

# Laparoscopic Conservative Approach to Non Communicating Rudimentary Uterin Horn Pregnancy

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A 20 year old patient referred to our clinic with complaints of secondary amenorrhea and pain. In transvaginal ultrasonography, an embryo was observed with no cardiac activity at right adnexial area. In the laparoscopy, it was seemed like bicornuate uterus. In hysteroscopy, normal left cornu, where gestational sac was not present, was entered. For this reason, unruptured ectopic pregnancy was considered in right rudimentary horn. By laparoscopy, linear incision was carried out, pregnancy material was evacuated and incision repaired primarily. Two months later, it was observed that rudimentary horn was not communicated with uterine cavity by histerosalpingography. Then, metroplasty with laparotomy was carried out. Six months later patient had had a pregnancy and delivered by cesarean section while the fetus was at the 37<sup>th</sup> gestational week. If rudimentary horn has adequate size and active endometrial tissue, metroplasty operation could be performed instead of horn excision in selected patients.

**Key Words:** Unicornuate uterus, Rudimentary horn pregnancy, Metroplasty, Laparoscopy

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## Introduction

The incidence of congenital uterine anomalies is 0.5%.<sup>1</sup> Complete or partial septate uterus occurs most frequently, while unicornuate uterus occurs at the rate of 5-10%.<sup>2</sup> Unicornuate uterus results from the inadequate development of single side mullerian canal or its absence. The condition usually is associated with various degrees of rudimentary horn connected to the unicornuate uterus when one of the ducts develops only partially. The vast majority of unicornuate uteri have a contralateral rudimentary uterine horn of the noncommunicating type (between 74% - 86%).<sup>2</sup> Rudimentary horn pregnancy is a quite rare form of ectopic pregnancy. In most cases, ovum is fertilised as a result of transperitoneal migration of the sperm. Its incidence is 1 per 100000-140000 pregnancies and it occurs once every 5000-15000 ectopic pregnancies.<sup>3</sup>

Rudimentary horn usually manifests as a acute abdominal emergency from rupture, rarely proceeding to secondary ab-

dominal pregnancy and even more rarely proceeding to term with the delivery of a live baby. Preoperative diagnosis is possible only in 5% of the patients.

Pregnancy within a noncommunicating rudimentary horn has a 70% chance of rupture and carries a maternal mortality of approximately 0.5%.<sup>1</sup> Rupture frequently occurs at the middle of the second trimester.<sup>4</sup>

In the literature, treatment is usually stated to be excision. In this case, laparoscopic conservative approach to the rare occurrence of noncommunicating unruptured rudimentary horn pregnancy is evaluated.

## Case Report

A 20 -year- old, gravida: 3, parity: 2 (2 early second trimester preterm birth), alive: 0, patient referred to our clinic with complaints of secondary amenorrhea (last menstrual period approximately 11 weeks before the referral date) and pain in the right lower abdominal quadrant. Patient normally had regular menstruation periods lasting five days every 28 days. Both her family and past history were uneventful. In physical examination, blood pressure was 110/70 mmHg and other systems were within normal limits. In pelvic examination, cervix was closed and normal, no tenderness was present in cervical movements. In palpation, uterus was at normal size and tender mass was detected at right adnexial area.

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Ultrasonographic examination showed normal size uterus and endometrial thickness was 14 mm. Bilateral ovaries were normal. In right adnexial localisation, a gestational sac at the size of 58x55mm and an embryo without cardiac activity and with CRL=20 mm (8w5d) were observed. In laboratory examination, low hemoglobin values and slight leukocytosis was established (Hb:12.2, Hct:36.5, WBC:12900, PLT:217000, Beta HCG:>10000).

Laparoscopy was considered with the presumptive diagnosis of tubal ectopic pregnancy. In laparoscopy, it was seemed like bicornuate uterus. While left cornu was observed to be normal, the right one was hyperemic, tense and oedematous (figure 1). Both tuba and ovaries were normal and no blood was seen in Douglas pouch. Diagnostic hysteroscopy was planned. In hysteroscopy, normal left cornu, where gestational sac was not present, was entered. For this reason, unruptured ectopic pregnancy was considered in right rudimentary horn. In view of the lack of cardiac activity in the fetus, laparoscopy was resumed. Since we planned metroplasty for the patient, we preserved rudimentary horn. Linear incision was carried out at an area in right rudimentary horn where has got minimal vascularity. Pregnancy material was evacuated and incision repaired primarily. Procedure was finished following control of bleeding. After the 30 days later control, it was seen that beta-HCG values were reduced to zero. Pathology reported chorionic villus.

In this patient; vaginal, cervical anomalies and renal agenesis were not present and postoperative upper abdomen ultrasound and intravenous pyelogram were within normal range.

Transvaginal ultrasound examination and histerosalpingography were carried out two months later. In ultrasonography, left uterine cornu was observed to be 4x3 cm and right rudimentary horn at the size of 3x2 cm. (figure 2) Endometrium was observed in rudimentary horn (figure 3). In the histerosalpingography, it was observed that rudimentary horn was not communicated with uterine cavity.

