Pregnancy-Induced Hypertension with Thrombocytopenia, Hypothyroidism, and Uterine Septum – A Complex Infertility and Pregnancy Outcome

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ABSTRACT
Septate uterus is the most common congenital uterine anomaly, often linked to infertility, miscarriages, and preterm births. Here, we present a 28-year-old nulligravida female presented to the obstetrics and gynecology outpatient department with primary infertility for six years. She had regular menstrual cycles, and a history of hypothyroidism managed with thyroxine. Imaging revealed a complete uterine septum with a single cervix, and magnetic resonance imaging (MRI) confirmed a partial septate uterus with cervical pseudoseptum. She underwent hysteroscopic septal resection with laparoscopic guidance, leading to successful conception via intrauterine insemination. This study was done to establish a conservation approach of management in a complicated pregnancy. During the antenatal period, she developed spotting per vaginum which led to an increased risk of spontaneous abortion, placental abruption and preterm delivery. As her pregnancy continued we observed that the patient developed pregnancy induced hypertension at 28 weeks of gestation for which she was started on antihypertensives followed by thrombocytopenia with a platelet count of as low as 25000/ul at 33 weeks of gestation and deranged liver function tests later. A multidisciplinary management was essential in addressing pregnancy-related complications so as to conserve the pregnancy for as long as possible.

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Introduction
Congenital uterine anomalies result from incomplete Müllerian duct development, fusion, or resorption during fetal life, with septate uterus being the most common anomaly.1 A septate uterus is characterized by a fibrous or fibromuscular band dividing the endometrial cavity, which can impair implantation and increase miscarriage risk due to poor vascularization.3 There are various pregnancy outcomes post septal resection such as:- (i) Spontaneous miscarriage (ii) Preterm delivery (iii) Adverse obstetric outcomes such as placenta praevia, postpartum hemorrhage, uterine rupture, and placental abruption. Here, we report a case of a 28-year-old nulligravida with primary infertility due to a complete uterine septum, successfully managed with hysteroscopic septal resection, followed by conception via intrauterine insemination. This report aims to present the conservative management of various obstetric complications such as pregnancy induced hypertension, thrombocytopenia and hypothyroidism in a singleton pregnancy.

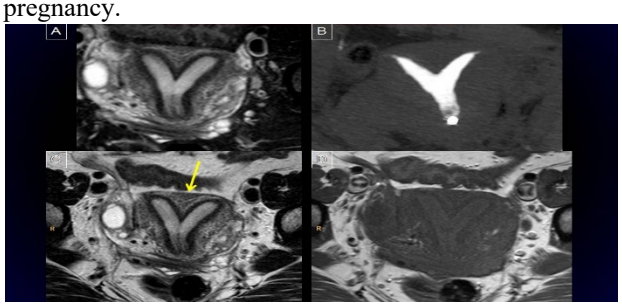

Figure 1: MRI showing partial septate uterus

CASE PRESENTATION
A 28-year-old nulligravida female presented to the gynecology OPD with complaints of infertility for the past six years. Her menstrual cycles were regular, lasting 28-30 days, with bleeding for 3-4 days. She has been married for eight years. The patient has a known history of hypothyroidism for six years and was on T. Thyronorm 25 mcg OD. She also has a history of dilatation and curettage in 2018 and 2021 at a private hospital for infertility management. On clinical examination, her pulse rate was 80 beats per minute, and blood pressure was 132/84 mmHg. Per speculum examination revealed a healthy cervix and vagina. On per vaginum examination, the uterus was of normal size, and the bilateral fornices were free and non-tender.

Transvaginal ultrasound examination revealed a complete uterine septum with a single cervix. The uterus was anteverted, the endometrial thickness was 7 mm, and both ovaries were normal. MRI showed an anteverted uterus with two endometrial cavities in the upper half, indicating a partial septate uterus. A cervical pseudoseptum was also present. The patient was admitted, and all routine investigations were completed. Blood and blood products were arranged. She received intravenous antibiotics (ceftriaxone 1 g and metronidazole 500 mg). The risks and benefits of laparoscopic-guided hysteroscopy with chromopertubation under general anesthesia were explained, and written high-risk consent was obtained. Hysteroscopy revealed a thick fibrous uterine septum

extending to one-third of the uterine cavity, a normal endometrium, patent bilateral ostia, and a partial pseudoseptum in the cervical canal and cervix. Laparoscopy confirmed tubal patency using the methylene blue test. The patient was scheduled for septal resection in the next menstrual cycle.

