VAGINOPLASTY CASE SERIES AT THE UNIVERSITY COLLEGE HOSPITAL IBADAN

*Dr. Olumuyiwa A. Roberts **Dr. Olukayode A. Iyun *Dr. Michael A. Okunlola
*Department of Obstetrics and Gynaecology, College of Medicine, University of Ibadan Ibadan. P.M.B. 5017

**Department of Plastic Surgery Division of Surgery, College of Medicine, University of Ibadan, Ibadan.

ABSTRACT

Transverse vaginal septum is a benign condition with the septum occurring at various levels within the vagina; it may occur in the upper third, mid-vaginal or lower third. A report of five cases of transverse vaginal septum managed at the University College Hospital between January, 2006 and December, 2009. Three were cases of congenital transverse vaginal septum while the other two were cases of acquired transverse vaginal septum.

Diagnosis of congenital transverse vaginal septum was made following history of primary amenorrhea, pelvic examination revealing a vaginal septum. In addition, a pelvic mass and ultrasound findings of haematocolpos and haematometria were present in the first case. Diagnosis of acquired vaginal septum was made following history of secondary amenorrhea, cyclical abdominal pain and pelvic examination findings of gynaetresia and vaginal septum.

In all but one, surgical resection of the transverse vaginal septum was performed, followed by lining of the vagina by split thickness skin graft (STSG): the McIndoe-Read operation. All the procedures were performed in conjunction with the Plastic surgeon. They were seen at the Gynaecology clinic post operatively at two weeks, six weeks, three and six months respectively. Four out of the five cases successfully menstruated following surgery. The fifth case was lost to follow up. The first case was able to achieve successful coitus. None of the cases required blood transfusion nor suffered serious complications such as fistula formation. However, in two cases there was premature expulsion of the mould one of which was due to vaginal infection leading to sloughing and secondary skin grafting.

Key words: Cryptomenorrhoea, haematocolpos, vaginal septum, vaginoplasty.

INTRODUCTION

The incidence of vaginal atresia is estimated to be 1 in 400,000 female children[1]. The müllerian ducts are the primordial anlage of the female reproductive tract. They differentiate to form the fallopian tubes, uterus, the uterine cervix, and the superior aspect of the vagina. A wide variety of malformations can occur when this system is disrupted. They range from uterine and vaginal agenesis to duplication of the uterus and vagina to minor uterine cavity abnormalities[2,3].

The vagina is derived from interaction between the uterovaginal Primordium (mesoderm) and the pelvic part of the urogenital sinus (endoderm).

Müllerian malformations are frequently associated with abnormalities of the renal and axial skeletal systems, and they are often associated with functioning ovaries and age-appropriate external genitalia[2]. These abnormalities are often recognized after the onset of puberty. Anomalies of the vagina may be obvious at birth or present following menarche as cryptomenorrhoea, dyspareunia or labor dystocia. Rarely, at birth, may an imperforate hymen cause a mucocolpos which is due to retained vaginal and uterine secretions. Patients with complete vaginal agenesis would present with absence of an opening between the urethra and rectum. When this is combined with absence of the uterus (complete mullerian aplasia), it is known as Mayer-Rokitansky-Kuster-Hauser syndrome[4,5].

Those with acquired gynaetresia and vaginal septum usually present with secondary ammenorhoea symptoms and signs of cryptomenorrhoea and a history of insertion of native pessaries or herbs. The damage is caused by chemical vaginitis and sloughing off of the vaginal mucosa with subsequent fibrosis6.

This series, hereby, illustrates the variable

All correspondence to: Dr. O. A. Roberts
E-mail: debolar03@yahoo.co.uk

presentation and the management challenges in the corrective surgery offered to the patients.

CASE REPORT

Case 1: This is a 24-year old polytechnic undergraduate, para 0+0, who presented with primary amenorrhea and a four-year history of recurrent lower abdominal swelling and pain. The current episode dated back to her last menstrual period which was two months prior to presentation. She had a history of drainage of haematocolpos on two occasions four and two years prior to presentation with an incision in the transverse vaginal septum. She also had severe dysmenorrhoea and irregular vaginal bleeding two years prior to presentation.

