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By Dr. Ashok R. Anand, Dr. Adithi Jayaprakash, Dr. Pushpa C. & Dr. Aditi R. Jain

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Case description: A descriptive study of case series of metroplasty conducted in a tertiary care hospital in women with bicornuate and didelphys uterus by opening the uterine cavities by incision on the medial aspect of the hemicolpos and approximating the myometrial edges and suturing them to create a single uterine cavity.

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Strictly as per the compliance and regulations of:

Uniting the Uteri: A Case Series

Uniting the Uteri: A Case Series on Metroplasty in Mullerian Anomalies

Dr. Ashok R. Anand [α], Dr. Adithi Jayaprakash [σ], Dr. Pushpa C. [ρ] & Dr. Aditi R. Jain [ω]

Abstract- ***Background:*** Metroplasty is a reconstructive surgery to repair congenital anomalies of the uterus. Anomalous uteri are known to cause infertility and recurrent abortions due to defective implantation, restrictive foetal growth and malpresentations.

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Conclusion: By unification of two smaller uterine cavities, metroplasty restores a normal anatomy of the uterine cavity as is required for positive implantation and good obstetric outcomes.

Clinical Significance: After metroplasty, chances of conception and probability of carrying conception to full term rises significantly.

Keywords: metroplasty, mullerian anomalies, vaginoplasty, bicornuate uterus, uterine didelphys, recurrent pregnancy loss.

I. Background

Metroplasty, first illustrated in 1907 by Strassman, is a reconstructive surgery used to repair congenital anomalies of the uterus including septate, bicornuate and didelphys uterus. This surgery involves removal of the abnormal tissue that separates the uterine cornua, and then creating a normal shaped uterus by suturing in multiple layers.[1]

Although most women with Mullerian anomalies can conceive without difficulty, obstetric complications and adverse pregnancy outcomes have been more commonly reported in anomalous uteri. They are associated with a high rate of recurrent spontaneous abortions, preterm labour, cervical incompetence, malpresentations, foetal growth restriction, high risk of uterine rupture, retained placenta and post-partum haemorrhage. Risk of pregnancy wastage differ with the type of uterine anomaly— maximally in bicornuate and septate uterus, i.e., 60%, 55% in uni-cornuate and didelphys uteri and 35% in arcuate uterus.[2] Uterine anomalies are seen in approximately 12.6% (1.8-37.6%) of patients with recurrent pregnancy loss as compared with 4.3% (2.7-16.7%) of the general population.[2] Often, they are seen accompanying various renal anomalies. According to Thompson and Lynn,[3] 40% of females with congenital absence of the kidney are found to have associated genital anomalies.

Surgical interventions are indicated when there is obstruction causing associated pelvic pain and endometriosis and for women with poor obstetric outcomes.[4] Before metroplasty, extra-uterine causes need to be ruled out. The goals of metroplasty are restoration of pelvic anatomy, preservation of fertility, and treatment of pelvic pain and endometriosis.

We hereby discuss 5 cases of congenitally anomalous uteri, in whom we performed metroplasty.

II. Case Description

The procedure was initiated by a transverse incision in the lower abdomen through which the abdomen was opened and uterus was visualised. To minimise the blood loss, injection vasopressin was injected into the myometrium or temporary bilateral uterine artery ligation was done using a constricting Foley's catheter. In cases of bicornuate and didelphys uteri, both the cornua are deeply incised on the median side in their long axis to expose both the uterine cavities. Care was taken to avoid injury to the fallopian tubes. The cut edges of the myometrium were then approximated and sutured vertically anteriorly and posteriorly with Vicryl 2-0 in continuous manner in three layers in order to create a single uterine cavity.

Case 1: OHVIRA / Herlyn-Werner-Wunderlich Syndrome: Uterine didelphys + Hematometra/ Hematocolpos + Absent Right Kidney

A 28-year-old female, married for 10 years, presented with Primary infertility. Pelvic examination showed *unicollis* and presence of *bogginess* in the right lateral fornix.

USG showed absence of right kidney and two separate uterine cavities and cervices- s/o **Uterine didelphys.** ESHRE Classification **U3BC2**, with approximately equally sized right and left horns. A collection of ~5cc was seen in right cervical canal and upper third of vagina s/o **Hematometra + Hematocolpos.**

Author α: Prof. & HOD, Grant Government Medical College and Sir J. J. Group of Hospitals, Mumbai, India.
e-mail: ashokanand1616@gmail.com
Author σ ρ ω: Resident, Grant Government Medical College and Sir J. J. Group of Hospitals, Mumbai, India.

