

EP05.10. Double vessel sign on first-trimester ultrasound: an early marker of polysplenia syndrome.



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Introduction

Discordance between stomach and cardiac position at first-trimester screening raises suspicion for heterotaxy, however, differentiating polysplenia from asplenia remains challenging.

Cases

Among 3,099 consecutive first-trimester scans performed at our institution between January 2023 and December 2025, two fetuses showed abnormal organ positioning with a right-sided stomach and left-sided heart.

One fetus had no associated cardiac anomaly, whereas the other had an atrioventricular septal defect.

Key Ultrasound Findings

Color Doppler demonstrated two parallel vessels anterior to the spine with opposite flow directions (aorta and azygos vein), consistent with the “**double vessel sign**.”

This finding suggested interruption of the inferior vena cava with azygos continuation.

Clinical Implications

Recognition of this vascular sign enabled early suspicion of **polysplenia syndrome** and facilitated appropriate counseling regarding the spectrum of associated anomalies.

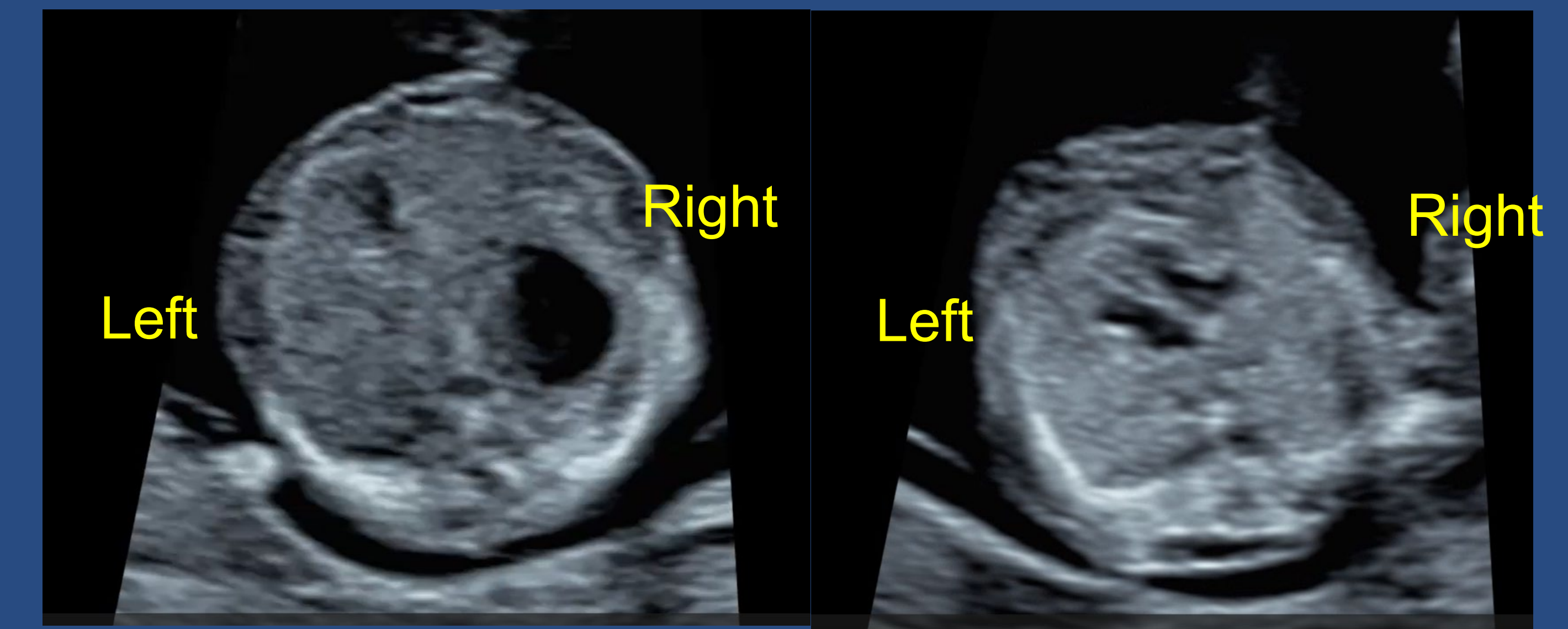


Figure 1. Heterotaxy: a right-sided stomach and left-sided heart.

