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Akani C.I, John C.O, Korubo I.K, Olaka E.W & Omoruyi S.A

University of Port Harcourt Teaching Hospital

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Introduction: Bicornuate Uterus is a Mullerian duct anomaly which results from failure of fusion of the paramesonephric duct. The prevalence of uterine malformations like bicornuate, septate or arcuate uterus in the general population is about 6.7%, but in patients with recurrent miscarriage it is about 16.7%. Bicornuate uterine malformations are of clinical significance due to their adverse reproductive outcomes. Metroplasty has been shown to improve reproductive outcomes of bicornuate uterine malformation.

We document a case of bicornuate uterus with co-existing fibroids that was managed with conventional abdominal myomectomy and Strassman metroplasty.

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We document a case of bicornuate uterus with co-existing fibroids that was managed with conventional abdominal myomectomy and Strassman metroplasty.

Case: A 35 year old nulliparous woman presented to the gynaecological clinic with complaints of recurrent lower abdominal pains, dysmenorrhea and abdominal mass of 3 years duration.

She was evaluated for uterine fibroids and an incidental diagnosis of Bicornuate uterus was made during this evaluation. She had an abdominal myomectomy and metroplasty.

Conclusion: Strassman metroplasty is an uncommon procedure amongst gynaecologists in West Africa. This case seeks to increase awareness and add to the body of knowledge on surgical management of mullerian duct anomalies specifically bicornuate uterus in this region.

Author: Department of Obstetrics and Gynaecology, University of Port Harcourt Teaching Hospital.

I. INTRODUCTION

The prevalence of uterine malformations like bicornuate, septate or arcuate uterus in the general population is about 6.7%, but in patients with recurrent miscarriage it is about 16.7%.1 Bicornuate uterus is one of the most commonly diagnosed mullerian duct anomaly, constituting about 25% of all uterine anomalies and it is a type IV mullerian duct anomaly according to the classification of the American Society of Reproductive Medicine. 2,.3 Other classes include I-Hypoplasia/Agenesis, II-Unicornuate, III-Didelphus, V-septate, VI-arcuate and VII-Di-ethylsibestterol drug related.2,3.

The class IV malformation (Bicornuate uterus) is caused by partial non-fusion of the upper part of the mullerian ducts. This results in a central myometrium that may extend to the level of the internal cervical os (bicornuate unicollis) or external os (bicornuat bicollis), with a fundal cleft.1cm deep. 3–6 The horns of the bicornuate uteri are not as fully developed and are smaller than those in the didelphys uteri.

Patients with bicornuate uterus are usually asymptomatic but can present with symptoms like menorrhagia and dysmenorrhea which are non-specific symptoms and also a history of recurrent miscarriage, preterm deliveries and persistent abnormal lies and presentation in pregnancy. 2–4 The diagnosis is usually made as an incidental finding during evaluation for infertility and patients with recurrent miscarriage. 2–4, 7

It is important to differentiate a bicornuate from a septate uterus. Hysterosalpingogram (HSG) alone cannot differentiate these entities, because this imaging approach cannot evaluate the external

contour of the uterus.8 While laparoscopy was used primarily for this purpose in the past, modern imaging techniques including 3D ultrasonography and MRI can adequately differentiate these two entities. Imaging criteria to differentiate septate and bicornuate uteri have been developed. A septate uterus has a flat or convex fundus or a fundal indentation 60°. 3,8 On MRI, a septate uterus will fail to show an intervening myometrium between the T2-hypointense septum that separates the endometrial cavities. 3 In contrast, a bicornuate uterus will show two T2-hyperintense endometrial cavities, each with a junctional zone, myometrial band of intermediate signal intensity and a uterine fundal cleft of about 1cm or more. 3, 7.

Endoscopic procedures like laparoscopy and hysteroscopy are diagnostic and therapeutic. 3, 8.

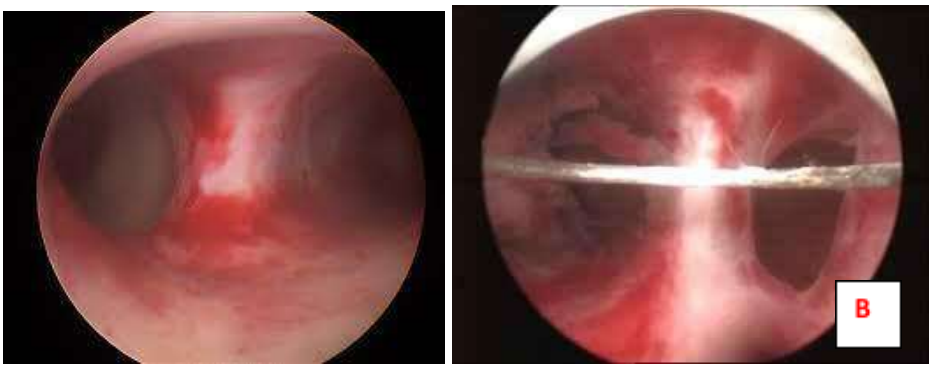
Most cases of Bicornuate uterus may not need any treatment unless they are associated with infertility, recurrent pregnancy loss or Uterine pathologies like fibroids.6, 8.