The two uterine horns were united by metroplasty, and follow-up USG showed a single uterine cavity with resolution of hematometra and hematocolpos. (Fig. 1)

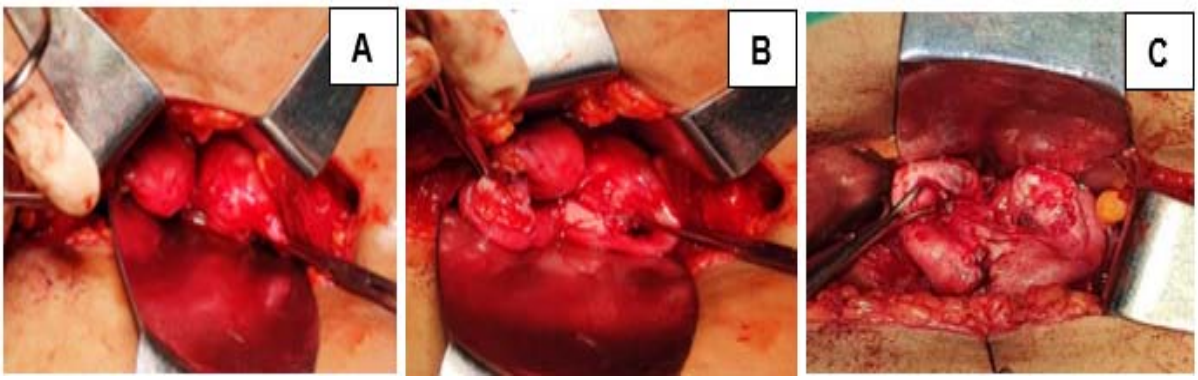

Figure 1: A: Uterine didelphys. B: Cavity opened. C: Edges of cavity approximated and sutured.

Case 2: Bicornuate Uterus

A 33-year-old female, married for 9 years, with previous 2 spontaneous abortions at 4-5 months of gestation, presented with secondary infertility. USG and HSG revealed bicornuate uterus with approximately equal sized right and left horns. Metroplasty was performed and follow-up USG showed a single uterine cavity. (Fig. 2)

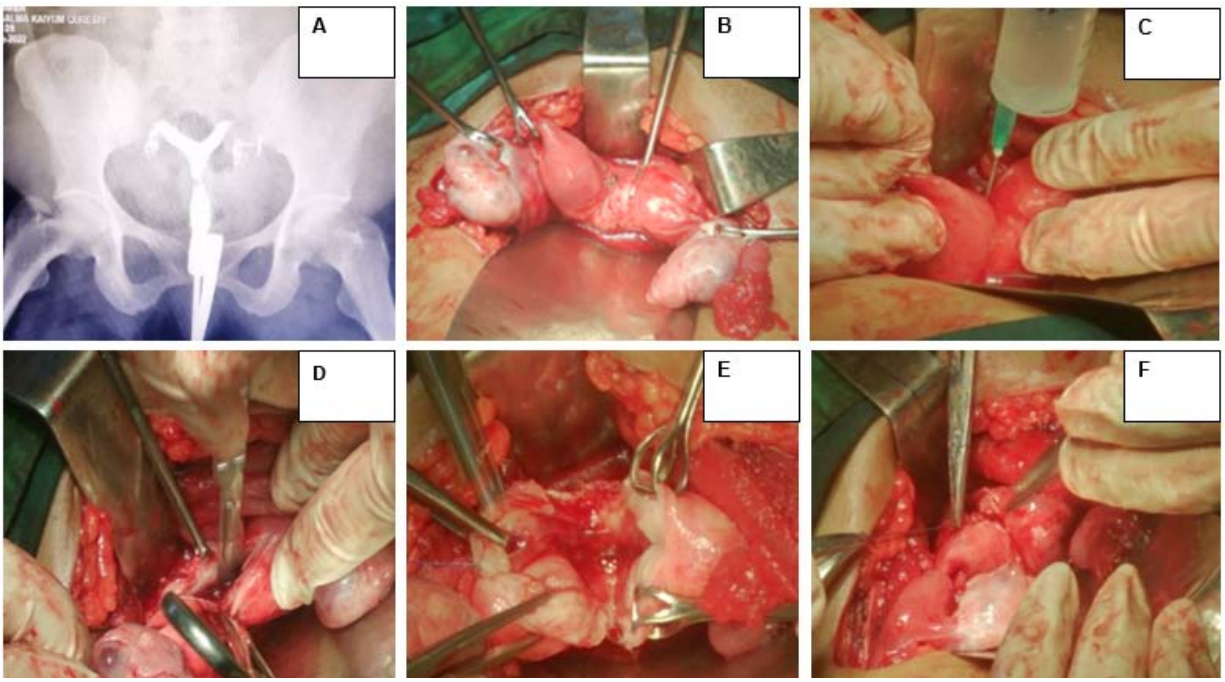

Figure 2: A: HSG s/o Bicornuate uterus. B: Bicornuate uterus on laparotomy. C: Vasopressin injected to minimize the blood loss during surgery. D: Transverse incision taken over uterine fundus. E: Uterine cavity opened. F: Edges approximated & sutured vertically

