Is the matrix 3D probe useful in fetal heart ultrasound screening?
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Objectives
In ultrasound fetal heart screening, many views should be obtained. But the heart structure is very complicated and fetus is unstable. So, we have to vary the placement of the probe to get correct images and it takes long time. The rendering of the bi-plane which could not be obtained except by probing with 2D is made possible on the same screen in real-time without probing with the matrix probe by the orthogonal elements on the plane transmitting and receiving the beam alternately (Figure 1). The aim of study is to prove usefulness of matrix probe in fetal heart ultrasound screening.

Methods
32 normal fetal heart cases in 18 – 20 w, examiner: one person, observation cross-section: 4CV, ROT, LOT, SVC-RV-IVC, PV, DV, Ao arch, AV septum, pulmonary vein and venous duct observation, by B-mode and by color for regurgitation, stenosis and shunt. We investigated rendering time using conventional 2D probe (RM6C) and 2D with matrix probe (eM6C) in bi-plane.

Results
There was no abnormal case in 32 cases and all images were obtained in all cases. The average ± standard deviation of exam time was: 2D probe: 187.3 ± 135.7 seconds, matrix probe: 96.7 ± 57.8 seconds. Significantly, the test time was shortened with p < 0.05 matrix probe (Figure 2).

Conclusion
In Foetal cardiac sonography examination, shortening the exam time while ensuring the accuracy of the rendered cross-section is found to be possible by using matrix probe in bi-plane.