

# Heterotopic Pregnancy Following IVF: A Case Report

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## Background

- A heterotopic pregnancy (HP) is the simultaneous occurrence of an intrauterine and extrauterine pregnancy.<sup>1</sup>
- The most location of the extrauterine pregnancy is the fallopian tube.
- The estimated incidence of a spontaneous HP is 1 in 30,000. However, it may be as high as 1 in 100 following assisted reproductive technologies (ART) such as in vitro fertilisation (IVF).<sup>2</sup>
- Established risk factors for HP include ART, ovulation induction, pelvic inflammatory disease, tubal infertility and tubal ligation, previous ectopic pregnancy and previous surgery for endometriosis or myomectomy.<sup>3</sup>

## Case

- A 33 year old G7P1 woman presented to the Emergency Department with left sided abdominal pain and PV spotting.
- She was 5+1 weeks gestation following a frozen embryo transfer of a single blastocyst after ovulation induction and an hCG trigger.
- Following the embryo transfer, she had had unprotected intercourse.
- She had had four early miscarriages (1 D&C, 3 spontaneous), one medical termination of pregnancy, and one live birth (LSCS for breech presentation).
- She had hypothyroidism for which she takes 100microg levothyroxine daily.
- No history STIs, endometriosis or known gynaecological pathologies.
- On exam, she was haemodynamically stable and afebrile. She had a soft abdomen with left iliac fossa tenderness and percussion tenderness. She declined a PV exam.
- Blood results:
  - $\beta$ -hCG 14,325 IU
  - Hb 133 g/L
  - Rhesus positive

## Ultrasound findings

- Complex, heterogeneous debris in the left Fallopian tube, likely to represent haematosalpinx.
- There is 14mL free fluid in the pouch of Douglas containing echogenic debris, in keeping with haemoperitoneum, consistent with a ruptured ectopic pregnancy (Figure 1).

There is an intrauterine gestational sac measuring approximately 1mL in volume containing a yolk sac which measures 3mm. The embryonic CRL is 2mm. Cardiac motion detected.

Conclusion: Appearance are consistent with a left-sided ruptured ectopic pregnancy and an intrauterine pregnancy with a corpus luteum in each ovary.

