

EP08.25 Assessing left atrial function in fetuses with left ventricular outflow tract obstruction using two-dimensional speckle tracking echocardiography

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Objectives

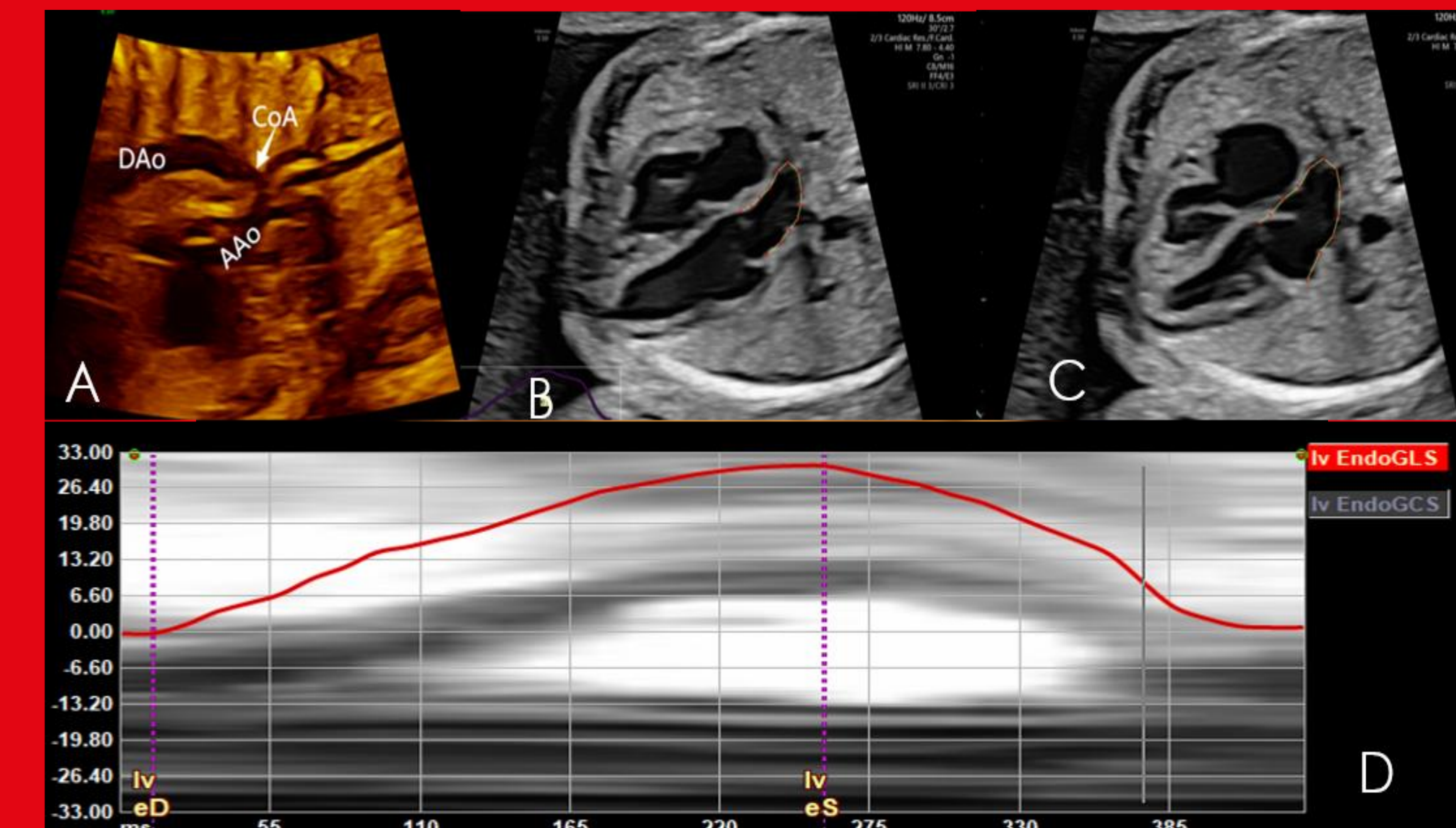
To explore the value of two-dimensional speckle tracking echocardiography(2D-STE)in evaluating left atrial(LA) function in normal fetuses and fetuses with left ventricular outflow tract obstruction (LVOTO).

Methods

A total of 32 fetuses diagnosed with LVOTO and 100 normal fetuses were enrolled. The LA reservoir phase longitudinal strain(LASr), LA ductal phase longitudinal strain(LAScd), LA systolic phase longitudinal strain (LASct), AO and PA diameters, LV and RV diastole End-diastolic transverse diameter(LVd, RVd) were obtained. The ratio of RVd to LVd(RVd/LVd) and the ratio of PA to AO (PA/AO) were calculated. LA strain parameters between the two groups were compared, and the correlation between strain parameters and GA, RVd/LVd and other conventional measurement parameters were analyzed.

Results

Significant differences were found in LASr, LAScd, LASct, MAPSE, AO, LAESL, LVEDD, RVd/LVd and PA/AO between the two groups (all $P<0.05$). LASr, LASct were negatively correlated with RVd/LVd ($rs=-0.394$, $P=0.025$; $rs=-0.626$, $P=0.004$, respectively) in LVOTO group. In the control group, LASr, LASct and LAScd were negatively correlated with GA, AO and PA ($r/rs=-0.570$, -0.440 , -0.493 , all $P<0.001$; $r/rs=-0.601$, -0.532 , -0.568 , all $P<0.001$; $r/rs=0.310$, 0.370 , 0.314 , all $P<0.05$, respectively). ROC curve analysis showed that AUC in LASr and RVd/LVd in evaluation of fetal cardiac dysfunction with LVOTO was 0.890 (0.826,0.953) and 0.742 (0.637,0.846), respectively($P<0.05$).



*Figure 1 Fetal LA Strain derived parameters of a fetus with CoA
A, Aortic Arch View; B&C. LA tracing in diastole and in systole; D, LA strain curve*

Conclusion

2D-STE is highly feasible and reproducible in assessing fetal LA function. Evaluation of fetal LA function by 2D-STE provides a new reference index for quantitative analysis of fetal cardiac dysfunction

