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CASE REPORT

Obstetrics

Bicornuate uterus with recurrent pregnancy losses and bilateral tubal blockage managed with open metroplasty procedure: A case report

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Abstract

Background: Mullerian developmental anomalies (MDAs) adversely affect pregnancy outcomes. These anomalies are frequently associated with renal and axial skeleton abnormalities.

Case presentation: A 33-year-old Para 0+3 was admitted to the gynecology ward with a history of three spontaneous abortions and secondary infertility for two years. She was sonographically diagnosed with a bicornuate uterus in 2016 as part of her workup for recurrent pregnancy losses. A repeat abdominal pelvic ultrasound done showed a bicornuate uterus and a right ectopic kidney. As a result, she was scheduled for hysteroscopy and laparoscopy, followed by open Strassman's metroplasty. Postoperatively, she still had bilateral tubal blockage despite having being hydrotubated intraoperatively using intraperitoneal spill.

Conclusion: Strassman's metroplasty is effective in the management of bicornuate uteri. However, significant challenges exist in a low-resource setting which limits its access.

Keywords: bicornuate uterus, Strassman's metroplasty, uterine malformations

Introduction

A bicornuate uterus is a congenital uterine malformation that results from the failure of the paramesonephric ducts to fuse during development (1). According to the American Fertility society classification of Mullerian developmental anomalies, the bicornuate uterus is classified in class IV (2). Uterine malformations are associated with infertility, recurrent pregnancy losses, preterm labor, malpresentation, dystocia, and even rupture of the gravid uterine horn as early as ten weeks' gestation. This is due to the reduced volume of the intrauerine cavity and associated thinning of walls. However, some cases may be asymptomatic (1,3). Mullerian anomalies are also frequently associated with abnormal renal and axial skeleton abnormalities (4). Where an intrauterine device (IUD) is the contraception method, it is recommended to place the IUD in each of the uterine cavities of the bicornuate uterus, didelphys, and septated uterus (5). Live term births are achievable with a bicornuate uterus, and procedures such as cervical cerclage have enabled the prolongation of pregnancy to allow fetal maturity for extrauterine life. Bilateral pregnancies have also been reported (1,6). Patients with recurrent pregnancy losses due to bicornuate uterus and who undergo laparoscopic or open metroplasty have been observed to carry

pregnancies to term and delivered by cesarean section (7). Occasionally, uterine incarceration and torsion may occur in the bicornuate uterus, in which one horn remains trapped in the pelvis. Uterine incarceration may complicate labor and delivery, with a likelihood of uterine rupture (8). This is a case of a 33-year-old with a bicornuate uterus with a history of recurrent abortions, managed with abdominal Strassman's metroplasty.

Case presentation

A 33-year-old Para 0+3, presented to the gynecology ward at the Kenyatta national hospital (KNH) with a history of three spontaneous abortions and secondary infertility for two years. She had no history of screening for acquired thrombophilia, thyroid, or prolactin hormone abnormalities. She was seronegative for HIV. Her hemoglobin level was 14.2g/dl. She was sonographically diagnosed with a bicornuate uterus in 2016 during a workup for recurrent pregnancy losses. A repeat abdominal pelvic ultrasound confirmed a bicornuate uterus and a right ectopic kidney. A hysterosalpingogram demonstrated the two independent uterine horns fused above the internal cervical os and bilateral tubal blockage (Figure 1). A hysteroscopy done in December 2018 was inconclusive.

The patient was scheduled for hysteroscopy and laparoscopy, followed by open Strassman's metroplasty. Intraoperatively, the two horns of the uterus were visible each with a grossly normal fallopian tube (Figure 2). The ovaries were also grossly normal. On assessment with methylene blue, there was spillage from both fallopian tubes. The two uterine cornua in the bicornuate uterus were converted into one larger cavity (Figure 3). The two horns of the uteri were completely cut open from the serosa to endometrium. The intervening band of myometrium was excised, and the horns sutured into one cavity using continuous Vicryl no. 1 suture in two layers. Hemostasis was achieved. The operating time was 90 minutes. The blood loss was approximately 200 ml. A uterine balloon tamponade with silicone gauge 12 was left inside for 120 hours. Postoperatively, she was treated with antibiotics and analgesics, and the balloon was removed on the fifth postoperative day. She was also started on progynova 2 mg once a day for 20 days, followed by microlut 5mg once a day for seven days to allow breakthrough bleeding.

