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Growth outcomes associated with prenatal diagnosis of partial and complete circumvallate placenta

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(Table). Ultrasound characteristics from the 16 - 21 wk epoch were predictive of complications with an ROC AUC = 0.82 (0.71 − 0.92). At 21 − 26 wk, the characteristics were less predictive [AUC = 0.69 (0.56 − 0.81)]. Using characteristics from the 16 - 21 wk epoch and setting the false negative rate (FNR) to 10%, 78/176 (44%) pregnancies were predicted to be uncomplicated. At 21 − 26 weeks with the same FNR, 59/207 (28.5%) pregnancies were predicated to be uncomplicated.

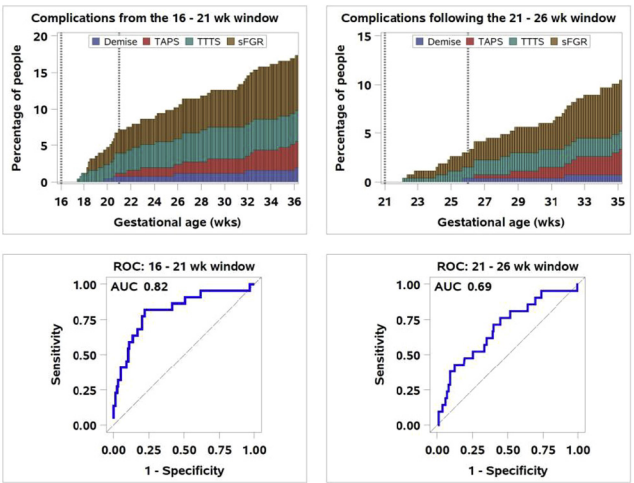
CONCLUSION: Ultrasound parameters collected during surveillance of MCDA twins may help predict those at low risk for fetal complication.

Table: Ultrasound characteristics associated with complications of MCDA twins

Parameter	Uncomplicated	Developed Complication	Multivariate Analysis		
			Odds Ratio	95% CI	p-value
16 - 21 (wks) Gestational Age					
EFW Discordance > 10%	63 (30.6%)	25 (64.1%)	5.84	1.99 - 17.16	< 0.01
MVP Difference > 2 cm	13 (6.8%)	13 (30.2%)	2.13	0.52 - 8.68	0.29
MCA PSV MOM*	1.03 (± 0.18)	1.10 (± 0.23)	6.08	0.40 - 91.57	0.19
UA S/D	0.73 (± 0.56)	1.30 (± 1.00)	14.08	2.14 - 92.87	< 0.01
21 - 26 (wks) Gestational Age					
EFW Discordance > 10%	61 (26.5%)	15 (53.6%)	3.03	1.13 - 8.01	< 0.01
MVP Difference > 2 cm	28 (12.1%)	7 (25.9%)	2.87	0.96 - 8.55	0.06
MCA PSV MOM	1.02 (± 0.19)	1.03 (± 0.20)	8.26	0.66 - 104.02	0.10

Abbreviations: CI - confidence interval, EFW - estimated fetal weight, MVP - maximum vertical pocket, MCA PSV MOM - middle cerebral artery peak systolic velocity multiples of the median, UA S/D - umbilcal artery systolic to diastolic velocity ratio.

*All Doppler indices were parameterized as the ratio of the index of the smaller twin to the that of the larger twin.



991 Growth outcomes associated with prenatal diagnosis of partial and complete circumvallate placenta

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OBJECTIVE: Prior studies have shown higher rates of fetal growth restriction associated with circumvallate placenta based on placental pathology. However, none have assessed growth outcomes associated with sonographic diagnosis alone. The objective of this study is to assess the accuracy of ultrasound diagnosis of circumvallate placenta and to compare the association of partial and complete circumvallate placenta on ultrasound with fetal growth restriction (FGR) and small for gestational age (SGA) birthweight.

STUDY DESIGN: Patients with the sonographic diagnosis of circumvallate placenta (partial or complete) were identified. Confirmation of circumvallate placenta was noted if pathologic examination of the placenta was performed. Findings of antenatal FGR and neonatal SGA were recorded.

RESULTS: Placental pathology was available for 117 of 222 cases of sonographically diagnosed circumvallate placenta; 25 were confirmed to be circumvallate (21.4%). In patients with circumvallate placenta diagnosed on ultrasound, FGR was identified in 9.5% and SGA in 10.8%. FGR and SGA occurred in 7.3 and 8.0% in patients with partial circumvallate placenta, and in 10.6% and 17.0% of patients with complete circumvallate placenta, respectively. None of these values were significantly different from the baseline population rate of 10%. In cases of circumvallate placenta confirmed on pathology, FGR and SGA occurred in 12.0%.

CONCLUSION: The accuracy of sonographic diagnosis of circumvallate placenta remains poor. Strategies to improve sonographic diagnosis of circumvallate placenta are needed. Patients with circumvallate placenta identified on ultrasound did not have higher rates of FGR or SGA than the general population, even when partial and complete circumvallate placenta were evaluated separately. This information can be used to guide counseling for patients with circumvallate placenta identified on prenatal ultrasound and to re-evaluate recommendations for antenatal surveillance.

Figure 1: Pathology confirmation of circumvallate placenta diagnosed on ultrasound

	Number of cases diagnosed on ultrasound	Number of cases sent for pathologic examination	Number of cases confirmed to be circumvallate on pathology	% confirmed to be circumvallate on pathology
Total	222	117	25	21.4 %
Partial circumvallate	137	72	13	18.1 %
Complete circumvallate	47	23	7	30.4 %
Unspecified	38	22	5	22.7 %

Figure 2: Associations of partial and circumvallate placenta with fetal growth restriction and small for gestational age birthweight

	Number of cases with fetal growth restriction	Number of cases with small for gestational age birthweight
Partial (n=137)	10 (7.3%, p=0.292)	11 (8.0%, p=0.442)
Complete (n=47)	5 (10.6%, p=0.884)	8 (17.0%, p=0.109)
Circumvallate placenta identified on ultrasound (n=222)	21 (9.5%, p=0.788)	24 (10.8%, p=0.687)
Circumvallate placenta confirmed on pathology (n=25)	3 (12.0%)	3 (12.0%)

992 Postnatal sonographic spine evaluation following in utero fetoscopic repair of spina bifida

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