

Case Presentation: Spontaneous Heterotopic Pregnancy – Dilemma in Early Diagnosis

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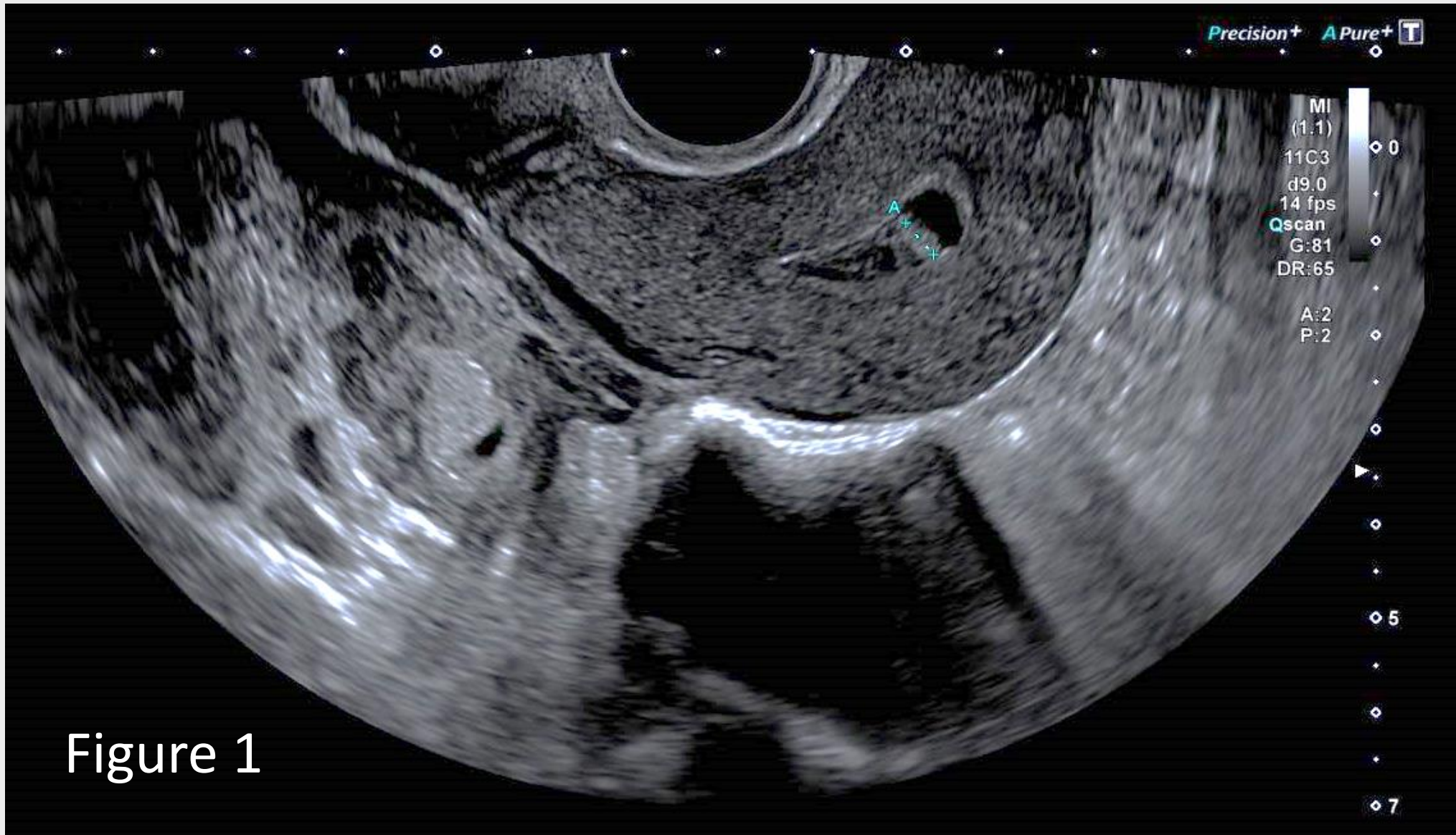
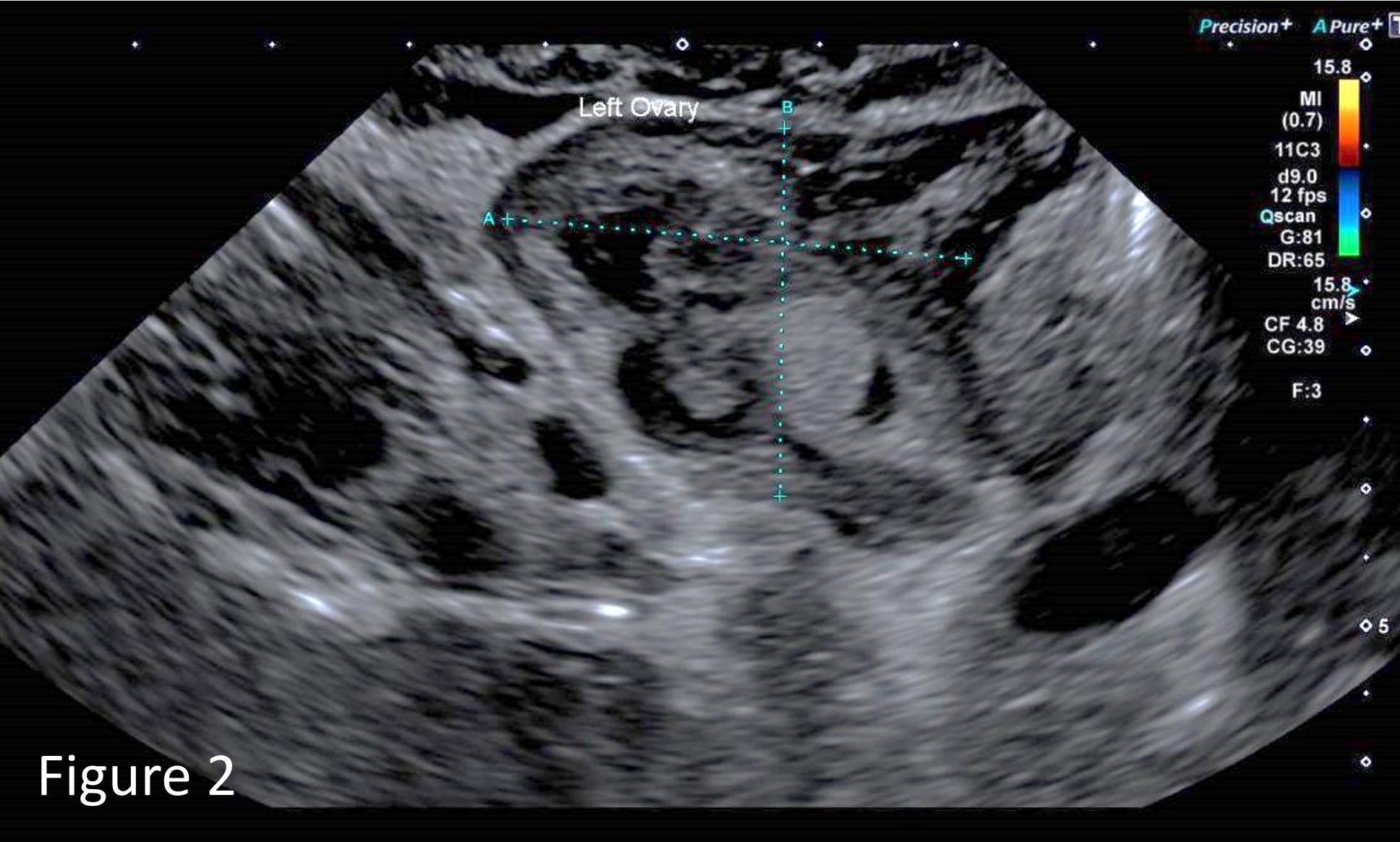