Examination findings include presence of normal secondary sexual characteristics, normal female external genitalia, twenty-week sized uterus, a small cervix and a thick fibrotic septum in the upper third of the vagina.

Ultrasound showed approximately 300mls of haematocolpos and 50 mls of haematometrium.

She was worked up for examination under anaesthesia and examination findings were that of a short vagina 5cm long, 2cm thick transverse vagina septum, with a dimple in the centre, a hypoplastic and stenotic cervix and 22-week sized abdomino-pelvic mass.

She had excision of the transverse vaginal septum, with drainage of 800mls of altered blood, dilatation of the cervix and split thickness skin grafting of the vaginal defect from a graft harvested from the left thigh (one-stage vaginoplasty). The graft was applied to a plastic mould and inserted into the vagina. A cervical catheter was left in- situ.

She had examination under anesthesia on the 7th day post- op and the graft was 80% taken. The cervical catheter was removed after four weeks. She was counseled to perform self dilatation of the vagina with aid of a plastic mould in order to keep the vagina patent.

Case 2: This was a case of a 13-year old school girl who presented with primary amenorrhea but had achieved normal secondary sexual characteristics. The mother had sought medical attention for her daughter when she started experiencing cyclical low abdominal pain and had not achieved menarche as expected. At the referral hospital, an attempted drainage had led to bladder injury and iatrogenic vesico-vaginal fistula. The significant findings on examination were that of a transverse vaginal septum about 1cm thick in the mid- vagina and a capacious lower vagina. Pelvic ultrasound showed normal uterus and cervix with minimal haematometrium and haematocolpos.

She had excision of the transverse vaginal septum, repair of the bladder defect and advancement of the distal vagina to meet the proximal or upper part using interrupted delayed absorbable sutures (one-stage vaginoplasty). Urethral and cervical catheters as well as a vaginal stent were left in situ. She did not have a vaginal graft. She had a smooth post op period. The catheters and vaginal stent were removed on the 14th day post-op.

She was allowed home on the following day and instructed on how to use an improvised vaginal dilator (a 20ml syringe with sawn off tip) to keep the vagina patent. This she did successfully. During the subsequent follow up appointments she was found to be menstruating normally. On examination of the vagina however there was some degree of narrowing of the mid- vagina which may not be a problem as she was still a developing adolescent girl.

Case 3: A case of a 30 year old para 0+0 apprentice whose problems started thirteen years prior to presentation when she developed colicky lower abdominal pain which was cyclical, non-radiating, no relieving or aggravating factors, there was associated episodes of vomiting during the periods of pain without any vaginal bleeding. She had not attained menarche and there was no associated abdominal swelling. She was initially seen at our Hospital nine years earlier when she was thought to have premature ovarian failure she then defaulted until the index presentation.

On examination, she was healthy looking, with well developed secondary sexual characteristics, without pallor or jaundice and her vital signs were normal. Her abdomen was flat with mild suprapubic tenderness while recto-vaginal examination revealed a stenosed vagina admitting one finger ending blindly at 5cm long. The cervix was not palpable and the uterus was of normal size and mobile. She was diagnosed as a case of primary ammenorrhoea due to transverse vaginal septum with severe dysmenorrhoea. Her hormonal profile was normal while facilities for karyotyping were unavailable. Pelvic ultrasound revealed a normal-sized uterus, hypoplastic cervix, thin endometrium and normal ovaries. Diagnostic laparoscopy

confirmed a clean pelvis, altered blood in the pouch of Douglas, normal uterus, fallopian tubes and ovaries. Appearances were suggestive of retrograde menstruation in a case of high vaginal septum (congenital gynaetresia). She was scheduled for one-stage vaginoplasty, laparotomy and retrograde cervical dilatation.

At surgery patient was placed in Lloyd Davis position, the vaginal septum which was 3cm thick was excised, a neovagina was created (10cm long) and the cervix held with vulsellum forceps. A Pfannenstiel incision was made, followed by an anterior hysterotomy incision. Retrograde cervical dilatation was performed, a size 18 Foley catheter was inserted from below and retained. Uterine and abdominal incisions were repaired.

