

Pudendal Thigh Flap for Congenital Absence of Vagina

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Abstract

Objective: To increase the armamentarium of plastic surgeons with description of one of the relatively newer flap for the reconstruction of congenital absence of vagina.

Methods: All patients of congenital absence of vagina selected for surgery were explained every detail about the procedure. Five out of ten opted for this procedure. In all patients bilateral pudendal thigh flap based on posterior labial artery, a branch of internal pudendal artery, were raised on either side of labia. They were sutured in midline and inserted into the neo-vagina created by dissection in between rectum and urinary bladder.

Results: This flap was used in five patients with minor postoperative problems and with good anatomical and functional results.

Conclusion: Pudendal thigh flap is a useful technique to reconstruct the vagina (JPMA 55:143;2005).

Introduction

Congenital absence of vagina is also known as "Rokitansky- Mayer-Hauser-Kuster Syndrome". Patients with this syndrome have a normal female karyotype. They typically present at the age of menarche or later because of primary amenorrhoea. Rarely is the abnormality discovered at birth. On physical examination findings include a normal vulva with absent vagina or vagina represented by a dimple. There is usually absence of uterus and cervix, which are represented by bilateral non-canalized muscular bands. The ovaries are normal and there is normal cyclical ovarian function as reflected by circulating hormone levels and ovulation and the fallopian tubes may or may not be normal but complete absence is rare.¹

There are many surgical techniques of repair for congenital absence of the vagina. The basic step in all methods is the creation of a pocket between urinary bladder and rectum. The lining of this cavity differs in each technique. McIndoes procedure, which involves the lining of cavity by split skin graft, is the "Gold standard." All other techniques can be compared to it.²

In the presented cases, the lining of cavity was made by a fasciocutaneous flap with the blood supply from the posterior labial artery, a branch of perineal

artery.³

Patients and Methods

From year 1997 to 2002 five cases of Rokitansky-D Mayer-Hauser-Kuster Syndrome were operated with pudendal thigh flaps. All the patients were adult females, with age range from 15 to 21 years. The main symptom was primary amenorrhoea. One was married and four were un-married.

Surgical Technique

The patient was placed in the lithotomy position with the legs on stirrups and urinary bladder catheterized. The flap was marked with a 6cm transverse base at the level of introitus extending from lateral to hair bearing part of labia majora across groin crease to medial thigh. In adults a length of 15 cms for the flap is sufficient. It is arterialized throughout by the posterior labial artery and deep external pudendal arteries. A pocket was then created between the urinary bladder and the rectum.

The tendon of the adductor longus muscle was identified and flap elevation started at the lateral margin. The fascia of the muscle was incised and elevated to identify the superficial perineal muscles. The medial border

they do not pass through the superficial perineal pouch and course through the deep perineal pouch to reach the clitoris. The flap pedicles were de-epithelialized under the labial skin bridges. Flaps from both sides, tunneled under the labia majora were everted through interoitus. Posterior suture line was completed first (Figure 2) and after the tip was reached then anterior suture line was commenced. The tip of cul-de-sac was then invaginated and anchored to the uterine rudiments. The opening of the neo-vagina was sutured to the muco-cutaneous edge of labia minora. Donor site was closed primarily without tension. A condom packed with sterile cotton was introduced into the neo-vaginal pouch (Figure 3) and secured by a T-bandage.

Post operatively the patient was kept in bed for 48 hours. Urinary catheter was maintained for 5 days. Cefradine, Gentamycin and Metronidazole were given parenterally for five days.

Results

In all five patients operated, there was easy entry of two fingers in the neo-vaginal pouch. The vaginal length was 8cm. Unfortunately the follow up of these patients was very poor. One patient who was married never returned once she was discharged one week after surgery. Of the remaining four patients, two came for three weeks and two up to 8 weeks. All the four patients were unmarried and were not able to report on status of intercourse, however on clinical examination there was shrinkage of vagina to one finger in three cases and length reduced to 7cm. All patients were advised to wear stent made up of condom stuffed with cotton. All the four patients showed good progress and were symptom free. However, all complained of heaviness and numbness of vagina, for which they were reassured.

