

Vaginoplasty by using amnion graft in a patient of vaginal agenesis associated with Mayer-Rokitansky-Kuster-Hauser Syndrome

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ABSTRACT

Background: Vaginal agenesis is a congenital anomaly of the female genital tract and may present as isolated developmental defect or as part of a complex of anomalies. The aim of reporting this case was to determine the effectiveness of vaginoplasty by using amnion as graft in the creation of neovagina for a patient with Mayer-Rokitansky-Kuster-Hauser Syndrome.

Case report: Vaginoplasty using amnion graft was successfully performed in this case of 23 year old young lady with MRKH type-II syndrome. The

functional result was quite satisfactory. Post surgical result was acceptable to the patient sexually and emotionally.

Conclusion: The ideal method for vaginoplasty is yet to be defined and all of the available methods have potential advantages, disadvantages or complications. Vaginoplasty by modified Abbe-McIndoe procedure using amnion graft is still a safe, relatively simple and effective procedure.

Key words: Vaginoplasty, amnion graft, vaginal agenesis, Mayer-Rokitansky-Kuster-Hauser Syndrome

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INTRODUCTION

Vaginal agenesis is a congenital anomaly of the female genital tract and may present as isolated developmental defect or as part of complex of anomalies.¹ The incidence is about 1 in 4000-5000 live female births.² Vaginal agenesis is usually associated with Mayer-Rokitansky-Kuster-Hauser (MRKH) Syndrome and Androgen Insensitivity Syndrome.² MRKH syndrome is a malformation characterized by congenital absence of uterus and vagina in the presence of normally functioning ovaries.³ Type-I MRKH syndrome is characterized by an isolated absence of the proximal two thirds of the vagina, whereas type II MRKH syndrome is associated with other congenital anomalies, including skeletal, urinary tract, and digestive tract abnormalities.⁴

Women with MRKH syndrome have a 46 XX genotype and a normal female phenotype with spontaneous development of secondary sexual characteristics.¹ Several methods for creating a neovagina have been described, and most

commonly used technique to create a neovagina is the non surgical Frank technique, which depends on serial dilation of the perineal dimple between the urethra and anus into a functional invagination. Vecchietti operation was developed in principle of application of intermittent pressure from below with constant traction on vesicorectal space from above.³

In Abbe McIndoe vaginoplasty split thickness skin graft is placed over a mould which is inserted into a surgically created space between the bladder and rectum.³ Several investigators have described modifications of the Abbe McIndoe procedure, including methods that use peritoneum⁵, amnion,^{6,7} artificial dermis and recombinant basic fibroblast growth factor,⁸ intercede⁹ and rotational flap procedures using the pudendal, gracilis myocutaneous, labia minora and other fasciocutaneous flaps,⁴ autologous buccal mucosa¹⁰. Williams vaginoplasty, in which the labia are used to create a pouch is another technique of creating neovagina.¹¹ In addition bowel vaginoplasty using segment of intestine to line newly formed vaginal

canal is also used and some centers are now using laparoscopic approach for it.¹² Latest technique include robotic sigmoid vaginoplasty.¹³ We present a case report of creation of neovagina by modified Abbe McIndoe method using amnion as graft material in a patient with type-II MRKH syndrome. The aim was to create functionally and cosmetically normal neovagina with simple available technique and to bring this operation in the notice of gynecologists.

CASE REPORT

A 22 year old young married woman reported to OPD with history of primary amenorrhea. On clinical examination she had well developed secondary sexual characteristics with a small blind vaginal pouch of 1.5 cm in length. On pre operative workup apart from the routine investigations, serum prolactin, FSH & LH showed normal values where as TSH was found to be raised. USG & MRI revealed absence of uterus and upper 2/3rds of vagina but with normal functioning ovaries & crossed ectopic left kidney. IVP showed evidence of crossed ectopic left kidney in right lumbar region. Karyotype revealed 46XX without visible chromosomal anomaly.

