foam rubber, coated with gauze and estrogen cream, is inserted for the following 5 days. The form is then removed without an anesthetic.