Conventional transabdominal metroplasty has been shown to significantly improve the pregnancy outcome in patients with bicornuate uterus. 2, 8 Laparoscopic approach is also technically challenging but offers the general positive benefits of endoscopic surgeries. 2, 4, 5, 8–11 Thus, the most common surgical treatment options for bicornuate uterus may include the Strassman metroplasty. The surgery entails removing the abnormal tissue that separates the cornua of the uterus, then using several layers of stitches to create a normal shape and single uterine cavity. 2, 4, 5, 8–11 The pregnancy rate following metroplasty has been seen in up to 90% of cases. 4

II. CASE REPORT

A 35 year old nulliparous woman who presented to the gynaecological clinic with complaints of recurrent lower abdominal pains, dysmenorrhea and abdominal mass of 3 years duration. There was no menorrhagia, urinary or pressure symptoms from the mass.

Abdominal examination revealed a 22 week sized abdomeninopelvic mass. She was evaluated for symptomatic uterine fibroids. Incidentally the hysterosalpingography revealed a congenitally malformed uterus, suggested to be bicornuate uterus. She was further assessed using a diagnostic hysteroscopy which showed the obvious septation with the two cavities. An intravenous urography ruled out a pathology of the urinary system. These are shown in figure 2.



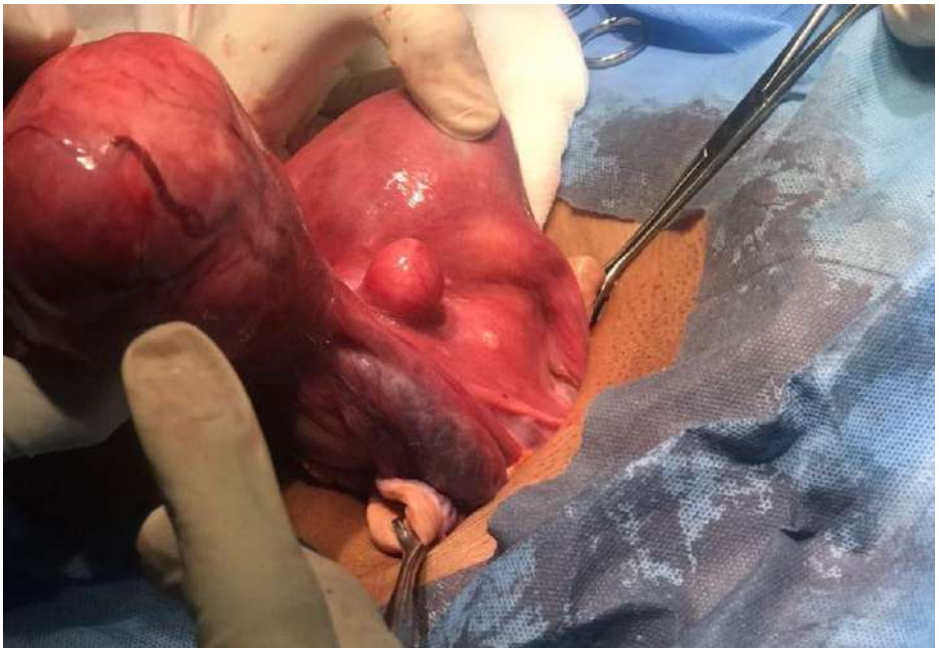
A-HSG showing bicornuate uterus B findings of septal protrusion on hysteroscopy

A diagnosis of symptomatic uterine fibroids co-existing with a bicornuate uterus was made. She was counseled and taken up for Abdominal Myomectomy and Metroplasty for uterine fibroids in a Bicornuate uterus.