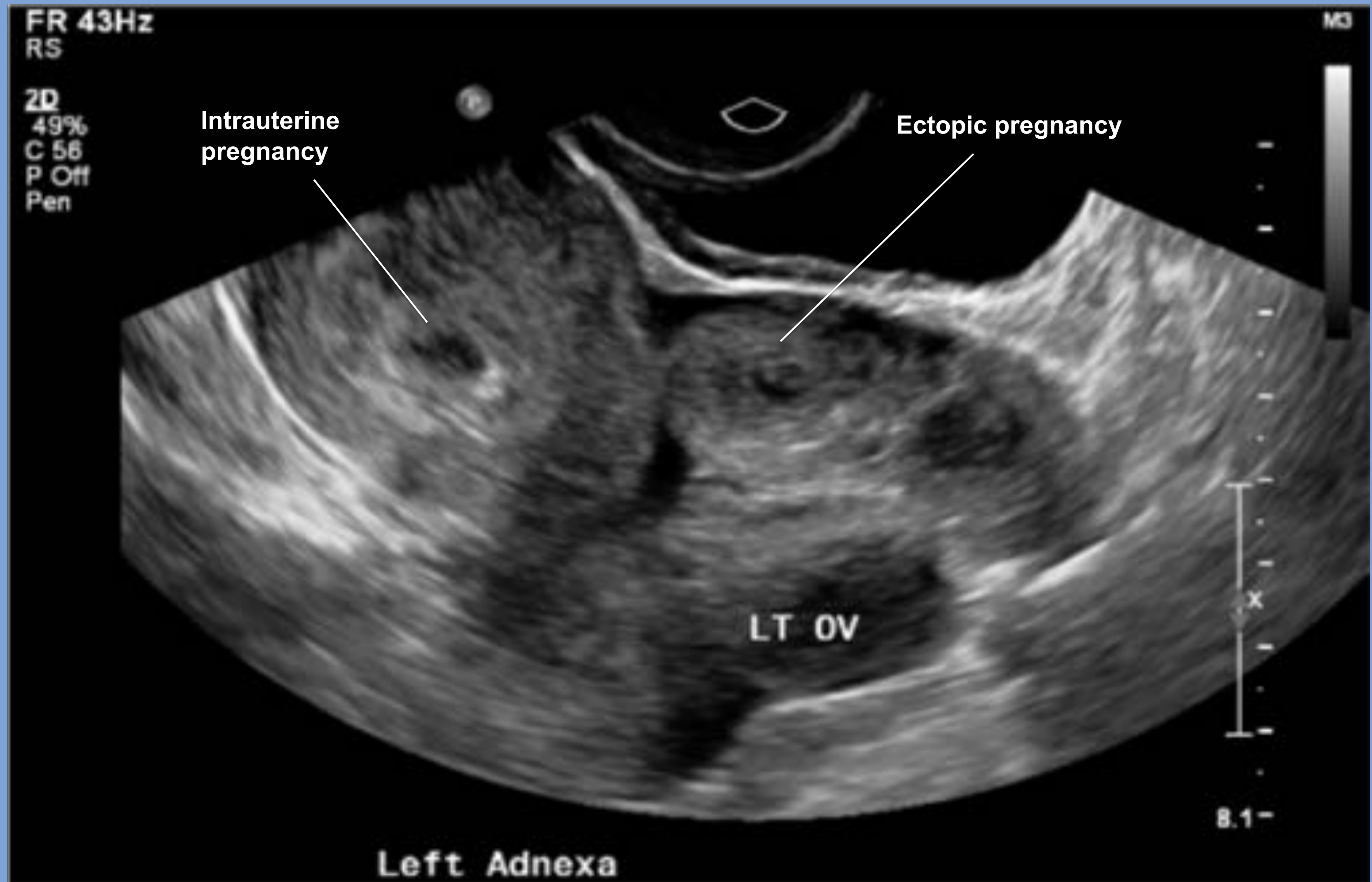


Figure 1. Ultrasound demonstrating left-sided ectopic pregnancy and intrauterine gestational sac

## Operative findings

- She proceeded to an emergency diagnostic laparoscopy + left salpingectomy (Figure 2).
- Findings:
  - 300mL haemoperitoneum
  - Left tubal ectopic pregnancy
  - Normal right Fallopian tube
  - Normal ovaries bilaterally
  - High bladder adhesion to anterior uterus (from previous Caesarean section)
  - Omental adhesion in midline to pelvic sidewall



Figure 2. Laparoscopic appearance of left-sided ectopic pregnancy (above) and following removal of ectopic pregnancy (below).

## Follow up

- The patient was discharged day 1 post operatively following well controlled pain and a successful trial of void. She continued on PV progesterone 400mg BD.
- She was reviewed in the gynaecology clinic 2 weeks later with a follow up ultrasound (Figure 3), demonstrating an embryo with CRL of 10mm (equivalent to 7+1 weeks gestation). Embryonic heart motion present with FHR 137bpm. Normal ovaries seen and no free fluid in the pelvis.