The patient was discharged through the gynecology clinic and advised to come back for review. A repeat hysterosalpingogram two months postoperatively showed improvement in the uterine cavity, which resembles an arcuate uterus albeit with bilateral tubal blockage (Figure 4). She was counseled to wait for six months before conceiving, with the

Figure 1: Preoperative Hysterosalpingogram

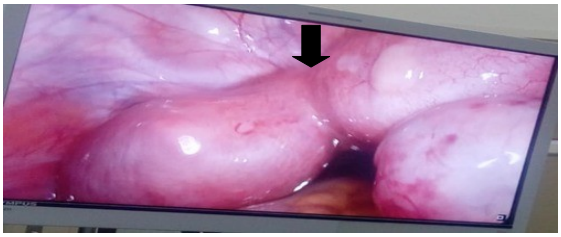

Figure 2: Laparoscopic view of the bicornuate uterus with a ridge in between the two fundi (black arrow)

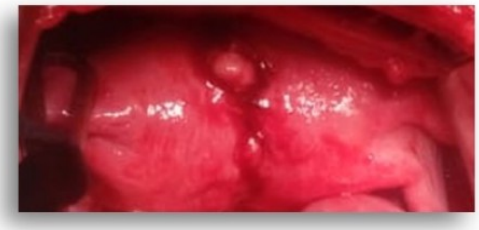

Figure 3: End result of unification of the 2 uterine horns

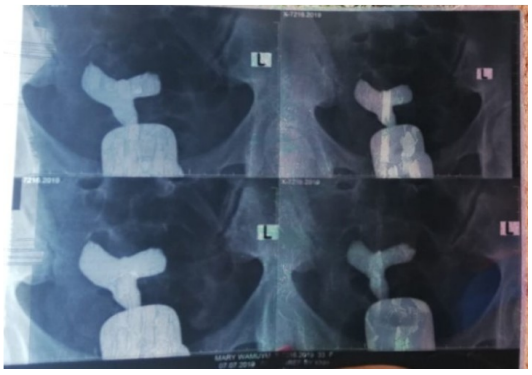

Figure 4: Hysterosalpingogram post-Strassman's metroplasty

option of in vitro fertilization. She had separated from her spouse due to her recurrent pregnancy losses, but she hoped to make up with him or get another partner and try to conceive again. The patient was linked to two support groups; the TEARS Foundation, Kenya chapter, and Waiting Wombs Trust Support group to for her psychological care, get linkages to a fertility specialist and possible future treatment options.

Discussion

The Strassman′s metroplasty is used to unify the two uterine cornua in the bicornuate uterus into one larger cavity. It can be done laparatomically or laparoscopically, with the latter conferring advantages such as shorter hospital stay, quicker recovery, better magnification, lesser infections, and fewer adhesions. It has also been shown to improve reproductive outcomes (3-4,6-9). The Strassman′s metroplasty for bicornuate uterus improves live birth rates from 3.7 to 80–100% (3). However, full-thickness incision over the uterus, including the endometrium, increases the chances of postoperative intrauterine adhesions potentially impairing fertility. Therefore, the patient in the presented case was counseled to wait for six months before conceiving, with the option of in vitro fertilization. Laparoscopic Strassman′s metroplasty is a feasible alternative to laparotomy. However, skilled expertise is essential. Significant challenges exist in the Sub-Saharan Africa, which significantly limits the availability and access to laparoscopy and thus causes a considerable drawback (9). Surgical intervention through Strassman′s metroplasty offers a significant decrease in the percentage of fetal loss (8-12%) compared to patients without surgery, (70-96%) (4). Conventional transabdominal metroplasty is safe and efficient in women with bicornuate uterine anomalies (3).

Conclusion

Strassman's metroplasty is effective in the management of bicornuate uteri. However, significant challenges exist in a low-resource setting which limits its availability.

Declarations

Conflict of interests

The authors declare no conflicts of interest.

Funding

None

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