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Navigating the Rare:
Rudimentary Uterine Horn Pregnancy

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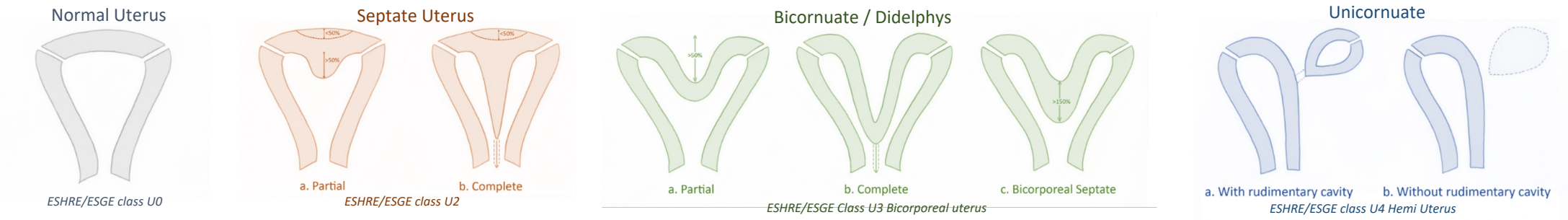
Congenital Uterine Anomalies

Congenital uterine anomalies, which occur in approximately 5% of women, result from abnormal development and fusion of the Müllerian ducts during embryogenesis.[1] There is a wide range of congenital uterine abnormalities, including the arcuate, septate, bicornuate, didelphys and unicornuate uteri. While these anomalies are often incidental findings, in obstetrics they may present with infertility, recurrent pregnancy loss or preterm birth. In a population of women with a history of infertility and miscarriage, the incidence of uterine abnormalities was found to be almost one in four.[1]

Despite this, the limited literature and variability across available studies complicate our understanding of their reproductive impact. Managing pregnancies in these cases can be highly challenging given the heterogeneity in the literature, primarily regarding classification systems, as well as limited evidence guiding management options. This is especially true for particularly rare cases, such as pregnancy in the rudimentary horn of a unicornuate uterus.



ESHRE/ESGE class U0

ESHRE/ESGE class U2

ESHRE/ESGE Class U3 Bicorporeal uterus

ESHRE/ESGE class U4 Hemi Uterus

Failure during Müllerian duct organogenesis, unilaterally, leads to a unicornuate uterus. Defects of fusion or unification of the Müllerian duct, lead to bicornuate or didelphys uterus. Defects in septal resorption or canalisation lead to septate or arcuate uterus.[2]

The above diagram is modified from the classification system by the European Society of Human Reproduction and Embryology and the European Society for Gynaecological Endoscopy (ESHRE/ESGE). It aims to compare newer definitions with more traditional terminology.[3]

Rudimentary Horn Pregnancies

A unicornuate uterus occurs in 0.1% of women and is accompanied by a rudimentary horn in the majority of cases.[1] Rudimentary horns may contain functional endometrial tissue and may communicate with the contralateral uterus. A rudimentary horn pregnancy is one of the rarest and most complex forms of ectopic. Interestingly, most rudimentary horn pregnancies occur in a non-communicating horn. The hypothesised mechanism is intrabdominal migration of spermatozoon or fertilised ovum from the contralateral fallopian tube via the ipsilateral tube into the rudimentary horn.[4] Such pregnancies carry a high risk of complications, including uterine rupture with life-threatening hemoperitoneum. They are also associated with a higher incidence of placenta accreta spectrum.

Whilst there remains limited literature regarding these cases, available reports indicate cases are predominantly diagnosed at time of rupture. Even when diagnosed pre-ruptured, these cases are typically managed with laparotomy.[4] A review of 366 rudimentary horn pregnancies, reported sensitivity for diagnosis on ultrasound was as low as 26%, meaning diagnosis occurred before symptoms in only 14% of cases. The rarity of rudimentary horn pregnancy, combined with the absence of a distinct clinical presentation and the reduced sensitivity of sonography as pregnancy progresses, poses significant diagnostic challenges.[5]

Early recognition can enable minimally invasive management, which may offer superior outcomes in well-resourced settings. Tertiary ultrasound and MRI are crucial in confirming the presence of rudimentary horns, the communicating versus non-communicating nature of the horn with the unicornuate uterus, and, in the context of pregnancy, myometrial thinning and risk of imminent rupture. Although rudimentary horn pregnancy is rare, clinicians must be aware of its unique pathology to maintain an index of suspicion, especially in patients with known uterine anomalies. Timely intervention, including referral to tertiary centres for advanced imaging and management are crucial for optimising maternal and reproductive outcomes.

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4. Siwatch S, Mehra R, Pandher DK, Huria A. Rudimentary horn pregnancy: a 10-year experience and review of literature. Arch Gynecol Obstet. 2013;287(4):687–95.
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