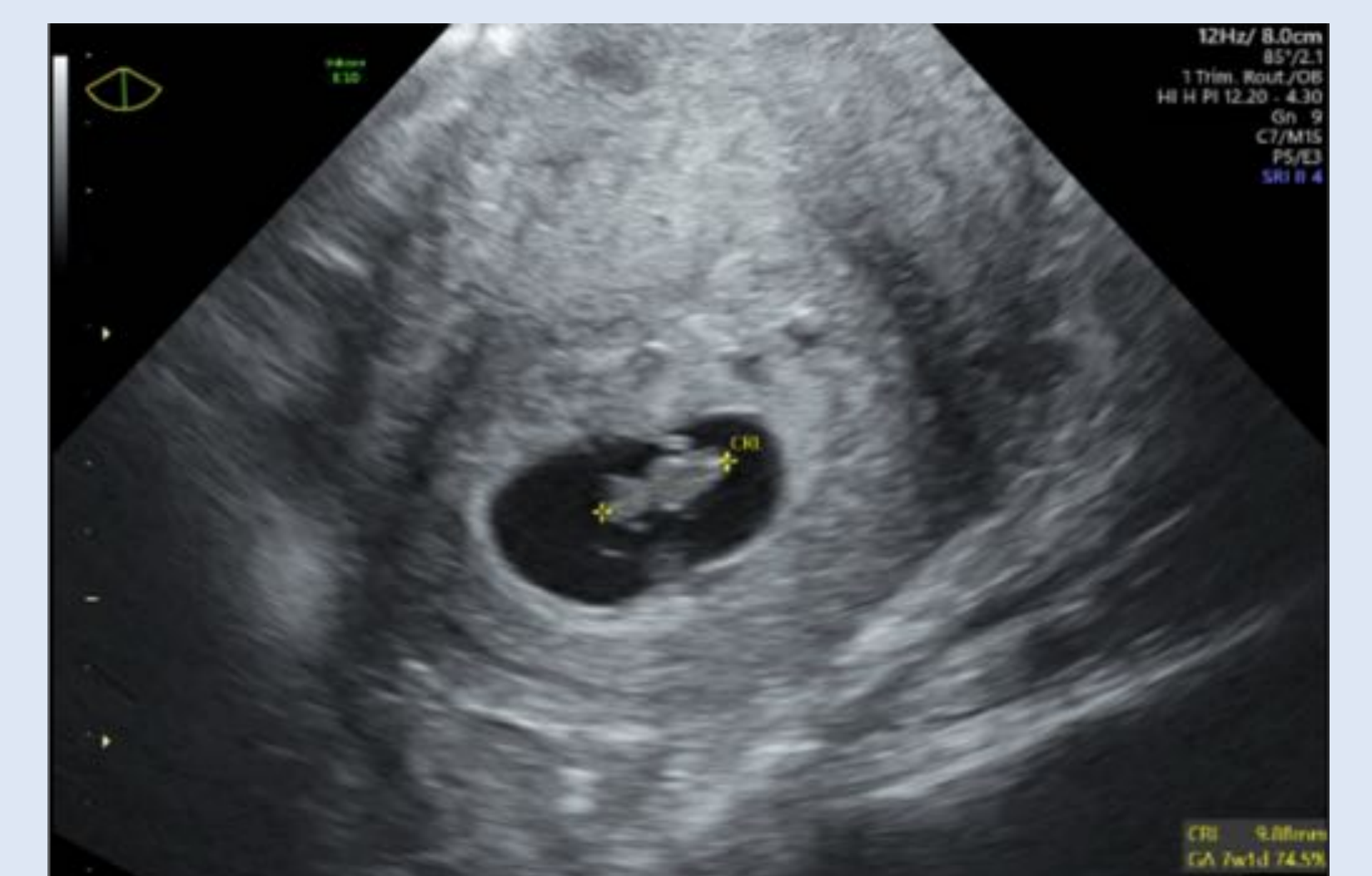


Figure 3. Embryo with crown-rump length of 10mm, equivalent to gestational age of 7 weeks and 1 day.

## Discussion & Conclusion

- Heterotopic pregnancies are a rare but life-threatening condition.
- Although they can occur in the absence of any risk factors, risk factors such as IVF should heighten one's clinical suspicion to the possibility of a HP.
- A  $\beta$ -hCG higher than expected for a gestational age may be suggestive of a HP.
- Clinical and sonographic findings consistent with an ectopic pregnancy does not negate the need to look for an intrauterine pregnancy.

## References

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