

Velamentous cord insertion in monozygotic twin pregnancies: a step forward in screening for twin-to-twin transfusion syndrome and birthweight discordance?

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Introduction

Monozygotic diamniotic (MCDA) twin pregnancies have higher risk of complications than dichorionic twins. The most frequent and serious one is twin to twin transfusion syndrome (TTTS), that without any treatment, contributes to over 90% of perinatal mortality. Increased intertwin nuchal translucency discrepancy, abnormal ductus venous flow (ADV) and velamentous cord insertion (VCI) are first trimester markers that are potentially associated with these complications. Current literature, however, offers conflicting evidence on their predictive capacity.

Material and Methods

Multicentered retrospective cohort study of patients with MCDA twin pregnancies who went through fetal ultrasound screening in the first trimester between January 2005 and September 2021. 142 gestations were eligible for analysis

Results

19 cases (12%) developed TTTS. The incidence of VCI in at least one twin in the population was 51.3%. There was no association between ADV in at least one twin, in the first trimester, and the development of TTTS ($p=0.147$) or between VCI in at least one twin and the development of this outcome ($p=0.273$). Logistic regression analysis of ADV in at least one twin, NTD (≥ 0.6 mm or 20%) and VCI in at least one twin, with the development of TTTS demonstrated no statistically significant association but a tendency towards its development ($p=0.078$).

Conclusions

Currently suggested 1st trimester screening markers do not appear to be associated with a statistically significant greater risk of developing TTTS or BWD when used in isolation or in combination. Our results are in concordance with the body of literature that refute the use of these markers as predictors. Establishment of clinical significance will require further studies with greater statistical power. Other ultrasonographic markers should be explored.

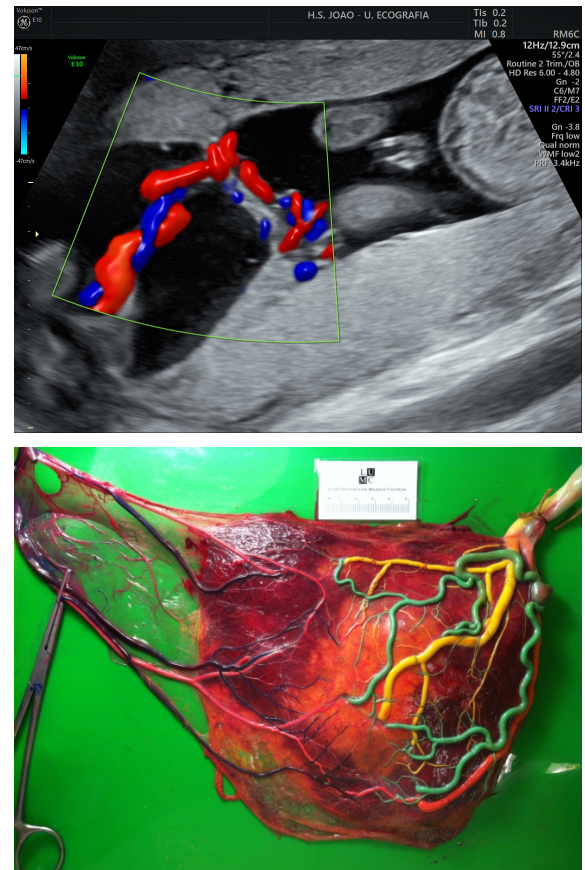


Fig 1 A – pathology of monozygotic placenta with velamentous cord insertion
B – velamentous cord insertion ultrasound