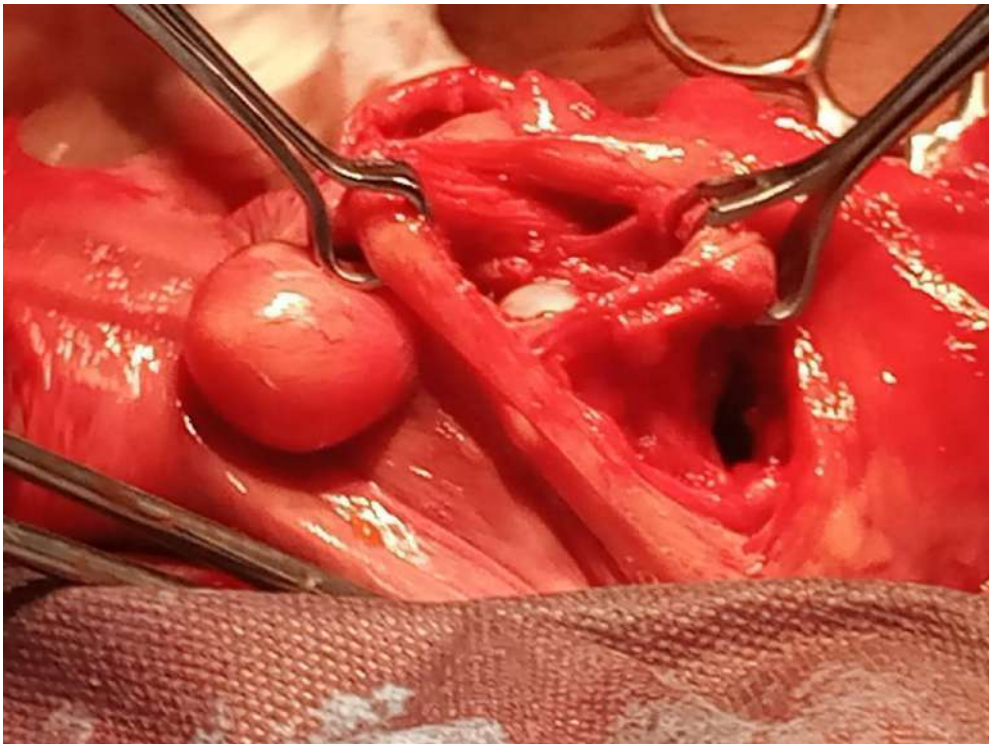
Intra-operatively, the abdomen was opened by a midline incision. The uterus was exteriorized and inspected to confirm the two horns with obvious big fibroid nodules. The tubes and ovaries were normal. A conventional myomectomy was done using only anterior uterine wall incision. An

incision extended from the superior aspect of each horn near the interstitial region of the fallopian tubes to the inferior aspect of the uterus was made to access the two cavities. The endometrium of both cavities were exposed, septum was identified and excised. Apposition of the myometrium excluding endometrium was done using interrupted sutures with 2-0 PDS to form a single uterine cavity. The rest of the uterus was reconstituted using conventional surgical techniques. The uterus was reperitonized and the abdomen was closed. Figure 3 shows intra-operative steps.

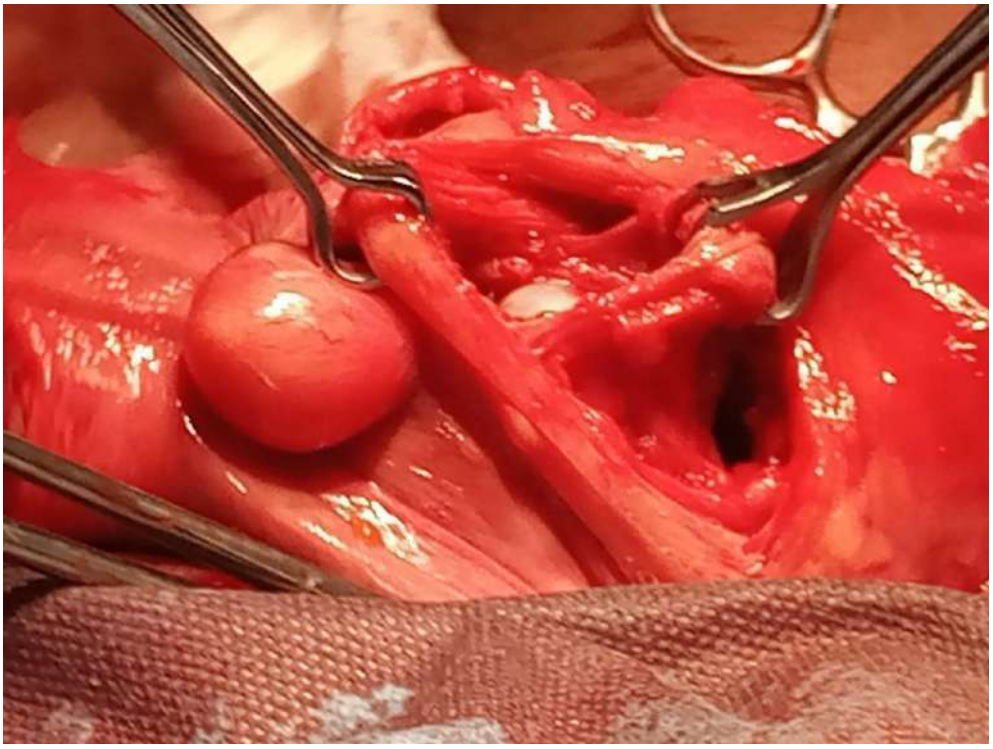
A - Uterus with fibroids on the two horns