A split thickness skin graft which was harvested from the left thigh and laid on a 50ml syringe, already prepared with sufratulle, was inserted into the vagina and anchored with silk 2 to the perineal skin.

Due to the fact that the "mould" fell off while defaecating on the 7th day postoperatively, the presence of purulent vaginal discharge signifying infected donor site, she had a swab taken and was placed on oral Co-amoxyclav (Augmentin) 625mg twice daily. Examination under anaesthesia on the 20th day, revealed that less than 50 per cent of the graft had taken (mainly the anterior vaginal wall.), there was no necrotic tissue nor evidence of infection. Two weeks later, she had re-grafting of the vagina using skin from the right thigh which was applied to the posterior and lateral walls and was successful. She was allowed home on the 14th postoperative day and advised to purchase a vibrator for use in keeping the vagina patent.

Case 4: This is a 28 year old P0+0 school teacher who presented with an eighth- month history of dyspareunia. This had followed insertion of herbs into the vagina to treat uterine fibroids. There was however no change in her menstrual pattern. Significant findings on examination were that of normal secondary sexual characteristics. Palpation of the abdomen revealed a sixteen-week sized uterus with multiple uterine fibroids. Vaginal examination revealed a vaginal length of 4cm, there was a 2.5cm thick transverse septum which was deficient posteriorly (presumably permitting menstrual flow) in the mid- vagina and the cervix was buried in adhesions.

She had two-stage vaginoplasty performed. The first was stage created a neovagina which was packed with acriflavin emulsion gauze. Two weeks later the second stage was completed using split thickness skin graft with skin harvested from the left thigh. She had an uneventful post-operative period.

She was discharged home two weeks after application of the skin graft, with instructions on self vaginal dilation with a mould to maintain patency of the vaginal. This she did successfully at home and on follow up visits the vaginal admitted two finger breaths successfully to a depth of 8cm.

She was however lost to follow up; so it could not be ascertained whether she did or did not continue to experience dyspareunia.

Case 5: This was a 38 year old trader, Para 0+1, who presented with a ten-year history of involuntary secondary infertility and five-year history of a painless lower abdominal mass which was diagnosed as uterine fibroids. She then had abdominal myomectomy done one year prior to her second presentation when she gave a six-month history of lower abdominal pain and increasingly scanty menstruation leading ultimately to ammenorrhoea of three months duration. Prior to the development of these symptoms, she had been treated by a native doctor who had inserted corrosive herbs into her vagina.

On admission, she was ill looking and was groaning in pain. She was neither pale nor jaundiced and was anicteric and afebrile. The abdominal findings revealed a subumbilical midline scar a tender abdomino-pelvic mass of about the size of a sixteen-week cyesis. It was attached to and difficult to distinguish this mass from the uterus. Pelvic examination revealed a short (3cm long) vagina ending blindly at a transverse septum which was fibrotic with tenderness and guarding precluding proper assessment of the abdomino-pelvic mass. She had full blood count, urea and electrolytes which were within normal limits and transabdominal Ultrasound which confirmed a septate mixed echogenic mass which was attached to the a central bulky uterus. The working diagnosis was that of acquired gynaetresia with tubo-ovarian abscess (a complication of the previous laparotomy). She was then scheduled for exploratory laparotomy and two stage vaginoplasty.

At laparotomy only encysted peritoneal fluid was found which was easily drained. She had hysterotomy, retrograde cervical dilatation and first

stage vaginoplasty and the vagina was packed with acriflavin emulsion soaked gauze with intracervical and urethral cathethers left in-situ.

Twelve days later she had second stage vaginoplasty using split-thickness skin graft from the left thigh using a stent mould as the carrier of the donor skin. She did well and on review two weeks later 80 percent of the graft had taken. She was given a prescription for an adequate size vibrator which was to be used for regular self-dilatation of the vagina in place of glass dilators.

