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Case Report

Pre-operative ultrasound diagnosis and laparoscopic management of live unilateral twin tubal ectopic pregnancy: a case report

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ABSTRACT

Live unilateral twin tubal ectopic pregnancy is an uncommon form of ectopic pregnancy and may be difficult to recognise before surgery. We report two women, both aged 31 years, with live unruptured left tubal twin ectopic pregnancies diagnosed on transvaginal ultrasound (TVS). Both were haemodynamically stable and presented with mild pain and vaginal spotting. TVS showed a left adnexal gestational sac separate from the ovary containing two embryos with cardiac activity. One woman had a previous interstitial ectopic pregnancy, while the other was a primigravida with no recognised risk factors for ectopic pregnancy. After counselling regarding management options, both women chose surgical treatment and underwent urgent laparoscopic left salpingectomy. Histopathology confirmed tubal pregnancy in both cases. These cases illustrate that twin tubal ectopic pregnancy can occur with or without recognised risk factors. Careful TVS assessment can establish the diagnosis before rupture and facilitate timely laparoscopic management.

Keywords: Twin ectopic pregnancy, Tubal ectopic pregnancy, Transvaginal ultrasound, Laparoscopy, Salpingectomy

INTRODUCTION

Ectopic pregnancy remains an important cause of maternal morbidity and mortality in early pregnancy, occurring in approximately 11 per 1000 pregnancies in the United Kingdom.¹ Most ectopic pregnancies are tubal, whereas unilateral twin tubal ectopic pregnancy is exceptionally uncommon. Published incidence estimates range from approximately 1 in 20,000 to 1 in 250,000 pregnancies, with 1 in 125,000 frequently cited.^{2,3}

Recognised risk factors for tubal ectopic pregnancy include previous pelvic inflammatory disease, smoking, assisted reproductive treatment, previous tubal surgery and a previous ectopic pregnancy.¹ Earlier reports of twin tubal ectopic pregnancy often described diagnosis at emergency surgery following rupture. With modern high-resolution TVS, however, a viable twin tubal gestation can occasionally be identified before rupture.⁴

We report two live unilateral left tubal twin ectopic pregnancies that were diagnosed on TVS before surgery and treated laparoscopically while unruptured. The two patients had different risk profiles, allowing comparison of the clinical and sonographic features that supported early diagnosis.

CASE REPORTS

Case 1

A 31-year-old woman (gravida 3) with a previous medically managed miscarriage and a medically managed left interstitial ectopic pregnancy in June 2025 self-referred to the Early Pregnancy Assessment Unit for assessment in early pregnancy. She described mild vaginal spotting and lower abdominal cramping. She remained haemodynamically stable. Examination demonstrated mild suprapubic and left lower-quadrant tenderness without guarding or rebound. Haemoglobin was 155 g/L

and the white cell count was $10.12 \times 10^9/L$; renal and liver function tests were normal. Chlamydia and gonorrhoea PCR tests were negative.

TVS demonstrated a 33×26 mm thick-walled left adnexal mass clearly separate from the left ovary. Within the ectopic gestational sac, two yolk sacs and two fetal poles were seen, each with cardiac activity. The crown-rump lengths were 4.5 mm and 5.7 mm, corresponding to approximately 6 weeks of gestation (Figures 1 and 2).



Figure 1: TVS of patient 1 showing a live embryonic pole within the left adnexal ectopic gestation; crown-rump length 5.7 mm.



Figure 2: TVS of patient 1 showing the second live embryonic pole within the left adnexal ectopic gestation; crown-rump length 4.5 mm.

Following multidisciplinary discussion, the patient was counselled about expectant, medical and surgical options. The limited evidence for medical management of a live twin tubal ectopic pregnancy was explained. In particular, the presence of two embryos with cardiac activity and a serum β -hCG concentration above 9000 IU/L were discussed as factors likely to reduce the chance of successful methotrexate treatment. The possibility of treatment failure and subsequent emergency surgery was also discussed. After shared decision-making, she opted for urgent laparoscopy. Before transfer to theatre, repeat blood tests showed a white cell count of $18.79 \times 10^9/L$ and neutrophils of $16.76 \times 10^9/L$. Laparoscopy confirmed the left tubal ectopic pregnancy, and salpingectomy was completed without any complication. Histopathology

demonstrated chorionic villi and an active trophoblastic implantation site within the fallopian tube. Her postoperative recovery was uncomplicated.

Case 2

A 31-year-old primigravida conceived spontaneously after 12 months of trying to conceive. She had no previous surgery, took no regular medication and had no recognised risk factors for ectopic pregnancy. Her last menstrual period was approximately 4 weeks earlier. She was initially asymptomatic, with a serum β -hCG concentration above 6000 IU/L, and an early pregnancy scan was arranged. Forty-eight hours later she re-presented with mild lower back and left-sided pelvic pain; serum β -hCG had risen to 10,484.7 IU/L.

She was haemodynamically stable, with localised left adnexal tenderness on examination. Full blood count was normal and vaginal swabs were normal.

TVS demonstrated a left adnexal gestational mass measuring approximately 19×23×15 mm. Two embryos with separate cardiac activity were identified within the extrauterine gestational structure (Figures 3 and 4). Recorded crown-rump lengths were 10.1 mm and 12.5 mm. The mean gestational sac diameter was 19.1 mm (Figure 5). The contralateral right ovary was normal and there was no free fluid or haemoperitoneum in the pouch of Douglas (Figure 6).

