A case of rescue intra-uterine transfusion for massive fetomaternal haemorrhage

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Objective

Most instances of massive fetomaternal haemorrhage (FMH) result in either fetal demise or require emergent delivery to facilitate neonatal transfusion. We report a case of successful rescue intrauterine transfusion (IUT) following a massive FMH at 27 weeks and briefly summarise related published cases since the widespread introduction of the middle cerebral artery-peak systolic velocity (MCA-PSV) in 2000.

Methods

A 23-year old woman presented at 27 weeks in her 1st pregnancy with a 1 week history of reduced fetal movements and abdominal pain. CTG was normal. On ultrasound, there was no evidence of fetal hydrops but the MCA-PSV was raised (2. 1 MoM). FMH screen was positive, with 46ml fetal blood detected on flow cytometry. An emergency IUT was performed via the intrahepatic vein; a 70ml transfusion raised the fetal Hb from 5. 2g/dl to 16. 4g/dl. Weekly ultrasound surveillance was continued for the remainder of the pregnancy. Follow-up FMH screens at 48 hours and 2 weeks post-IUT showed no evidence of ongoing FMH and MCA-PSV remained within normal limits. She was induced at 37 weeks and had a successful vaginal delivery of a healthy 2, 200g baby girl, whose Hb level on day 2 of life was normal (21g/dl). The Pubmed and Medline databases were searched for English-language articles between January 2000 and December 2014 using combinations of the search terms fetomaternal, h(a)emorrhage, intrauterine, massive and transfusion. Clinical data for the case presented here and previously reported cases were extracted into a computerised database.

Results

We identified 27 published cases (including the present case) of successful IUT for massive FMH in 9 pregnancies over the past 15 years. 100% of women presented with reduced fetal movements, fetal hydrops or both. Only 22% (2/9) cases described the classic sinusoidal fetal heart trace on admission. Reported cases required a median (range) of 2 (1-5) transfusions. At initial presentation, the MCA-PSV on Doppler ultrasound was 2. 1 (1. 6-2. 7) MoM. The gestational age at 1st IUT was 28 (24-36) weeks. Of 27 IUTs, only 1 (4%) was performed beyond 32 weeks gestation. Median fetal Hb at 1st fetal blood sample was 2. 9 (1. 8-12. 5) g/dl. Median 1st IUT-delivery interval was 21 (0-70) days; gestational age at delivery was 31. 7 (28. 3-37) weeks. The live-birth rate was 89% (8/9) and all neonatal survivors were reported healthy at 6 (1-24) months.

Conclusion

We report a successful rescue IUT following a massive spontaneous FMH at 27 weeks, resulting in a healthy term infant. Similar cases are not commonly reported, with only 9 cases in the published literature over the past 15 years. Emergency intrauterine transfusion appears to be a safe therapeutic option in pregnancies complicated by massive FMH prior to 32 weeks gestation.