



HYSTEROSCOPIC TRANSCERVICAL UTERINE INCISION /METROPLASTY-A NOVEL TECHNIQUE FOR UNICORNUATE UTERUS – PRESENTATION OF TWO CASES.

Gynaecology

Dr.A.Madhu Mitha* DNB(OG). Fellow Manchanda Endoscopy Centre, PSRI Hospital, Newdelhi
*Corresponding Author

Dr.Rahul Manchanda MS(OG) HOD Gynaec Endoscopy, PSRI Hospital, Newdelhi

Dr.Sandhya Deora MS(OG) Fellow Manchanda Endoscopy Centre, PSRI Hospital, Newdelhi

ABSTRACT

INTRODUCTION: Unicornuate uterus constitute about 4.4% of the mullerian anomalies. At present, there are no accepted treatment method for women with unicornuate uterus. Complications associated with an isolated unicornuate uterus are usually related to the pregnancy outcome like first- and second-trimester abortions, intrauterine fetal demise and preterm labour.

CASE PRESENTATION: We report 2 cases of women with unicornuate uterus presenting with primary infertility, undergoing hysteroscopic transcervical uterine incision(TCUI) and having spontaneous conception within a year.

CONCLUSION: Hysteroscopic TCUI can be a good option for women with unicornuate uterus presenting with miscarriages or infertility, but still more studies are needed to substantiate it as the gold standard treatment.

KEYWORDS

Unicornuate uterus , infertility, Hysteroscopic transcervical uterine incision, preterm labour

INTRODUCTION

Congenital uterine anomalies results either from an abnormal formation, fusion or resorption of fusion septum of the paramesonephric ducts during fetal life. The prevalence of uterine anomalies diagnosed by optimal tests was 5.5% in an unselected population, 8% in infertile women and 13.3% in those with miscarriages¹. American fertility society (AFS)² classified the mullerian anomalies broadly in to eight classes based on the type of embryologic defect. *Unicornuate uterus*, which belongs to class II of AFS classification, represents unilateral hypoplasia or agenesis where in the *uterus* is formed only from one of the paired Müllerian ducts while the other Müllerian duct do not develop or only in a rudimentary fashion.

Though the true incidence of unicornuate uterus is difficult to assess because of the wide range of clinical spectrum, literature suggests it may account to about 4.4% of the uterovaginal anomalies³. At present, there are no accepted treatment method for women with unicornuate uterus, other than expectant measures. In this report, we present two cases of successful pregnancies in women with unicornuate uterus following hysteroscopic Transcervical uterine incision (TCUI).

CASE 1:

22 year old women was diagnosed as a case of unicornuate uterus on hysterosalpingography (figure 1) as a part of baseline investigation for primary infertility.

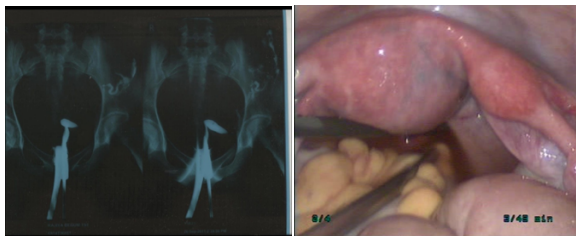


Figure 1: Hysterosalpingogram showing left unicornuate uterus



Figure 2: Unicornuate uterus with right rudimentary horn (arrow)

Diagnostic hystero laparoscopy was done and the diagnosis of unicornuate uterus was confirmed (figure 2). She underwent hysteroscopic TCUI and was given cyclical hormones for a month following which relook hysteroscopy was done. It revealed a proliferative expanded cavity and the patient was again given cyclic hormones for 2 months. The patient was advised timely intercourse since rest of the factors of infertility was normal. The patient had a spontaneous conception 6 months after the procedure. Antenatal

period was uneventful with the patient going in to spontaneous labour at 38 weeks and delivered a live female baby of birthweight 2.9 kg.

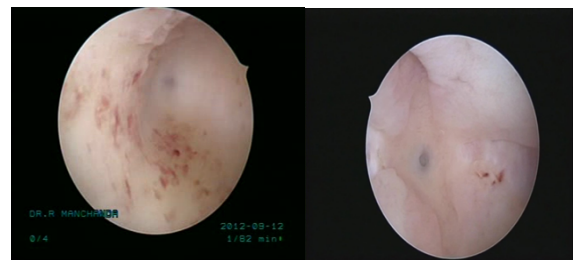


Figure 3: Uterine Cavity before resection

Figure 4: Uterine cavity after resection in relook hysteroscopy

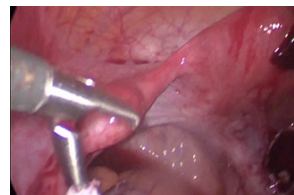


Figure 4 : Unicornuate uterus with left rudimentary horn (arrow).

CASE 2:

29 year old woman, married since 6 years, presented with primary infertility. She was a known case of Unicornuate uterus, diagnosed 5 years back while she underwent laparoscopic cystectomy for twisted ovarian cyst (right dermoid cyst). Other factors of infertility were ruled out. On hysteroscopy uterine cavity appeared tubular and small with normal right side ostia. (Figure 5)

On laparoscopy:

- Left tube attached to small uterine horn which was attached to body of uterus by band of muscular tissue (Figure 4)
- Left side dermoid cyst 3*4 cms found and cystectomy was done for the same
- Chromoperturbation showed right tubal spill.

After cyclical hormones for 1 month relook hysteroscopy was done in which the uterine cavity appeared larger than the previous time (Figure

6). Cyclical hormones was repeated for a month, following which the patient was advised timely intercourse. The patient had spontaneous conception 8 months after the metroplasty. She is now 10 weeks pregnant with her early obstetric scan confirming viable intrauterine pregnancy.