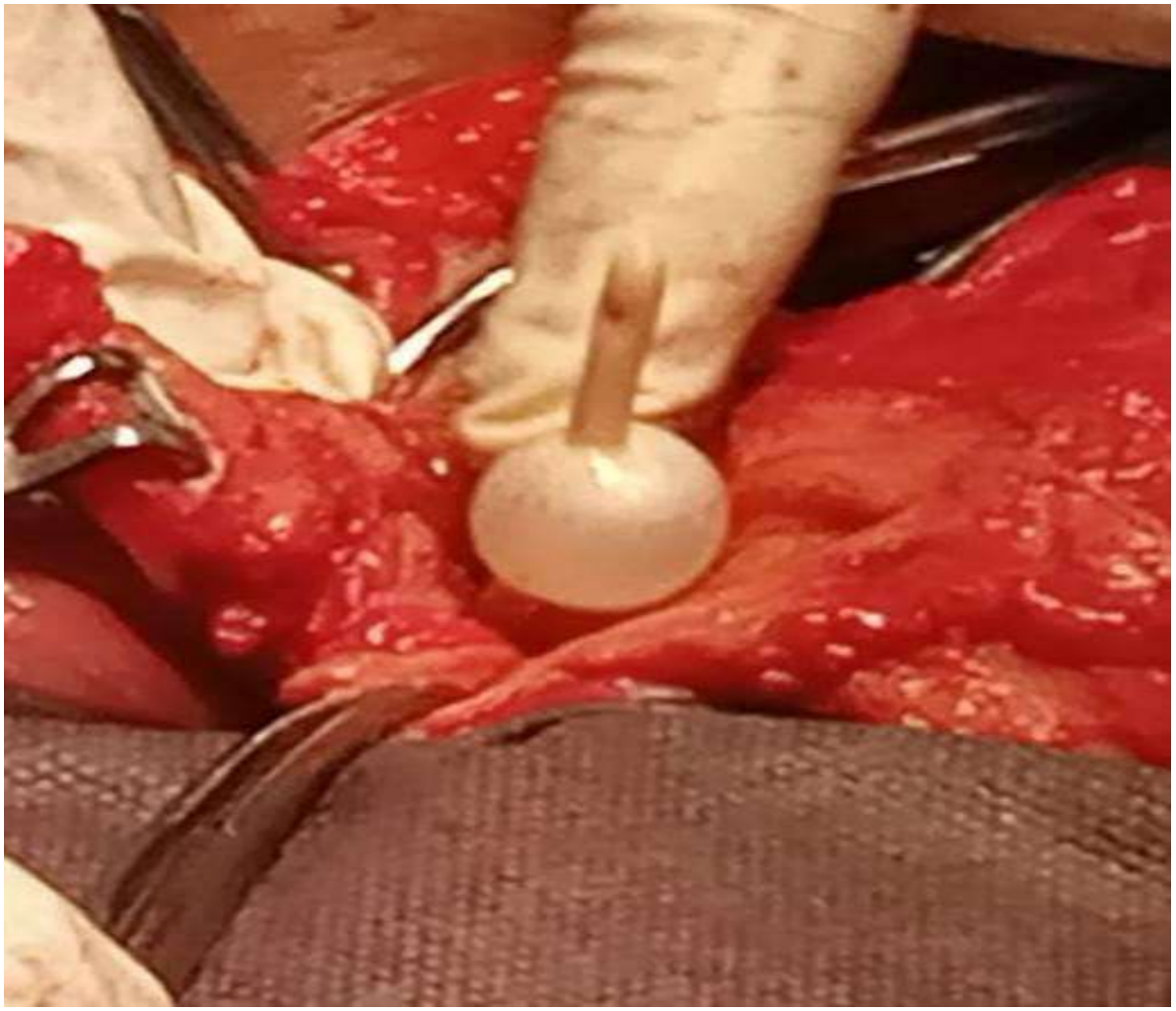
B - The uterine horns and appendages shown (grasped with the two babcock forceps)