Patient diagnosed to have type-II MRKH syndrome. Patient and attendants were explained about surgical method of vaginoplasty and its possible complications. Amniotic membrane was collected under sterile conditions from elective caesarian section after screening the donor for hepatitis B, hepatitis C, HIV and syphilis. Inner amniotic membrane was separated from outer membrane and was placed in sterile normal saline solution containing cephalosporin injection. Under general anesthesia, patient was kept on lithotomy position, after painting and draping the abdomen and perineum, diagnostic laparoscopy was done which revealed absent uterus with normal tubes and ovaries embedded into lateral pelvic wall. Foleys catheterization was done. Later a transverse incision was given below the dimple and a potential space was created in between urethra, bladder and rectum by blunt dissection carefully palpating the catheter in front and with a finger in the rectum to protect against the injury. A cavity with size of depth 7-8 cm in length and about 4-5 cm in diameter was achieved. Vaginal mould was made with 20 ml syringe wrapped with sponge and covered with latex condom and was then wrapped with amniotic membrane and sterilized in normal saline with injection cephalosporin and placed in the constructed cavity. The amnion graft was fixed to mould by suturing the edges of amnion to the mould. The labia majora was then sutured together with silk

sutures to hold the mould in position and T-bandage was applied. This was further secured by adhesive plaster on the top. Foleys catheter was left intact for seven days. Prophylactic antibiotics were given for 7 days. Topical application of Gentamycin drops over the graft was given for 7 days. Mould was removed on day 8 along with the catheter. The graft was retained in the vagina and was well taken. Meticulous vaginal douche was done and 2nd mould made with 20 ml syringe wrapped with sponge covered with latex condom and was kept in place. Patient was counseled about the method of placement, removal and cleaning of mould and to facilitate further change of mould herself. Patient was discharged with the advice to wear mould continuously for 1 month followed by night insertion for another 3 months to prevent contractions. Four weekly follow up visits were advised for 6 months. Physical relationship was allowed after 3 months.

RESULT

Vaginoplasty using amnion graft was successfully performed in this case. The functional result was quite satisfactory. Post surgical result was acceptable to the patient sexually and emotionally.



Figure 1



Figure 2



Figure 3a



Figure 3b

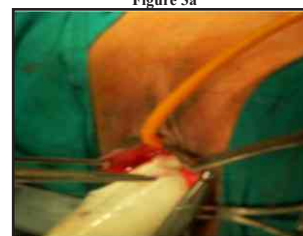


Figure 3c



Figure 3d

Figure 1: Karyotype showing 46XX

Figure 2: IVP showing Crossed ectopic left kidney

Figure 3a: Transverse incision below dimple to create potential space

Figure 3b: Preparation of vaginal mould with amniotic membrane

Figure 3c: Placing vaginal mould into cavity

Figure 3d: Neo vagina after 3 months

DISCUSSION

We selected amnion as graft for vaginoplasty over skin or other grafts because it is easily available. As amniotic membranes do not express HLA-A, B or DR antigens therefore immunological rejection is less likely to occur. Antifibroblastic activity cell migration and growth promoting activity have been demonstrated which enhances epithelialisation. Amniotic membranes have also antimicrobial properties that reduces the risks of postoperative infection. The method of preparation of the graft is simple and less time consuming. Other methods using skin and buccal mucosa and peritoneum may cause scarring.¹⁰ Use of a segment of intestine can cause continuous profuse secretions and unpleasant odour and prolapse of neovagina. Dilation techniques although simple, require considerable time and patient compliance and are not always effective. Laparoscopic techniques are lengthier and require specialized skills and training in laparoscopy. Although few studies have used amnion as a graft in the creation of neovagina, the results are extremely satisfactory. A study by Sarwar et al, in 2010 among 28 patients showed 89% success rate.⁷ A study conducted in Germany in 2009 on 7 patients showed 85.7% success rate.¹⁴ Another study conducted at Lahore in Pakistan among 10 patients in the year 2006 showed as high as 90% success rate.⁶ Advantage of this procedure is that it is safe, economical and easy to perform. Epithelial lining of the neovagina resembles normal vaginal epithelium facilitating a comfortable sexual life.

CONCLUSION

The ideal method for vaginoplasty is yet to be defined and all of the available methods have potential advantages, disadvantages or complications. Although new techniques of vaginoplasty have evolved over the years using laparoscopic approach and by use of different materials as graft, but in developing country like India where facilities and expertise for newer techniques are not readily available, vaginoplasty by modified Abbe-McIndoe procedure using amnion graft is still a safe, relatively simple and effective procedure. However peri-operative counseling is most essential to have good results.

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