

Diagnostic utility of the 14 week transvaginal scan for detection of first-trimester cardiac anomalies

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Introduction: In recent years, there has been a steady increase in the first-trimester detection of cardiac anomalies. This can be attributed to better resolution of ultrasound machines and also to the usage of standardized protocols for cardiac assessment. In routine practice, often at 11-12 weeks, there is a suspicious finding like a single inflow/outflow tract. Such cases need to be followed up in early mid-trimester to identify the cardiac abnormality. The objective of this study is to explore the utility of transvaginal 14-week window in cases with suspicious cardiac findings.

Methods: This was a retrospective analysis of 85 cases diagnosed with cardiac anomalies at first-trimester scan. The transvaginal cardiac scan performed at 14 weeks in cases with suspicious findings at 11-12 weeks were assessed for additional information provided compared with the earlier scans.

Results: Of the 85 cases, the initial diagnosis of cardiac anomaly was made in 39% (33/85) of cases at the first visit itself. In the remaining 52 cases, the transvaginal 14-week scan showed additional findings. 40% (21/52) of cases with single outflow tract could be categorized as either TGA, DORV, TOF or a truncus arteriosus.

26% (14/52) of cases with a single inflow tract were diagnosed as atrioventricular septal defect (AVSD). Flow reversal in the aortic arch in the 3VT view was evident in 9/14 cases of hypoplastic left heart syndrome only at the time of 14-week scan. Flow reversal in the ductal arch in 3VT view was evident in 6/8 cases with pulmonary atresia. 2/2 cases of coarctation of aorta was identified at 14 weeks. In 10 cases of right aortic arch, the 14-week scan did not yield additional information over the 12-week scan.

Conclusion: A suspicious cardiac finding at 11-12 weeks can be reassessed at 14 weeks by a transvaginal scan. In 61% of cases, this window yielded more additional diagnostic information. The utility of this window is highest in the diagnosis of conotruncal anomalies, AVSD and in the identification of flow reversal in the 3VT view.