DISCUSSION

This case series shows a few of the ways in which women with congenital or acquired vaginal septa present and the modalities of investigation and treatment in a low-resource setting. These investigations must be individualized.

The hormonal profile is usually that of a normal female with age-appropriate luteinizing hormone, follicle-stimulating hormone, estradiol, and testosterone levels. This was thought to be unnecessary in the two cases of acquired gynaetresia. It was, however indicated in the third case with cryptomenorrhoea without any pelvic collection. Laparoscopy is not usually indicated unless the diagnosis cannot be determined based on findings from other studies or if the presence of a functioning uterus or rudimentary uterine tissue is a concern[2]. MRI has been found to be extremely useful as absence of the vagina and uterus on a technically adequate image confirms the diagnosis of agenesis or hypoplasia[7,8].

Also MRI can also detect any coexisting renal abnormalities[9]. In the absence of this imaging technique ultrasound was wholly relied upon in the five cases reported without any untoward effects. All the patients were adequately counseled before surgery since psychological support and counseling are essential components of the preoperative evaluation and care for many reasons. In addition to the inability to have sexual intercourse, these young women are usually infertile, resulting in psychological pain and self-esteem issues often with a lasting negative impact[10].

It has been suggested that surgical treatment should be considered only when the patient can participate in the decision making wishes to become sexually active and is highly motivated to use a vaginal prosthesis for several months after surgery[11,12]. However, when patients have presented as a result of a variety of complications as shown in these five cases, prompt surgical correction is indicated.

Of the five cases, only the 13-year old adolescent did not have the McIndoe-Read procedure, case 2 had the single stage variety while cases 3, 4 and 5 had the 2-stage procedure with fairly good outcomes. There are more than 100 different surgical and non-surgical techniques described for the formation of a neovagina[13], for example, Frank-pressure technique,[14]. Horton's vaginoplasty using full thickness skin graft,[13], fasciocutaneous flaps,[15], muscle flaps,[16] and bowel flaps,[17]. The ideal vaginoplasty is one in which the reconstructed vagina has a natural and physiological angle and a correct anatomic axis to facilitate intercourse, ideally performed in one stage with the neovagina having soft, elastic and distensible walls. It should be sensate and there should be no need for obturator or stent to maintain patency. The donor site morbidity should be minimal,[13].

Refinements in surgical techniques, such as the Vecchietti procedures (both standard and laparoscopic), have enabled many women with müllerian duct anomalies to have normal sexual relations,[18]. Other surgical advances have resulted in improved fertility and obstetric outcomes. In addition, developments in assisted reproductive technology allow some women with müllerian duct anomalies to conceive and deliver healthy babies2.

In our series the McIndoe-Read procedure using split thickness skin graft harvested from the thigh was used because we were not able to achieve a wide enough neovagina cavity at surgery to permit the use of a pudendal thigh fasciocutaneus flap which would have been a preferred reconstruction option. The pudendal thigh fasciocutaneous flap is a preferred reconstruction option because it is sensate, there is minimal donor site morbidity and most of the disadvantages of other reconstructive options are avoided. The muscle flaps tend to be bulky and the bowel flaps tend to have excessive secretions. The raw vagina surfaces which required resurfacing were not circumferential and involving the whole length of the vagina in the cases that had the skin grafts. The drawbacks in the procedure are the not easily accessible graft recipient sites, foul smelling vaginal odours. They also required prolonged stenting to prevent contraction of the vagina wall.

The McIndoe procedure has however been stated to be the most widely accepted surgical approach to müllerian aplasia. It is a highly successful procedure, and patient satisfaction is high2. There were no

major complications in these series apart from one patient who had partial graft failure due to infection. This may have been due to the fact that she had a relatively extensive procedure involving laparotomy, creation of a new cervical canal, vaginoplasty and skin-grafting at once.

In conclusion, it is mandatory to perform early and complete assessment of these women including radiological, endoscopic, biochemical and physical examination so as to provide an optimal basis for performing appropriate corrective surgery which will have a great influence on the sexual and reproductive performance of these patients in future.

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