The fetal brain anatomy and volume measurement using 3D / 4D ultrasonography
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Objective: We tried to report visualize an image conforming to normal fetal brain anatomy as much as possible using ultrasonography.

Methods: The subjects were 8 pregnant women who were single gestational pregnancies from 15 weeks to 36 weeks gestation and without fetal abnormalities and no complications. Method: Ultrasonography equipment is VOLUSON E 8 (GE health care). RM6C was used as the abdominal probe. (1) Eleven items of bone suturing, forebrain brain, cranial suture, corpus callosum, thalamus, lens, hypothalamus, optic crossover, cerebellum and cerebral groove were used for visualization. (2) Volume of the fetal brain measurement.

Results: The average maternal age was 39.33 ± 1.6 years old, and the average pregnancy week at the time of examination was 23.5.0 ± 8.4. All of the depicted items were satisfied for 23 weeks pregnant and only 15 items for 15 weeks gestation(Fig1~3). Intracranial volume (cm$^3$) was from 8.81 at week 15 of pregnancy to 268.56 at week 40 of pregnancy ($(R^2 = 0.959, p <0.001)$ (Fig4)

Conclusion: 3D ultrasonography apparatus has lower resolution than MRI, but for fetal evaluation it can be matched to fetal movement with low invasiveness to pregnant woman / fetus. Furthermore, we are specializing more than MRI for the observation of target, arbitrary depth and surface structure.