New method of vaginoplasty in vaginal agenesis, shamdeen's vaginoplasty

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Aim: To present a new technique of vaginoplasty in Mayer-Rokitansky-Kuster-Hause (MRKH) syndrome. Methods and interventions: A case series study of 145 females presented with primary amenorrhea due to vaginal agenesis, on which the new procedure of Vaginoplasty was conducted on those suffering from MRKH syndrome. Evaluation of cases was conducted through clinical, laboratory, sonography and laparoscopy, to confirm the diagnosis of MRKH syndrome. Shamdeen’s Vaginoplasty; creating a new vagina by two-skin flap from labia minora and majora. The first step was to excise two skin flaps, one from each side of labia, keeping the insertion of one flap anterior and the other posterior, separate the two layer of the skin flap. The second step was by creating a space between the bladder and rectum by blunt dissection, creating a pouch extended to the pouch of Douglas. The third step was to suture the two flaps as a tube, three bites of the top stitches sutured with the highest point in the created pouch but left un tightened, inverting this tube, and then tighten the sutures on the top to keep it in place, betadiene socked pack left for 7 days. Regular dilatation weekly and sexual practice after 8 weeks. All were followed up for three years. Results: one hundred forty five cases of primary amenorrhea, in which 29 cases (20%) found to have MRKH syndrome, 23 married women underwent Shamdeen’s vaginoplasty. Most of the patients were satisfied post operatively; functionally and psychologically, only one case had severe post operative infection and moderate vaginal stricture. Conclusion: the created vagina got normal anatomical position, covered with normal skin, took shorter operative duration, convenient for patients, had good results, not that invasive, and relatively inexpensive.

Keywords: Primary amenorrhea, MRKS syndrome, vaginal agenesis, vaginoplasty.

INTRODUCTION

The MRKH syndrome is a class 1 agenesis with prevalence of 1:4000-5000 due to Mullerian agenesis or hyperplasia and consist of combined vaginal agenesis associated with rudimentary uterus and normal fallopian tube (Capraro et al., 1976; Dewhursts, 1980). Moreover about 30-50% and 10% had additional urinary tract abnormalities and skeletal abnormalities respectively (Judith B.2000, Jones H.et al 1977). The MRKH syndrome is usually asymptomatic in prepubertal girl and presented in adult patients as amenorrhea and sterility. (Tunner et al., 1962; Al-Shehri, 1955).

Those Patients have no reproductive potential, so surgical management is aimed to create vagina for sexual activity. (Beazley, 1977; Jones et al., 1977).

Many trial of vaginoplasty have been attempted since the 6th century. Boldwin 1904; (Johnson et al., 1990) transposed bowel to create vagina and then Williams described posterior directed external pouch. Abbe in 1898 was the first to line a cavity with split thickness graft supported on a mould, but it was McIndoe who popularized the procedure after that (Edmon, 1999; John and Christopher, 1999).

Latter on a numbers of different surgical techniques have been used to create an artificial vagina; the most widely used is that of McIndoe and Read (McIndoe and Bannister, 1938) (Coran et al., 1995; Counsellor, 1978; Griffin et al., 1976). It is ideal to perform this procedure when sexual intercourse is desired soon after words.

Song in (1982) used the labia majora and minora as pedicle flaps, to create a satisfactory vagina but this distorts the vulvar anatomy. Labiovaginal flaps created by tissue expansion technique have been used to overcome this (Sheil et al., 1990). Lacey et al in 1988 advocate using a long graciles musculocutaneous flap graft for
reconstruction of the vagina following radical surgery; it is complicated by a high failure rate due to a vascular problem. (Mare et al)

In order to avoid the scar of the split thickness skin graft, more recent development has been advocated by the use of amnion graft instead of the skin graft. (Dewhurst, 1986; Fotopoulou et al., 2020).

The aim of the study

To present a new technique of vaginoplasty by using skin flaps of labia minora and majora.

Patients and Methods

The inclusion criteria for diagnosis of MRKH syndrome was according to American society for reproduction medicine (ASRM) classification of Mullerian duct anomalies 1998(Capraro et al., 1976; Dewhursts, 1980).

