



Placental cotyledon reperfusion of the reduced fetus after radiofrequency ablation in MCDA twins

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Objective

Radiofrequency ablation (RFA) is a reliable means for selective fetal reduction in complicated monochorionic (MC) multiple pregnancies. Since nearly all the MC placentas have various of anastomoses between the fetuses, the cotyledons of the reduced fetus may be perfused by the living fetus through anastomoses, which has not been mentioned in literature. This study is to investigate whether the placenta reperfusion exists and the role of anastomoses in reperfusion after selective fetal reduction by RFA.

Methods

Placentas of MC multiple pregnancy which had selective fetal reduction by RFA at least 30 days before delivery were collected in a fetal center of a tertiary hospital and examination of the placental area of the reduced fetus was carried out. The placental area of the reduced fetus was defined according to the equator line. Vascular casting method was used to examine the placental blood vessel distribution and anastomoses.

Results

Nine cases were recruited from Jan 1, 2016 to March 31, 2017. Fetal malformation (3 cases) and dichorionic triamniotic (DCTA) triplet pregnancies (2 cases) were the two most common indications for fetal reduction. Fetal reductions were performed at z gestational age of 17.4 ± 1.8 weeks. The interval between fetal reduction and delivery ranged from 56 to 171 days. All 9 cases have live born babies, which were delivered at a gestational age of 37.4 ± 1.6 weeks. In the two DCTA cases, the birth weight of the living fetuses of the MCDA twins were 7.1% and 12.8% heavier than the corresponding monochorionic singleton, despite their consistency in sex. Reperfusion was observed in eight placentas with various degrees by grossly pathologic examination. Vascular casting method was applied in two placentas and all showed the reperfusion of cotyledons of the reduced fetus by the artery-artery (AA) anastomosis and the vein-vein (VV) anastomosis between the MCDA twins.

Conclusion

Placental cotyledon reperfusion of the reduced fetus was common in MC multiple pregnancies which underwent RFA. Through the AA and VV anastomoses, the living fetus can obtain more placental area and increase its growth potential.

