

# Fortuitous Discovery of a 28-Week Pregnancy in a Unicorn Uterus: A Case Study and Literature Review

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#### Abstract

The occurrence of a pregnancy in case of uterine malformation is a potentially high risk obstetrical situation. We report the case of a pregnancy developed in a unicornuate uterus associated with a rudimentary non-communicating horn of 28 weeks of amenorrhea, with a history of uterine rupture during the previous pregnancy in a context of in-utero fetal death more a complete placenta previa. The uterine malformation of this patient was known and had been diagnosed incidentally during the cesarean section of the previous pregnancy (pregnancy which had then developed in the normal horn). This type of uterine malformation and the complications that may be associated with it are discussed as well as the principles allowing the prevention of these complications.

Keywords: Pregnancy; Unicornuate Uterus; Rudimentary Contralateral Uterus; Uterine Rupture; Obstetric Emergency

#### Introduction

A unicornuate uterus is caused by a developmental defect in one of Müller's two ducts. They are most often associated with hypoplastic horns when one of the two tubes is only partially developed [1]. This horn can be solid or contain a cavity, in other cases it can communicate with the uterus [1]. A unicornuate uterus with a rudimentary horn can lead to several complications, the most serious of which are placental abnormalities and ectopic pregnancy.

We report a case of pregnancy in a unicorn uterus at 28 weeks of amenorrhea.

## **Case Study**

#### **Patient and history**

**Patient information**: This is the case of Mrs. Malika, 20 years old, pregnant for the second time, primiparous, current pregnancy estimated at 28 weeks admitted for abdominal and pelvic pain. The only medical history for this patient is that of a female fetus weighing 2200g delivered by caesarean section in 2021. The fetus died in the womb. According to the operation report brought by the mother, a uterine rupture was found during the operation. During this caesarean, a normal-sized left hemi-uterus, in which the fetus had developed, and a hypoplastic right horn were diagnosed. The first pregnancy follow up was done in a different facility than ours and resulted in an emergency caesarean section after 32 weeks with a rupture of the left hemi-uterus, as documented in the operative report. This "half-

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uterus" was not removed, but repaired on two planes by different points. A year later, the patient presented to the emergency room at 28 SA. This new pregnancy was neither monitored nor announced, but the patient had a previous report of cesarean section. The gradual onset of abdominal pain was diffuse and of moderate intensity.

**Clinical outcome**: The patient was hemodynamically stable, but clinical examination revealed helpless abdominal pain with on obstetrical examination: fundal height consistent with gestational age, positive fetal active movement while deceleration depth was noted on fetal heart rate recordings, and vaginal examination revealed a protrusion of the bag of waters into the vagina; the rest of the somatic examination was unremarkable.

**Diagnostic approach**: The ultrasound objectified an evolving intrauterine pregnancy in relation to the gestational age of 28 weeks, a placenta not low lying, amniotic fluid of reduced quantity without malformation visible on the ultrasound with satisfactory biometrics.

**Therapeutic intervention and follow-up**: Faced with this picture, an exploratory laparotomy was performed urgently. This revealed a scar dehiscence containing a fetus that was extracted after a segmental hysterotomy. He was alive and was immediately entrusted to a neonatologist a few minutes after his birth. Abdominal exploration confirmed the diagnosis of unicornuate uterus associated with the right residual uterus was intact. Since the right uterine horn inserts into the base of the left uterine horn and does not communicate, the most likely diagnosis of this uterine abnormality is a pseudounicorn uterus (left) with a rudimentary horn (right) communicating with the uterine cavity, rather than a bicornuate uterus. We spared the right uterine horn (Figure 1) and sutured the left uterine horn (Figure 2) separately in two planes, followed by successful closure of the other planes.



Figure 1: Unicornuate uterus with rudimentary horn.

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Figure 2: Unicornuate uterus with rudimentary horn.

The postoperative follow-up was without complication.