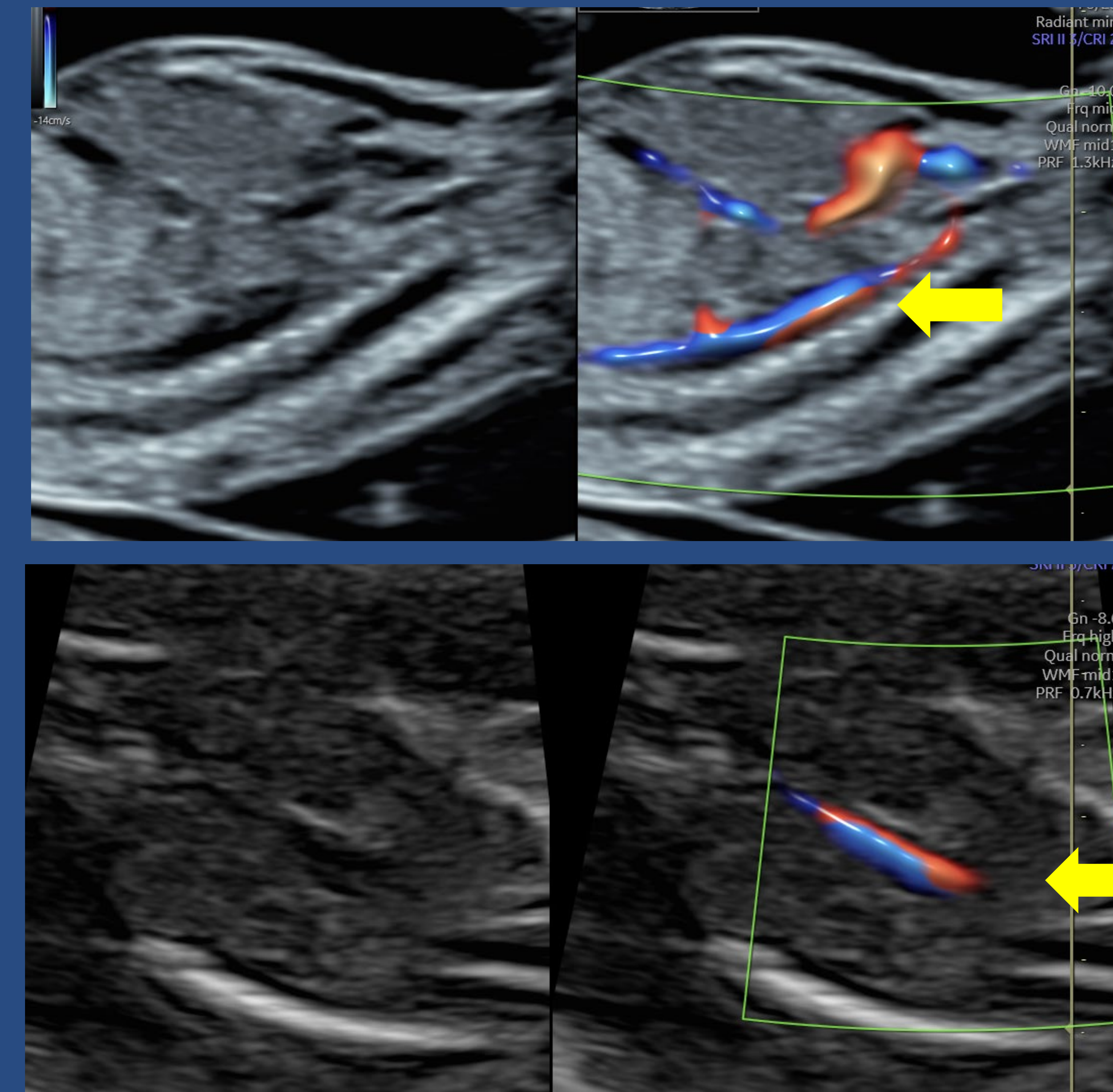


Figure 2 and 3. **Double vessel sign**; demonstrated two parallel vessels anterior to the spine with opposite flow directions, corresponding to the aorta and azygos vein.

Conclusion

The **double vessel sign** in the first trimester may serve as a useful early marker of interrupted inferior vena cava and polysplenia syndrome, aiding differentiation within the heterotaxy spectrum and supporting clinical decision-making.

This sign may be particularly valuable when structural abnormalities are subtle in early gestation.