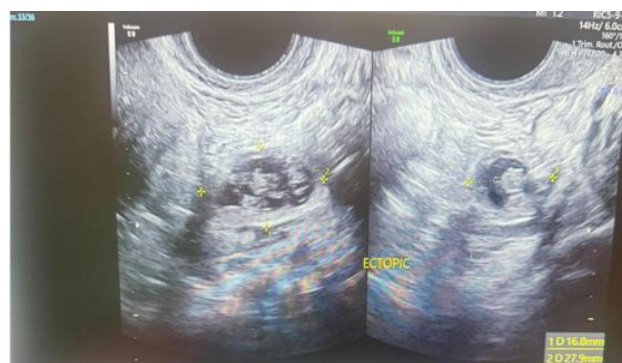


Figure 3: TVS of patient 2 showing the left adnexal ectopic gestational mass.



Figure 4: TVS of patient 2 demonstrating two fetal poles within the ectopic gestation, with crown-rump lengths of 10.1 mm and 12.5 mm.

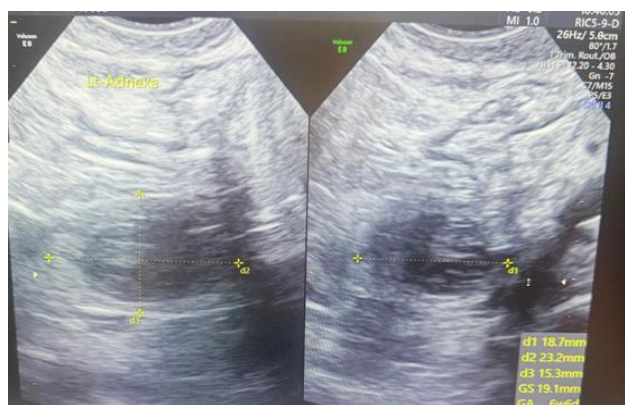


Figure 5: TVS of patient 2 showing measurements of the left adnexal ectopic gestational mass (18.7×23.2×15.3 mm; mean gestational sac diameter 19.1 mm).

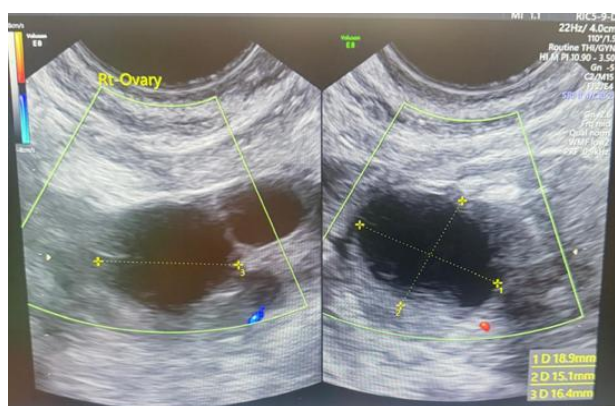


Figure 6: TVS of patient 2 showing the contralateral right ovary.

Because two live embryos were present and the serum β -hCG concentration was sub optimally rising, medical management was considered less suitable. After counselling regarding the available options, the patient chose surgery and underwent uncomplicated laparoscopic left salpingectomy. Histopathology confirmed a left tubal pregnancy with chorionic villi and no evidence of abnormal gestational trophoblastic proliferation. Recovery was uncomplicated apart from mild postoperative shoulder-tip pain. She was advised to perform a urine pregnancy test after three weeks.

DISCUSSION

Live unilateral twin tubal ectopic pregnancy is rare, and the available evidence consists mainly of individual case reports and literature reviews. The wide range of published incidence estimates reflects the small number of reported cases.^{2,3} Detailed reports with a clear pre-operative ultrasound diagnosis and subsequent histopathological confirmation therefore remain clinically useful.

The two patients had similar sonographic findings but different clinical backgrounds. Both were 31 years old and

had live, unruptured left tubal twin ectopic pregnancies identified before surgery. The first patient had a previous interstitial ectopic pregnancy, whereas the second was a primigravida without recognised risk factors. The second case is a reminder that the absence of risk factors does not exclude ectopic pregnancy.¹

High-resolution TVS is central to early diagnosis. In both patients, demonstration of an adnexal gestational sac separate from the ovary, together with two embryos showing cardiac activity, allowed the diagnosis to be made before rupture. Similar pre-operative diagnoses have been described in previous reports.^{4,5} Methotrexate has been used in selected twin ectopic pregnancies, but embryonic cardiac activity and the relatively high β -hCG concentrations in these patients made surgery the more appropriate option after individualised counselling.⁷

Current UK guidance does not provide a separate pathway for multifetal ectopic pregnancy.^{1,6} Management therefore follows the principles used for tubal ectopic pregnancy while taking account of symptoms, haemodynamic status, ultrasound findings, serum β -hCG concentration and patient preference. When surgery is required, laparoscopy is preferred where feasible, and salpingectomy is generally offered when the contralateral tube is healthy.⁶ Both patients in this report were treated definitively by laparoscopic salpingectomy before rupture.

CONCLUSION

Live unilateral twin tubal ectopic pregnancy is rare but potentially life-threatening. These two cases demonstrate that it may occur in women with a previous ectopic pregnancy as well as in those without recognised risk factors. Careful TVS examination can identify the extrauterine twin gestation before rupture, allowing timely counselling and treatment. In both patients, laparoscopic salpingectomy provided definitive management with uncomplicated recovery.

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