Case 3: Bicornuate Uterus

A 35-year-old, female married for 8 years, with a spontaneous abortion at 4th month of gestation, presented with Secondary infertility. USG showed bicornuate uterus with almost equal right and left horns, communicating in the lower third of the uterus, s/o Bicornuate uterus. ESHRE Class: U3a. HSG confirmed the same. Follow up- HSG post metroplasty showed resolution with slight depression in the fundal region. (Fig. 3)

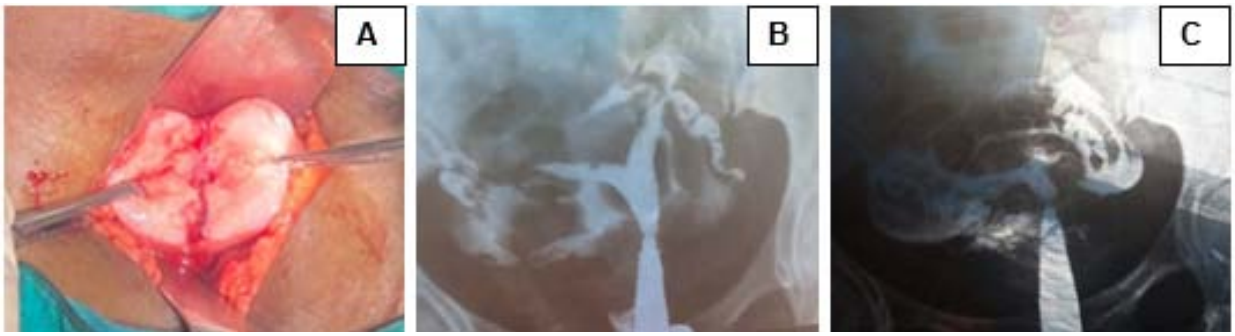

Figure 3: A: Opening the uterine cavity for metroplasty.

B and C: Comparison of pre-op and post-op HSG

Case 4: Bicornuate Uterus

A 34-year-old female married for 9 years, with 4 spontaneous abortions at 3-4 months of gestation, presented with secondary infertility. USG showed Bicornuate uterus with almost equal right and left horns, communicating in the lower third of the uterus, s/o Bicornuate uterus, with HSG confirming the diagnosis. Post metroplasty, she had a successful pregnancy till term and underwent LSCS uneventfully. (Fig. 4)