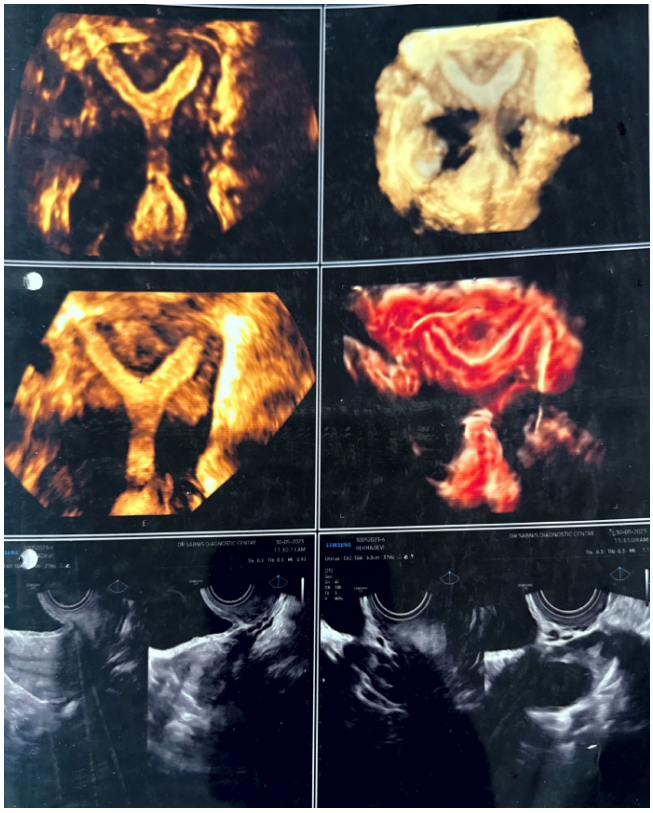

Figure 2: Partial septate uterus seen on hysterosalpingography

She was later admitted for Hysteroscopy guided septal resection under spinal anaesthesia. After routine investigations and anaesthesia fitness, written high-risk consent was obtained. Intraoperative findings revealed a broad-based fibrotic septum, which was resected up to its base using cold scissors. A broad, open uterine cavity was visualised with bilateral cornua, a normal cervical canal and cervix, and a normal endometrium. The patient later conceived via intrauterine insemination and was followed up for routine antenatal checkups. She presented to the OPD with complaints of spotting per vaginum which indicated threatened abortion. An ultrasonography was done to reconfirm the viability and tranexamic acid was given to stop the bleeding. At 11 weeks, her haemoglobin dropped to 8 g/dL, for which hematinic injections were administered. At 12+4 weeks, she was scheduled for cervical cerclage, during which her platelet count had significantly dropped to 78,000/µL. A cervical stitch was placed using the MacDonald technique with Prolene No. 1. However, during pregnancy, she developed pregnancy-induced hypertension without proteinuria, thrombocytopenia,

and deranged liver function tests, with a previous history of hypothyroidism. Peripheral blood smear showed finding suggestive of mild haemolysis and thrombocytopenia with many giant platelets. Laboratory investigations were extended to exclude disseminated intravascular coagulopathy (DIC) profile, infections immune status and autoimmune disorders. She was started on T. Labetolol 100mg BD at 28 weeks of gestation and T Aspirin 75mg OD. In order to find out the unexplained cause of hypertension, anti-phospholipid antibody testing was done at 25+3 weeks which was negative. Steroid cover was also given to the patient. Mildly deranged liver function tests were noted (SGOT – 51, SGPT – 48). The patient was closely monitored throughout her antenatal period for any further hematological or hepatic complications. Her labs are as follows:-

	13/7/24	26/11/2024	4/12/24
Weeks of Gestation	13+4	33+0	34+1
Hemoglobin	10.9	13	13.3
TLC	4800	7540	9900
Platelet	78000	45000	81000
S. Bilirubin	0.46	0.21	0.37
SGOT	57	68	123
SGPT	48	48	67
LDH	249	257	629
PT/INR		9.9/0.83	10/0.81

Figure 3: - Lab findings

At 32+5 weeks of gestation, Patient presented with a manual platelet count of 25000/ul with no bleeding manifestations. The haematologist advised to start the patient on T.Prednisolone 60mg ODx 10 days, Inj. Romiplostim 250mcg (Thrombopoietin peptide analog) sc stat and platelet transfusion if count less than 10000/ul. Romiplostim is a thrombopoietin receptor agonist, it works by binding to the TPO receptors on megakaryocyte precursors which stimulates them to give rise to platelets. After follow up it was observed that the platelet count had increased from 25000/ul to 57000/ul after giving inj. Romiplostim. At this point of time the bleeding time was 3 minutes and clotting time was 6 minutes. A 2D echo was also performed with revealed normal left ventricle size and systolic function, LVEF-60% and normal diastolic function. An ultrasonography was done which revealed single live intra-uterine gestation of 33 weeks 2 days, breech presentation, estimated fetal weight 0f 1968 grams, amniotic fluid index of 17-18cm suggestive of mild polyhydramnios, internal os dialated measuring upto 7 mm, doppler studies revealed mean uterine artery PI is 1.16

(pathological), umblical and MCA doppler – normal. The patient delivered at 34+2 weeks of gestation by elective lower segment caesarean section. The risks and benefits of the procedure under spinal anesthesia were explained, and written high-risk consent was obtained. Elective lower segment caesarean section was done as an early gestational age because there was arise in platelet count to 81000/ul, although a minimum platelet count of one lakh is required. The baby was shifted to neonatal ICU due to low birth weight and eventually given to the patient in 2 days.