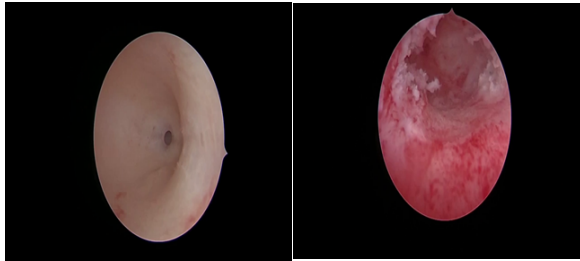


Figure 5: Tubular Cavity visualised through hysteroscope.

Figure 6: Enlarged cavity after hysteroscopic lateral metroplasty

DISCUSSION:

Surgical management of unicornuate uterus depends on two main factors -the subtype of the unicornuate uterus and the symptoms with which the patient presents. Markham and Waterhouse¹ believed that patients with unicornuate uterus were not candidates for surgical reconstruction. AFS subclassified unicornuate uterus (class II) in to communicating (IIa), non communicating (II b), no cavity (II c) and no horn (II d) based on the condition of the rudimentary horn.

Around 75%–90% of cases of unicornuate uterus with rudimentary horn are non-communicating². Such patients generally present either at menarche with obstructive symptoms like dysmenorrhea and chronic pelvic pain due to hematometra, and hematosalpinx or with ectopic pregnancies and rupture of the rudimentary horn⁶. The best noninvasive imaging modalities for this group of women are 3D sonography and magnetic resonance imaging (MRI). The literature suggests the need to remove the rudimentary horn of a unicornuate uterus and supports the laparoscopic approach over laparotomy^(7,8).

Since the first report by Canis et al.⁹ laparoscopic resection of rudimentary uterine horn has rapidly become the standard treatment of such Mullerian dysgenesis, especially to prevent severe complications as ectopic pregnancy or extensive endometriosis. Unicornuate uterus is also frequently associated with urinary tract anomalies¹⁰

HYSTEROSCOPIC TCUI:

Following is the operative details of TCUI performed in this case report. The patient was put under general anesthesia and placed in lithotomy position. Hysteroscopic bipolar electroresectoscope /bipolar cautery was inserted into the uterine cavity with 0.9% normal saline distention media under 70 mmHg distention pressure. The procedure commenced with a transverse incision over the narrowed fundal part of the unicornuate horn starting from the cornu, using a collin's knife or needle electrode. Then, Vertical cuts of 1 to 2 mm were made on both side lateral walls of the uterus extending till the internal os. This helped in making a tubular cavity in to a triangular cavity with more space (as shown in figure 7 and 8).

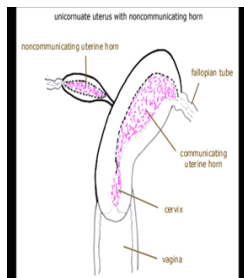


Figure 7: Diagrammatic representation of Unicornuate uterus



Figure 8: Post TCUI. Dotted lines indicate the expanded cavity

Xia et al¹¹ performed TCUI in about 33 patients with unicornuate uterus and about 20 patients conceived and 16 had live birth. They had the following modifications to the procedure as described in our study

- Resection of only the opposite uterine wall of unicornuate horn side, while in our study both walls incisions were made
- performing either under ultrasound or laparoscopy guidance
- A Foley catheter was inserted into the uterine cavity after the surgery and removed after 5–7 days.

UNICORNUATE UTERUS AND ADVERSE PREGNANCY OUTCOME:

The reproductive performance of women with unicornuate uterus is poor, with a live birth of 29.2%, prematurity of 44%, ectopic pregnancy of 4%, the first trimester miscarriages of 24.3%, second trimester miscarriage of 9.7% and intrauterine fetal death of 10.5 %^(12,13). Pregnancy outcome in the first case in our report was good with a live term baby of good birthweight. Since the second case is in her first trimester, outcome could not be determined in this report.

PRETERMLABOUR:

McAvey and Chasen et al¹⁴ suggested that preterm birth in unicornuate uterus may be as high as 50%. According to Xia et al¹¹ even after TCUI metroplasty, patients with unicornuate uterus were still at high risk of preterm delivery, the preterm delivery rate after TCUI was 27% in their study. Decreased muscle mass in the unicornuate uterus and associated cervical incompetence were proposed as the possible reasons for preterm delivery and second trimester miscarriages. Golan et al¹⁵ reported 30% incidence of cervical incompetence in the congenital uterine anomaly. There are no consistent data to validate any intervention to delay preterm labour in such cases. Thus, it is important that patients who conceived after TCUI be managed in high-risk obstetrics units with regular ultrasound monitoring of cervical length. There is currently no convincing evidence¹⁶ that routine cervical cerclage should be performed in women with Müllerian anomaly.

UNICORNUATE UTERUS AND FETAL OUTCOME:

Unicornuate uterus is often associated with intrauterine fetal growth restriction, intrauterine fetal demise and neonatal death most commonly due to prematurity. Abnormal uterine blood flow, restricted expansion of an abnormal endometrial cavity and abnormal placental implantation may be the possible reasons. Thus antepartum fetal surveillance as for any high risk pregnancy should be carried out in a pregnancy with unicornuate uterus. Current guidelines¹⁷ advises serial growth ultrasound examinations in the case of a unicornuate uterus pregnancy.

CONCLUSION:

Unicornuate uterus is often associated with adverse pregnancy outcomes. Hysteroscopic TCUI which rests on the principle of surgically expanding the uterine cavity can be a good option for the management of patients with unicornuate uterus but more widespread use of this procedure and literature is needed before considering it as a gold standard treatment for the latter.

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