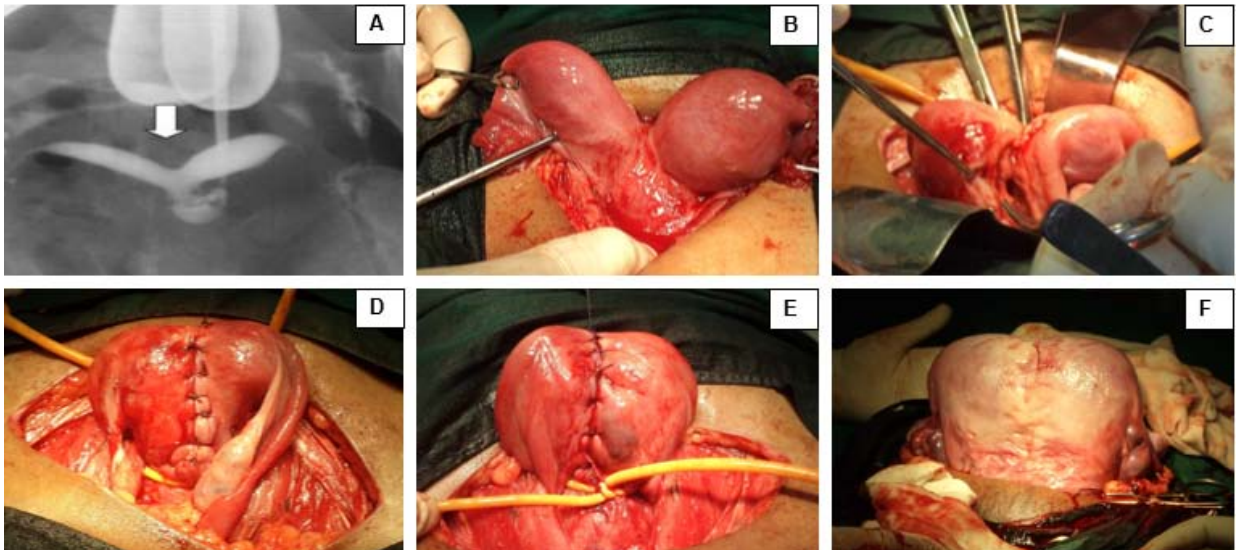

Figure 4: A: HSG s/o Bicornuate uterus. B: Bicornuate uterus. C: Temporary ligation with Foleys and opening uterine cavity. D and E: Anterior and posterior surface after suturing. F: Healed uterus as seen during Caesarean section.

Case 5: Uterine didelphys with high vaginal septum

A 29-year-old, female married for 2 years, nulligravida, presented with dyspareunia and primary infertility. Patient was a known case of uterine didelphys with vertical vaginal septum and gives history of being operated for imperforated anus in childhood. Pelvic examination showed complete vertical vaginal septum with two vaginal canal leading to two separate cervices. Both the cervices were short and flushed with vagina and UCL was measured as 3 inches on both sides. USG showed uterine didelphys with vertical vaginal septum. Patient underwent vaginoplasty and metroplasty and post operatively, dilatation with Hegars No. 28 dilators was advised. The patient was able to have normal sexual function. (Fig. 5)