Discussion

Congenital uterine anomalies, particularly septate uterus, though uncommon, are among the most common malformations associated with infertility and recurrent pregnancy loss, with few cases reported in the literature. Studies have demonstrated that uterine septum can significantly impair implantation and increase the risk of early pregnancy loss due to reduced vascularization and altered endometrial receptivity.2 In our case, a 28-year-old nulligravida with a complete uterine septum and a history of infertility underwent successful hysteroscopic septal resection, followed by conception via intrauterine insemination.

Hysteroscopic metroplasty remains the gold standard for septal resection, with evidence supporting its role in improving reproductive outcomes. A meta-analysis by Valle and Ekpo reported a significant increase in pregnancy rates post-hysteroscopic resection, with live birth rates improving from 6.1% to 80% in women with prior infertility.4 Similarly, Esmaeilzadeh S et al found that hysteroscopic metroplasty led to a substantial reduction in miscarriage rates and improved pregnancy outcomes in women with recurrent pregnancy loss.5 In our patient, hysteroscopic-guided resection successfully corrected the uterine anomaly, leading to a subsequent conception.

Cervical insufficiency is another concern in pregnancies following uterine septum resection. Some studies suggest that the surgical procedure may alter cervical integrity, necessitating cerclage placement in certain cases.6,7 In our case, cervical cerclage was indicated at 12+4 weeks due to a history of bleeding per vaginum in 1st trimester leading to threatened abortion, and was successfully performed using the MacDonald technique. Our patient had a history of hypothyroidism and subsequently developed thrombocytopenia at 32 weeks of gestation (platelet count: 78,000/μL), pregnancy-induced hypertension, and deranged liver function tests, complicating the pregnancy course.

A study was performed by Tranquilli10 where the correlation between uterine malformation and blood pressure in pregnancy was observed. The study included 16 normotensive, nonproteinuric, primigravida with congenital uterine malformations between the gestational age of 20 to 30 weeks. It was concluded that all pregnant women with congenital uterine malformations had higher blood pressure levels than normotensive women. They also concluded that elevated blood pressure can result from altered uterine circulation and reduced blood supply to placenta. As described in the study, our patient also developed pregnancy induced hypertension at 28 weeks of gestation. Pregnancy induced hypertension (PIH) is defined as hypertension that occurs in pregnancy for the first time after 20 weeks of gestation.

Pregnancy-induced thrombocytopenia occurs in 5–10% of pregnancies and typically resolves postpartum. However, severe thrombocytopenia (<100,000/μL) requires close monitoring due to the risk of hemorrhagic complications. Similarly, pregnancy-induced hypertension can significantly impact both maternal and fetal outcomes, necessitating vigilant antenatal care. Several studies report that pregnancy-associated thrombocytopenia often resolves postpartum without intervention.8,9 However, in our patient, persistent thrombocytopenia warranted regular platelet monitoring and hematologic evaluation. Pregnancy-induced hypertension, though initially well-controlled with antihypertensives, posed a risk of progression to preeclampsia. Additionally, the coexisting hematological abnormalities, liver function derangements, and history of hypothyroidism further emphasized the need for a multidisciplinary approach to optimize maternal and fetal outcomes. Successful conception and pregnancy maintenance following septal resection underline its efficacy in improving reproductive outcomes.

Conclusion

Hysteroscopic septal resection effectively improved fertility and pregnancy outcomes in our patient with a septate uterus. However it has been found that post septal resection, numerous complications could occur in pregnancy such as, threatened abortion, abruptio placenta, preterm delivery, placenta previa. In the above case we witnessed the conservative management of various complications in a singleton pregnancy including, pregnancy-induced hypertension, thrombocytopenia, and deranged liver function tests, along with a history of hypothyroidism and the importance of vigilant antenatal monitoring Per eclampsia is a multiogran disease which imposes significant risk to maternal and fetal life. In such a cases platelet count proves to be a good predictor of development of severe complications of pre eclampsia. This case highlights the importance of early diagnosis, timely intervention, and close surveillance for optimal maternal and fetal outcomes.

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