One hundred forty five Patients presented as primary amenorrhea and/ or failure to have intercourse, attending the gynecology clinics (Albatool maternity teaching hospital in Mosul and Azady general teaching hospital in Duhok) from 1990 to 2009. They were evaluated with; history of similar condition in the family, clinical evaluation of the height, weight, webbing of the neck, secondary sexual characters, for unmarried patients inspection of the hymen and exclude vaginal septum, trial of pelvic examination in married patients to diagnose vaginal atrasia.

Investigations done includes; hormonal assessment, ultrasonography, chromosomal study and laparoscopy to confirm the diagnosis of MRKH syndrome. Assessment of the function of the uterus was evaluated clinically and laparoscopically. An intravenous urography was performed to exclude renal abnormalities. A total of 29 patients (20%) found to have MRKH syndrome. The single six patients were aged 15 years presented as amenorrhea; they were excluded as they refuse operation for social and practical reasons, the married group _of the remaining 23 cases presented with dysparunia or failure to have intercourse with primary amenorrhea.

Vaginoplasty was conducted in the entire 23 married group. The idea of the operation was discussed with the patients and consents were taken.

Patients were prepared for major surgery, under general anesthesia. During surgery patients were put in lithotomic position, cleaned the area with antisepic solution and covered with sterile towels, Foley's catheter put in the bladder and a gauze pack loaded into the rectum. Figure (1) shows the external genitalia before vaginoplasty.

There are three main steps in the operation:

The first step is to prepare the skin flap: Mapping of the two elliptical incisions over both labia majora and labia minora, one end of the elliptical incision left connected as a pedicle, the left anteriorly and the right posteriorly. The mid-line met in antero-posterior line in the area of the proposed hymen. Each flap is then opened from the center to separate the two skin layer, until it makes a wide and thin skin flap, the base in the left attached anterior, while the right attached posterior. Figure (2).

The second step is to create vaginal cavity: Blunt digital dissection with two fingers, to create a space in the loose tissue which lies between the bladder and the urethra anteriorly, and the rectum posteriorly, guided by the loaded pack in the rectum posteriorly, and the Foley's catheter in the urethra anteriorly. It is important that a large space is opened up and extended upwards as high as possible to the site of the rudimentary uterus. The space created is larger than the size of the normal vagina, as contracture may happen during the patient convalescence. A few judicious snips in the levator fascia, obtained lateral enlargements with the scissors directed towards the sidewall of the pelvis. With considerations of complete homeostasis and maximum

Figure 1. Preoperative
degree of asepsis. The vaginal orifice created admits two fingers without difficulty in width and depth. It is then packed firmly with betadiene soaked gauze.

The third step is creation of the skin tube to line the vaginal cavity: the top of both flaps performed in the first step were sutured by interrupted stitches, 4 stitches are taken through the peritoneum in the cul-de-sac of Douglas and through the sutured top and held on an artery forceps un-tightened. After that both skin flaps sutured together from sides with interrupted stitches of vicryl zero, creating a tube. The pack is removed from the created vagina cavity in the second step, the skin tube bushed into the created vagina after inverting it, the stitches held on the artery forceps before are tightened, by this maneuver the top of the created tube is near the cul-de-sac, the labial incision sutured by interrupted vicryl 0, few interrupted stitches to the introituse edge. The created vagina is now loaded with betadiene soaked pack .Then two deep bite of skin from both side of fourchette is taken by nylon over the pack to keep the pack in position.

The pack in the rectum is taken out, while the catheter left in figure (4).

The duration of the surgery was 35-60 minute, no significant bleeding was observed during surgery and no injury to nearby organs had occurred.

Postoperative care

Broad spectrum antibiotic, ampicillin 500 mg /6 hourly, and metronidazole infusion 500mg/8hourly started and continued for 8 days. The patient was given light diet with codeine tablet three times a day, to avoid passing motion and as pain relief. After two days a laxative was given to avoid bearing down to pass motion. The vaginal pack removed gently after 8days. The vagina was loaded with antiseptic cream and the Foley’s catheter was removed. In the 10th postoperative day the patient is discharged home. After one week (17post operative day) the patient was readmitted, and under general anesthesia gentle dilatation was presumed with Hegars dilators, starting with number 20mm to 26mm using antiseptic cream. The
procedure repeated weekly without general anesthesia, and the size of dilators rose to 30mm. After 8 weeks she was advised to have sexual intercourse with the use of antiseptic creams.