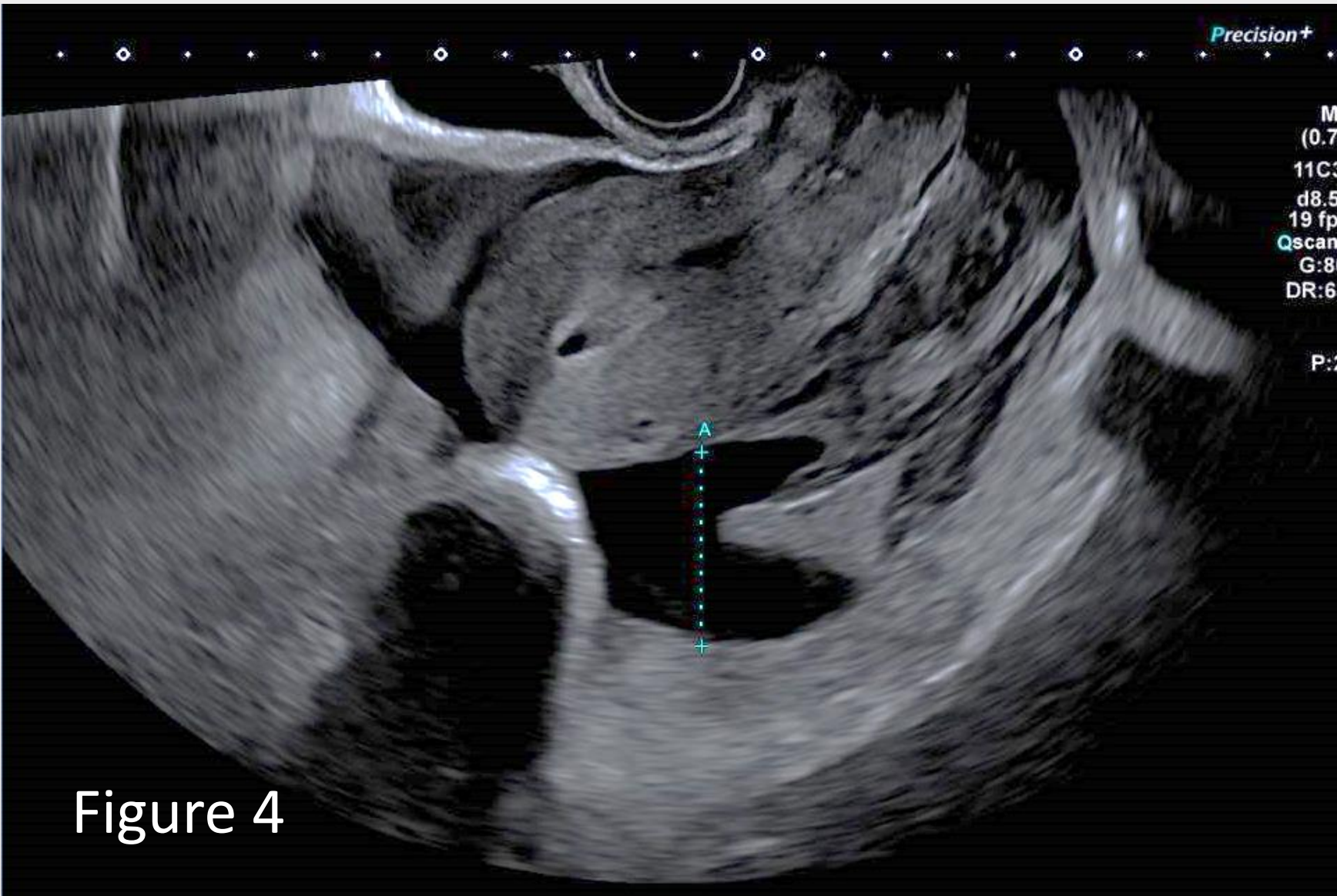
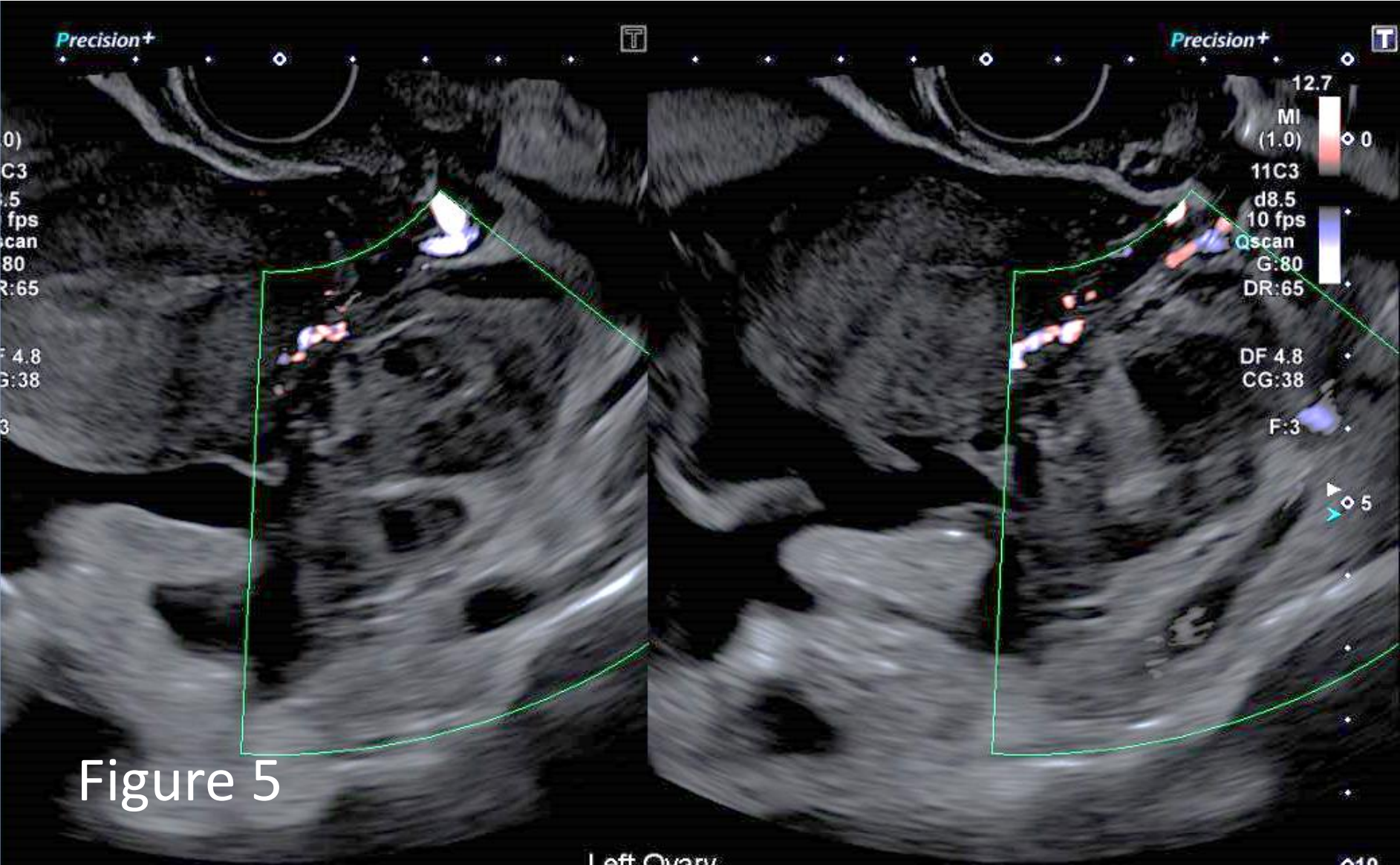
INTRODUCTION