The fact that our case had two second trimester preterm births demonstrates that left uterine unicorn is inadequate. As the size of rudimentary horn was comparable to unicorn uterus and rudimentary horn was located anatomically close to left unicorn uteri and had functional endometrium, a metroplasty operation was planned for second session. Metroplasty procedure was carried out by laparotomy. Two uterine cavities were combined. Two months later after surgery, diagnostic hysteroscopy was performed and it was observed that adequate uterin cavity was maintained. Six months later patient had had a pregnancy and delivered an alive, 2930 gr, girl baby by cesarean section at the 37<sup>th</sup> gestational week.



Figure 1: Laparoscopic appearance of the case



Figure 2: Ultrasound appearance of left unicornate right rudimentary horn



Figure 3: Endometrium appearance of rudimentary horn

## Discussion

Mullerian canal fusion defects frequently coexist with other genitourinary tract anomalies such as vaginal septum or renal agenesis and most commonly manifest themselves as gynecologic complaints such as dysmenhorrea, dyspareunia,

endometriosis and sterility. <sup>5</sup>In this case, there is no vaginal and renal anomaly and no such complaints.

The American Fertility Society established a standart form for classification of müllerian anomalies in 1988. The anomalies were divided into three:

- 1- Agenesis (Mayer Rokitansky Hauser syndrome).
- 2- Lateral fusion defects (septate uterus, arcuate uterus, unicornuate uterus, bicornuate uterus and didelphic uterus)
- 3- Vertical fusion defects.

In most cases of unicornuate uterus, the rudimentary horn is non-communicating. <sup>2,6</sup> Whenever uterine anomalies are suspected, differential diagnosis should include laparoscopy in addition to vaginal sonography, hysterosalpingography and hysteroscopy. A previous pregnancy does not rule out the possibility of uterine horn pregnancy like in our case. <sup>5</sup>

The first ruptured pregnancy in a rudimentary horn was presented by Mauriceau in 1669. Since then, more than 350 such cases have been reported. Rupture frequently occurs before third trimester and 80-90% at the middle of second trimester and approximately 10% will go to term with a 2% fetal salvage rate. After rupture, massive intraabdominal hemorrhagia, even maternal mortality may occur. <sup>4,7</sup>

In most of the cases, pregnancy in the rudimentary horn often terminates by missed abortion or intrauterine fetal death. Decreased blood supply, limited uterine distensibility and myometrial contractibility are the contributory factors. Live birth are rarely recorded. <sup>4</sup>

Once a potentially viable uterine horn gestation is recognized, cesarean section is the preferred mode of delivery because of the known weakness of the uterine horn musculature and the increased risk of uterine horn rupture that can result from myometrial contractions. <sup>8</sup>

Abdominal pain is a typical sign in all reported cases and it has mostly been found in the beginning of the first and second trimester. Although ultrasonography, hysterosalpingography, hysteroscopy and laparoscopy are used in diagnosis, it is quite difficult to diagnose unruptured rudimentary horn pregnancy preoperatively or even intraoperatively. Before ultrasonography became common, the diagnosis was made after rupture in 80-90% of rudimentary horn pregnancies and perioperative diagnosis was possible only in 5% of the patients. The reason why diagnosis is delayed in early pregnancy is there are no signs to distinguish this abnormal implantation from normal intrauterine pregnancy.

Laparotomy and laparoscopy are usually required for definitive diagnosis. In all such cases an intravenous pyelogram is indicated because of the high incidence of associated urinary system anomalies in the presence of genital tract anomalies.

Treatment is usually the excision of rudimentary horn.

However, instead of horn excision, metroplasty could be performed as the size of rudimentary horn was comparable to unicorn uterus, rudimentary horn was located anatomically close to unicorn uteri and endometrium was functional.

## Nonkomünikan Rudimenter Horn Gebeliğine Laparoskopik Konservatif Yaklaşım

20 yaşında kadın hasta sekonder amenore ve sağ alt kadranda ağrısı şikayetleri ile kliniğimize başvurdu. Transvajinal ultrasonografide, kalp atımı olmayan embriyo sağ adneksiyal bölgede gözlemlendi. Laparoskopide bikornu uterus görünümü mevcuttu. Histeroskopide sol kornuya girildi, burada gestasyonel kesenin olmadığı görüldü ve unikornu görünüm izlendi. Ektopik gebeliğin non-komünike sağ hornda olduğuna karar verildi. Laparoskopisi ile lineer insizyon uygulandı ve gebelik materyali boşaltılıp insizyon primer tamir edildi. Operasyondan iki ay sonra çekilen histerosalpingografide rudimenter hornun kaviteyle bağlantısı olmadığı görüldü ve hastaya laparotomi ile metroplasti yapıldı. Cerrahiden 2 ay sonra ofis histeroskopisi ile kavitenin yeterli olduğu görüldü. 6 ay sonra hasta gebe kaldı ve 37. haftada sezeryan ile doğurtuldu. Yeterli büyüklükte olan ve içinde aktif endometriyum dokusu bulunan rudimenter hornlarda ekzisyon yerine metroplasti operasyonu uygulanabilir.

**Anahtar Kelimeler:** Unikornu uterus, Rudimenter horn gebelik, Metroplasti, Laparoskopisi

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