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Evolution of fetal acrania from 7 to 10 weeks gestation

A 36yr old woman presented for first trimester ultrasound following conception via in vitro fertilization. A single live fetus at 7 weeks 4 days was observed with an unusual appearance to the cranial end of the embryo (Figure A). At 8 weeks 4 days, a bilobular cranium and wide separation of the upper cervical spine was evident on ultrasound (Figure B). The suspected diagnosis of acrania was confirmed at 10 weeks 4 days with the following features: absent cranial vault, bilobular brain, dilated fourth cerebral ventricle and hyperechogenic amniotic fluid (Figure C, Supplementary video). No other fetal structural abnormalities were detected. Cell-free DNA screening result was low risk for aneuploidy. Fetal acrania may be suspected as early as 7 weeks, and confirmed at 10 weeks gestation. First trimester ultrasound provides important opportunities for the early detection of major structural anomalies in the era of cell-free DNA screening.

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PD_5688_acrania still image 1.tiff

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