Table. Age, sex, symptoms and marital status of patients.

| S.No. | Age | Primary symptom | Married/unmarried |
|-------|-----|-----------------|-------------------|
| 1. | 17 | Amenorrhoea | Married |
| 2. | 18 | Amenorrhoea | Un-married |
| 3. | 21 | Amenorrhoea | Married |
| 4. | 20 | Amenorrhoea | Un-married |
| 5. | 17 | Amenorrhoea | Un-married |

Discussion

There are many methods of vaginal reconstruction with their own advantages and dis-advantages. They include the serial dilatation⁴, use of split skin graft⁵, use of full thickness graft⁶, use of buccal mucosal graft⁷ and

Figure 1. A pocket is created between rectum and Urinary bladder. Finger is in rectum.

Figure 2. Lateral edges of both flaps sutured in mid line.

Figure 3. Donor area approximated and closed primarily. Stent, made up of condom puffed with cotton .was placed in neo-vagina.

was then elevated and carried cephalad to the suprapubic level. The labia were lifted off the pubic rami and perineal membranes and flaps from both sides were tunneled under the labia. This was safe for the posterior labial nerves as they had entered the labial fat far posteriorly.

Clitoral nerves were also in no danger because

use of amniotic membrane⁸, Ileum and pelvic colon.^{9,10} Gracilis¹¹ myocutaneous and Groin fasciocutaneous¹² flaps have also been used.

Serial dilation is a non-operative technique and has no morbidity but it requires long extended duration of stent use to be effective.

Use of split skin graft (SSG) or McIndoe technique is the gold standard by which all other techniques are compared. It is a simple procedure and easy to perform and carries less morbidity. Good vaginal length is easy to obtain. Disadvantage of this technique is the shrinkage of the cavity in due course of time because of contraction of the skin graft. To avoid this development, the patient has to wear some type of a stent at all times, which is cumbersome.

Use of full thickness graft (FTG) instead of split skin graft was done in order to prevent contraction of the graft, but it carries greater morbidity and the necessity of wearing the stent is still there.

Use of amniotic membrane to line the cavity instead of SSG or FTG has been used but remains far away from the ideal solution as amniotic membrane never takes but acts as a biological dressing that helps in accelerating the wound healing. This also requires wearing a stent.

Baldwin popularized the use of the various portions of the bowel such as Ileum and colon to reconstruct the vagina. Because of increased mortality and morbidity associated with intra abdominal surgery, Baldwin procedure is generally abandoned in favor of the other safer operations. Other disadvantages associated with the use of ileum included bleeding with coital trauma, excessive mucous secretion, periumbilical pain associated with coitus and tendency to prolapse.

Gracilis myocutaneous flap became very popular for perineal reconstruction. But it carries a pedicle, which is very precarious, and chances of flap failure are quite high especially for a surgeon in his early learning curve. Furthermore it produces a very conspicuous thigh scar.

Comparing the above problems with Pudendal thigh flap, it looks to be very ideal, as it has got a robust blood supply and chances of necrosis are almost negligible. There is no need of a stent to be worn.¹³ The angle of inclination of the vagina is physiological and natural and scars of the donor site are well hidden in the groin crease.¹⁴ Most importantly the vagina is sensate, retaining the same innervation of the erogenous zones of perineum and upper thigh.¹⁵

There are certain disadvantages with this Pudendal thigh flap. It is technically slightly more difficult than McIndoe technique and requires more time. The problems of hair in the neo-vagina can be dealt by depilatory creams or by Laser therapy.¹⁶ In some cases there is numbness of the vagina. This is because the anterior part of the flap near the medial corner of the femoral triangle is supplied by the nerve twigs of genitofemoral and ileoinguinal nerves which are cut in the process of elevation, hence sensation is retained only in the lower part of reconstructed vagina.

Conclusion

It is an established fact that McIndoe technique is a simple procedure with less morbidity and more comfort, but Pudendal thigh flap would be a useful addition to the armamentarium of the plastic surgeon for constructing the vagina.

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