In all patients a satisfactory vaginal length of at least 9-12 cm obtained and the neovaginal cavity was easily passable for two fingers at the time of discharge.

The mean operative time was 35-60 minutes, with only minimal blood loss in all cases. The mean length of hospital stay was 12 days (range 10-14 days).

RESULT

From 145 cases complaining of primary amenorrhea, 29 patients (20%) found to have MRKH syndrome. Six patients were single (20.6%) at the ages of 15 years, and were excluded as they refuse operation for social and practical reasons. 23 patients (79.4%) were married and underwent surgery. The single patients presented with amenorrhea, while the married group presented with dysparunia, or failure to have intercourse with primary amenorrhea. The majority of patient 23 cases (79.3%) were less than 20 years of age.

Three patients had post operative infection; in two of them the infection was mild, with good recovery, and one with severe infection which ended with vaginal stricture. The latter was treated after that with same procedure and more sessions for dilatation. All patients were followed up after 1, 2, 3, 6, 12 months, and three years, none of them expressed dissatisfaction, apart from one which had infection, however she was improving gradually.

DISCUSSION

In Iraq sexual practice is mainly conducted through marriage. This is why all unmarried virgin patients refuse to have surgical interference. The MRKH syndrome is a rare syndrome, but it is serious as it needs urgent treatment to provide normal sexual life (Johnson, 1990; Griffin et al.).

Shamdeen’s method of Vaginoplasty takes shorter time for operation and recovery than McIndoe and Read Vaginoplasty. In the latter the cavity created is lined by a split full-thickness skin graft taken from the thigh which takes few weeks to line the vaginal cavity. (Johnson et al., 1990, Counseller, 1978) Moreover the post operative period is painful and the graft does not always take well and granulation may form over part of the cavity, giving rise to discharge and pressure necrosis between the mould and urethra, bladder or rectum, with the possibility of fistula formation. In Shamdeen’s method the post operative dilatation reduces the tendency for vaginal stricture which is observed in McIndoe’s and Read method of Vaginoplasty. (Johnson et al., 1990)

The operation of vulvo- Vaginoplasty pioneered by Williams 1964 is creating a pouch by suturing both labia. This method has some advantages, as the procedure is a simple, quick and relatively comfortable for the patient, but the disadvantage is the unusual angle of the vagina, and the destruction of the normal anatomy, this has been overcome by Shamdeen’s method.

In 1982 Song used both labia majora and minora as pedicle flaps forming a skin tube with a blind end like condom. In principle the procedure is similar to Shamdeen’s method, but the tube in Songs procedure by using the two labia is not uniform and may needs trimming. In addition to the distortion of the natural shape of external genitalia, both were overcome by Shamdeen’s method which preserved the external genitalia. (Sheil et al., 1990).

Shamdeen’s method is also differ from that of Lacey et al 1988 who advocate using a long graciles musculocutaneous flap, the latter was conducted after radical surgery when removing all the content of the pelvis(24) rather than vaginoplasty for vaginal agenesis.

Amnion graft was used instead of the skin graft conducted in Shamdeen’s method and McIndoe techniques. The mould is covered with amnion obtained
under sterile condition at a cesarean section delivery. This however, has been associated with high failure rate due to avascularity and graft rejection. (Fotopoulou et al., 2010)

CONCLUSION

The created vaginas by Shamdeen’s new method of vaginoplasty preserve the normal anatomical position and the shape of external genitalia. The vagina is covered with normal skin.

The procedure is convenient for the patient, have good results, not that invasive and relatively inexpensive.

Moreover post operative recovery is quick and less painful. All patient were able to practice normal sexual activity.post operatively, the vagina is less liable to stricture because of regular dilatation until the time of presuming intercourse.

REFERENCE