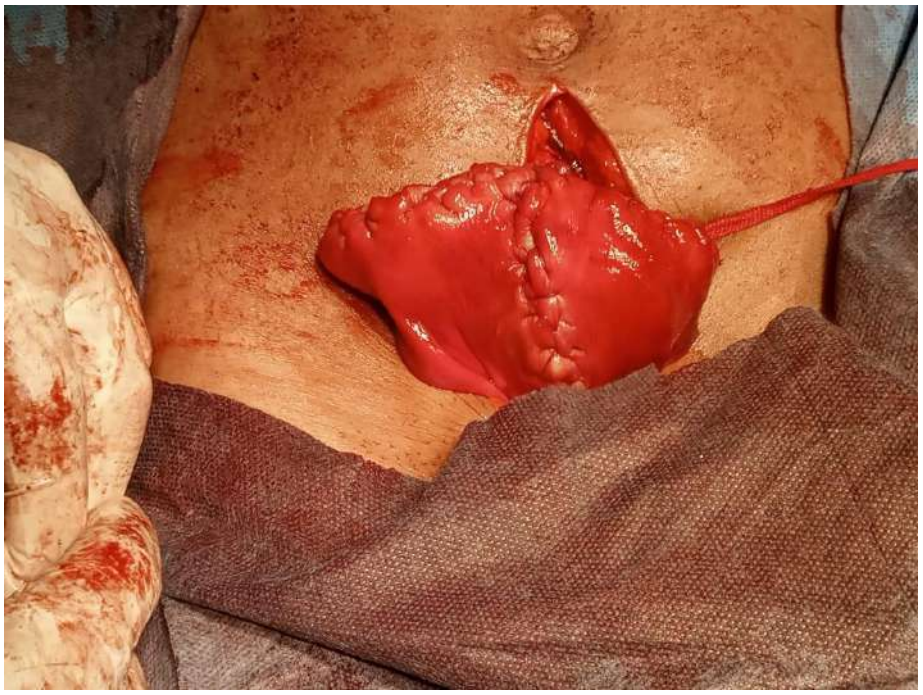
C - Yellow and Green tags showing the two different cavities, blue line showing the septum



Uterine septum coloured yellow above



D- Septum excised and a single cavity with catheter bulb in situ



E- Reconstructed uterus

The post-operative period was uneventful and an intra-uterine foleys catheter was inserted to keep the cavity patent. It was removed after 10 days. The patient was given conjugated estrogen for 21 days and medroxyprogesterone for last 10 days for 3 months.

III. DISCUSSION

Uterine bicornis was an asymptomatic incidental finding in the course of radiographic studies of the uterus of this patient. Complimentary hysteroscopy review confirmed the earlier noted findings. There was also no tubal patency on HSG, which maybe as a result of the huge fibroids on the horns of the uterus. This is the usual pattern of arriving at a diagnosis for most cases of Bicornaute uterus and other congenital anomalies of the uterus. 12–15

There are very few cases of fibroids co-existing with Mullerian anomalies reported in literature and thus the diagnosis is not often made because of the low incidence. 16

Metroplastic surgery was described by Strassman in 1952 for class III, IV and V anomalies, and it was subsequently modified and simplified by Jones in 1953 (wedge excision of the septum) and Tompkins in 1962 (incision of the septum). 4,10

Open conventional metroplasty and laparoscopy for the treatment of Bicornuate uterus are both safe and viable options. 8 The patient had an abdominal modified strassman's metroplasty that involved excision of the septum. This procedure has been widely practiced in the few symptomatic cases of Bicornuate ueterus.4,8 Intra-operatively, adequate care was taken to ensure that the myometrial edges are not sutured under tension, as it is prone to hematoma formation.

In this patient laparoscopy was indicated as an option, but considering the multiple uterine fibroids, its size and unavailability of the facilities and experience, an open abdominal procedure was considered.

Post-operative hysterosalpingography studies confirmed a single cavity and patent tubes. Pregnancy has been widely reported following metroplasty, although there is increased risk of placenta previa, morbidly adherent placenta and uterine rupture. 9,17–19.

Considering the age of the patient, even though nulliparous, pregnancy outcome as recorded in literature holds a good prognosis for the patient. 20

IV. CONCLUSION

The correction of uterine anomalies is recommended in patients who show symptoms. Surgical metroplasy has been shown to be an effective method of treatment of the symptomatic patients and also offers improvement in fertility and pregnancy outcome.

The use of laparoscopic approach to myomectomy and metroplasty is gaining grounds worldwide and Africa need to rise up to the occasion in order to offer patients the benefits of these advancements in clinical practice.

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