Heterotopic pregnancy where simultaneous pregnancies occur at two different implantation sites is a rare clinical entity, occurring in about 1 in 30,000 cases following spontaneous conception. Its prevalence is increased to 1 in 3,900 in patients undergoing assisted reproductive technology (ART).

Diagnosing heterotopic pregnancy has always been challenging. This case describes the journey of a patient whose pregnancy was complicated by a heterotopic implantation.

CASE PRESENTATION

- A 22-year-old, G4P2, first presented to the emergency department with a history of vaginal bleeding and left lower abdominal pain with radiation to her back and shoulder. Her pregnancy test was positive but she was unsure of her LMP due to the irregularity of her periods since surgical termination of pregnancy 8 months previously. She had 2 previous normal vaginal deliveries.
- Her observations and blood results were stable, she was tender in the left iliac fossa with some guarding. The initial serum B-HCG was 2,030.
- Transvaginal ultrasound scan (TVUSS) performed on admission showed an early fetal pole with crown rump length (CRL) 4.5mm, and a mixed echogenicity mass was visualised on the left ovary, with no free fluid present (Figures 1 and 2).



Date	BHCG	Date	BHCG
Day 1	2,030	Day 25	3,185
Day 3	3,297	Day 27	2,649
Day 5	2,404	Day 29	1,138

- Together with the results of serial B-HCGs, an initial diagnosis of a failing intrauterine pregnancy (IUP) was made and as the patient was clinically well, she was discharged from the hospital with a follow-up appointment.
- A repeat TVUSS a week later showed a 7 week IUP with CRL 9.3mm but no fetal heart pulsations (Figure 3). The report again commented on a well circumscribed area of mixed echogenicity measuring 27 x 23 x 21mm adjacent to the left ovary. Medical management of miscarriage with misoprostol was offered in light of the scan findings.
- Unfortunately, the patient returned 2 weeks later with worsening abdominal pain and bleeding. Blood tests revealed a haemoglobin of 92 and B-HCG of 3,185. USS showed an empty uterus (Figure 4), and a 94 x 54 x 63mm irregular mixed echogenic mass near the left ovary surrounded by free fluid ? Haemorrhagic (Figure 5).

The findings were suggestive of an ectopic pregnancy and the patient underwent laparoscopic surgery, which confirmed a ruptured left-sided tubal pregnancy with a moderate amount of haemoperitoneum. A total left salpingectomy was performed, and the histology of the specimen confirmed the presence of chorionic villi. The post-operative period was uneventful, and the patient was discharged home a day later. B-HCG fell to the non-pregnant range within 2 weeks from surgery.

DISCUSSION/CONCLUSION

This case highlights the complexities and challenges of diagnosing heterotopic pregnancy, especially in the presence of conflicting clinical features and laboratory findings. Heterotopic pregnancy mainly occurs in the first trimester, with 74% of the cases identified between 5-8 weeks gestation. Risk factors for heterotopic pregnancy include ART, history of ectopic pregnancy, previous tubal surgery, and history of pelvic inflammatory disease. In this case, there were no identifiable risk factors.

As demonstrated, B-HCG levels are unreliable in the diagnosis of heterotopic pregnancy due to the co-existence of ectopic and IUP. Whilst TVUSS remains invaluable in diagnosing early pregnancy complications, it is highly user-dependent and prone to confirmation bias. Therefore, most cases were diagnosed during surgery (59-74%) after rupture of the ectopic pregnancy has occurred.

In conclusion, having an high index of suspicion is required in most cases, and to quote John Lubbock, "What we do see depends mainly on what we look for".

References:

Kajdy, A., Muzyka-Placzyńska, K., Filipecka-Tyczka, D. *et al.* A unique case of diagnosis of a heterotopic pregnancy at 26 weeks – case report and literature review. *BMC Pregnancy Childbirth* **21**, 61 (2021). <https://doi.org/10.1186/s12884-020-03465-y>