Spontaneous Conception of Heterotopic Pregnancy, Detected on Routine First Trimester Ultrasound

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Key message: An intrauterine pregnancy does not exclude a concurrent ectopic pregnancy—always assess the adnexa.

Case Description

A G5P2 woman with two previous miscarriages underwent a routine dating ultrasound after presenting to her general practitioner with nausea and vomiting consistent with symptoms experienced in previous pregnancies. Her last menstrual period was uncertain, with gestation estimated at approximately five to six weeks. The pregnancy was conceived spontaneously and was unplanned.

The initial private sonographer systematically assessed the adnexa and identified a suspected heterotopic pregnancy. Radiology contacted the GP, who reviewed the patient later that day. She was clinically stable and reported no vaginal bleeding or significant abdominal pain, although subsequent emergency department documentation recorded intermittent mild cramps during the preceding week. She was referred urgently to hospital for specialist assessment.

She had no significant documented medical history, previous ectopic pregnancy, infertility, assisted reproductive treatment, endometriosis, pelvic surgery or diagnosed pelvic inflammatory disease. She took no regular medications, including hormonal contraception. Her only potential risk factor for tubal pathology was treated chlamydia and gonorrhoea in 2024.

Because the private report was not immediately available, transvaginal ultrasound was repeated at hospital. This confirmed a live intrauterine pregnancy with crown–rump length 4.7 mm, fetal cardiac activity and yolk sac, together with a second left adnexal gestational sac measuring 6.6 mm containing a yolk sac. Both ovaries were normal and no free fluid was seen. She remained clinically well, with β-hCG 20,887 IU/L, haemoglobin 144 g/L and mild abdominal tenderness without peritonism.

After counselling, she confirmed that she did not wish to continue the intrauterine pregnancy and elected surgical management. Laparoscopy the following day showed a left tubal ectopic pregnancy with small-volume haemoperitoneum. Left salpingectomy and concurrent surgical termination were performed. Histopathology confirmed products of conception in both specimens. Recovery was uncomplicated and she was discharged later that day.

Ultrasound Images

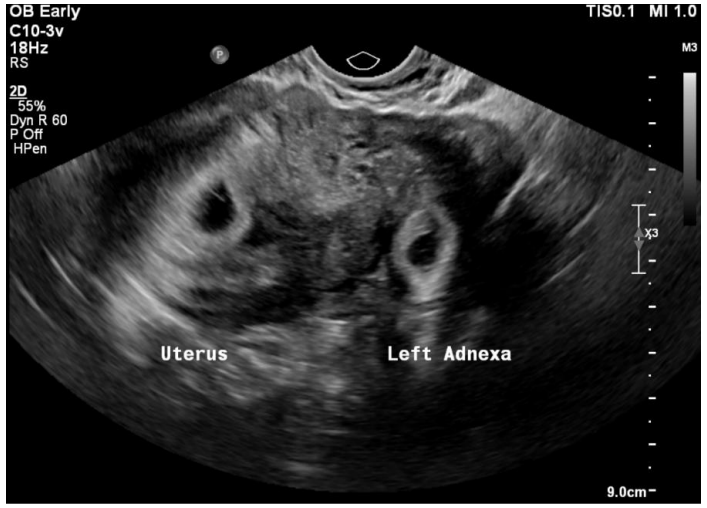

Image 1. Transvaginal ultrasound image demonstrating concurrent intrauterine pregnancy and left adnexal ectopic pregnancy

Discussion

Heterotopic pregnancy describes the coexistence of intrauterine and extrauterine gestations. It is rare following spontaneous conception, historically estimated at approximately 1 in 30,000 pregnancies, but occurs more frequently following assisted reproductive treatment [1–4]. Diagnosis is challenging because visualisation of an intrauterine pregnancy may create false reassurance and reduce consideration of a concurrent ectopic pregnancy [3,6].

Clinical presentation is variable. Up to half of affected women may initially be asymptomatic, while others present with abdominal pain, vaginal bleeding, peritonism or haemodynamic compromise after tubal rupture [3]. Serum β-hCG cannot reliably distinguish heterotopic pregnancy because the intrauterine pregnancy contributes to the overall concentration [1,3,6]. Diagnosis therefore depends principally on careful transvaginal ultrasound examination.

The Australian Society for Ultrasound in Medicine recommends systematic assessment of both adnexa during first-trimester ultrasound, including after an intrauterine pregnancy has already been demonstrated [7]. The private sonographer in this case followed that recommendation and identified a separate left adnexal gestation before significant pain, rupture or haemodynamic compromise. This guideline-concordant practice enabled urgent referral, informed counselling and planned definitive treatment, potentially preventing life-threatening intra-abdominal haemorrhage.

Responsibility for this safeguard does not rest with sonographers alone. Clinicians requesting, interpreting or reviewing first-trimester ultrasound should confirm that the adnexa have been adequately imaged and that any adnexal findings are addressed, rather than treating the presence of an intrauterine pregnancy as the end of the examination. This case reinforces the value of both high-quality sonographic practice and active clinical review.

References: 1. Li et al., 2016 2. DeVoe & Pratt, 1948 3. Elsayed et al., 2023 4. Nabi et al., 2019 5. Ankum et al., 1996 6. Talbot et al., 2011 7. ASUM, 2021