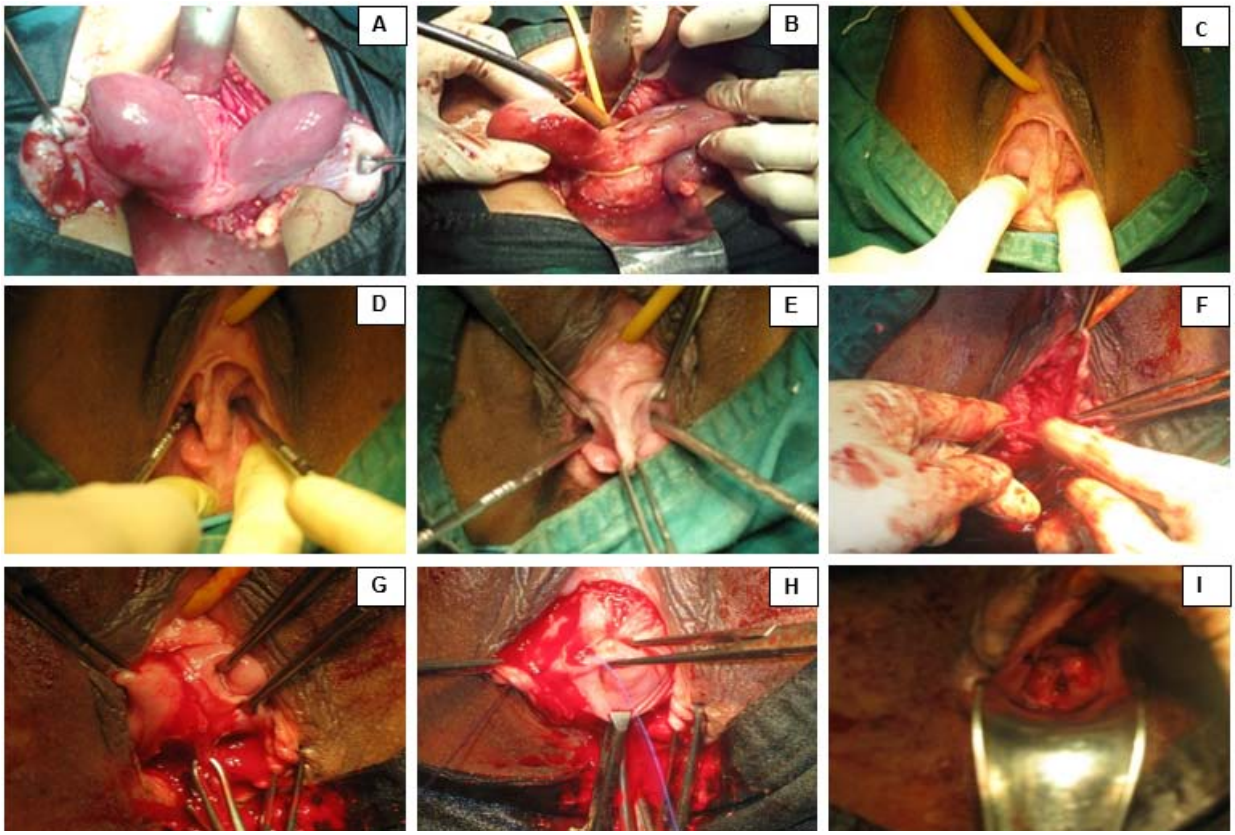

Figure 5: A: Uterine didelphys. B: Opening cavity during metroplasty. C: Complete vertical septum infiltrated with saline. D: Vaginal canals opening into two separate cervical openings. E: Anterior lip of cervices held with Allis' forceps and vertical incision taken over septum. F: Plane of dissection maintained along the septum. G: Redundant mucosa cut. H: Cut ends sutured with vagina with Vicryl 3-0. I: Vagina with two cervices.

Post procedure, the patients were advised to avoid conception for at least 1 to 2 years and all future pregnancies are to be terminated by Caesarean section to avoid risk of uterine rupture at the relatively weak suture sites during labour.

All women were advised a repeat HSG and USG after 3 months, which in all the cases confirmed the unison of the uteri into a single cavity.

III. Discussion and Clinical Significance

Surgery is not a rule for all cases of uterine anomalies. Most women with minor uterine anomalies conceive spontaneously and carry pregnancy till term. However, metroplasty is indicated when there is history of two or more fetal wastages, and when other causes are ruled out.

A review of literature reveals that Strassman metroplasty significantly improves the obstetric outcomes in women with Mullerian anomalies. The rate of fetal wastage prior to metroplasty was found to range from 70-88% in various studies, in comparison to live birth rates of 81-85% after metroplasty.[5-11]

Prior to abdominal metroplasty, the uterine anomaly needs to be confirmed. Accuracy of hysterosalpingogram alone is only 55% for differentiation of septate uterus from the bicornuate uterus[13], and hence is confirmed by 3-D USG and MRI. A more suitable modality in settings where facilities are available, hystero-laparoscopy can be performed, wherein septate uterus, when detected can be corrected by hysteroscopic resection in the same setting, with minimal invasion, thus avoiding unnecessary laparotomies. However, the enlarging use of hysteroscopic metroplasty is not wholesome as it may create cervical fragilization, thus necessitating a cervical cerclage in order to prevent 2nd trimester pregnancy loss. The abdominal metroplasty still remains the operation of choice destined to treat cases of bicornuate uterus or uterus didelphys due to high risk of perforation during hysteroscopic correction.

References Références Referencias

1. Hoffman BL, et al. Williams Gynecology. 3rd Ed. 2016; 422.
2. G. F. Grimbizis, M. Camus, B. C. Tarlatzis, J. N. Bontis, and P. Devroey. Clinical implications of uterine malformations and hysteroscopic treatment results. Human Reproduction Update. 2001; 7: 161-174.

3. Thompson DP, Lynn HB. Genital anomalies associated with solitary kidney. Mayo Clin Proc. 1966; 41: 538.
4. Rackow, B. W., & Arici, A. Reproductive performance of women with müllerian anomalies. Current opinion in obstetrics & gynecology. 2007; 19: 229-237.
5. Homer, Hayden Anthony. Modern management of recurrent miscarriage. Australian and New Zealand Journal do Obstetrics and Gynaecology. 2018; 59: 36-44.
6. Strassman EO. Fertility and unification of double uterus. FertilSteril. 1966; 17: 165-76.
7. Papp Z, Mezei G, Gávai M, Hupuczi P, Urbancsek J. Reproductive performance after transabdominal metroplasty: a review of 157 consecutive cases. J Reprod Med. 2006; 51: 544-52.
8. R. Tomasz, M. Marta, and B. Aleksandra. Clinical effectiveness of Strassman operation in the treatment of bicornuate uterus. Ginekologia Polska. 2009; 8: 88-92.
9. F., Valle R. Hysteroscopic treatment of partial and complete uterine septum. International journal of fertility and menopausal studies. 1996; 41: 310-315.
10. Lolis DE, Paschopoulos M, Makrydimas G, et al. Reproductive outcome after Strassman metroplasty in women with a bicornuate uterus. J Reprod Med. 2005; 50: 297-301.
11. Tomasz R, Marta M, Aleksandra B. Clinical effectiveness of Strassman operation in the treatment of bicornuate uterus. Ginekol Pol. 2009; 2: 88-92.
12. Juillion, Perrine. What is the difference between bicornuate and didelphys uterus? Available at: https://studybuff.com/what-is-the-difference-between-bicornuate-and-didelphys-uterus/