Pathology result: Histological examination revealed no placental abnormality.

#### Discussion

The pseudounicorn uterus is due to the stoppage of one of Muller's two ducts before reaching the urogenital sinus: the aplastic side thus produces a hypoplastic uterine horn, tubular or not, depending on the importance of the hypoplasia. A right rudimentary angle has been reported as dominant, perhaps due to the more caudal extension of the left Muller's canal than the right [2]. The incidence of unicornuate false uterus is approximately 1 in 1,000 [1]. In 36% of cases, the rudimentary horns contained a uterine cavity, and only in about a third of cases (as we observed) [3,4] tunneling occurred. This cavity rarely has a functional endometrium and is at risk for placental abnormalities [5,6]. The incidence of rudimentary corneal pregnancy is approximately 1 in 100,000 [7]. Risk of rupture during use due to its limited elasticity.

The conception rate of the rudimentary horn is about 1/100,000 [7]. Due to the limited elasticity of the latter, there is a high risk of rupture during pregnancy. The event is usually detected on imaging by severe abdominal pain associated with intraperitoneal fluid, leading to emergency surgery. Most authors then recommend excision of the rudimentary horn, or even removal of the fallopian tubes, exposing them to the risk of tubal pregnancy [6]. In our case, we chose to keep the right rudimentary horn given the emergency situation, while considering the risk of early uterine rupture, we intended to resect it later, which may call into question the important prognosis of the patient and lead to the death of the fetus, premature infants [2]. Differential diagnosis in the exploratory laparotomy of a false horn uterus. As evidenced by our observation, the differential diagnosis of rudimentary horn, pseudounicorn uterus (type IIa or IIb of the AFS classification) and bicornuate uterus (IVb and especially IVa of the AFS classification) at exploratory laparotomy [3] remains difficult. This difficulty is accentuated by the fact that, in certain cases reported in the literature, there are approximations which do not allow the two malformations to be precisely distinguished [1,5,8]. Their distinction is more difficult because the remaining uterine horns

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are gestational and therefore at least comparable in size to the main uterine horns. However, the obstetrical prognosis of subsequent pregnancies with "half-uterine" uterine rupture can be as catastrophic as with a rudimentary uterine rupture of the horn [9], an accurate diagnosis in an emergency is not a priority because it should not modify the surgical management in our opinion. Whatever the uterine malformation, the treatment must remain the same, namely resection of the uterine horn or "hemi-uterus" and of the ipsilateral fallopian tube. However, in cases where we are not able to perform such treatment in the acute phase, it seems reasonable to perform it remotely during scheduled interventions. Some authors have even suggested that if a pseudounicorn uterus with rudimentary horns is found outside of any gestation period, this procedure can be performed without waiting for an obstetric accident [10-12]. Future pregnancies will require very close monitoring and patients should be informed of the risks involved. The patient must have reports of her various complementary investigations (surgical reports, imaging reports) so that she can communicate them to her obstetrician at the start of a future pregnancy. Obstetricians caring for these patients should be aware of the serious risk of uterine rupture during pregnancy. In this case, the typical symptoms of premature uterine contractions should never be underestimated. Regarding the mode of delivery, a caesarean section is strongly recommended before any full-term delivery.

#### Conclusion

The discovery of a pseudouterine uterine malformation in patients of childbearing age is at high risk in gynecology (haematometra, infertility, endometriosis, severe dysmenorrhea) and in obstetrics (spontaneous abortion, gestational hypertension, preeclampsia, IUGR, placenta accreta, ruptured uterus). In this case, it seems reasonable to systematically propose a rudimentary prophylactic hemihysterectomy by removing the ipsilateral fallopian tube.

#### **Conflicts of Interest**

The authors declare no conflict of interest.

#### **Author Contributions**

All authors contributed to the conduct of this work. All authors also declare that they have read and approved the final version of the manuscript.

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