



Impact of targeted scanning protocols on perinatal outcomes in pregnancies at risk of placenta accreta spectrum or vasa previa

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Objective

Undiagnosed congenital disorders of placentation such as placenta accreta spectrum (PAS) and vasa previa (VP) are associated with high morbidity and mortality for both mothers and newborns. Prenatal diagnosis of these conditions is essential to multidisciplinary management planning and thus to perinatal outcomes. The objective of this study is to compare perinatal outcome in women with PAS or VP before and after implementation of targeted scanning protocols.

Methods

This retrospective study included two non-concurrent cohorts for each condition before and after implementation of the corresponding protocols (2004-2012 versus 2013-2016 for PAS and 1988-2007 versus 2008-2016 for VP). Clinical reports of women diagnosed with PAS and VP during the study periods were reviewed and outcomes were compared.

Results

In total, there were 97 cases of PAS and 51 cases with VP, all confirmed at delivery. In both cohorts, the prenatal detection rate increased after implementation of the scanning protocols (28/65 (43. 1%) cases versus 31/32 (96. 9%) cases; $p < 0.001$ for PAS and 9/18 (50%) cases versus 29/33 (87. 9%) cases, 87. 9%; $p < 0.01$ for VP). The perinatal outcome improved also significantly in both cohorts after implementation of the protocols. In PAS cohort, the estimated blood loss and the postoperative hospitalization stay decreased between periods (1520 ± 845 versus 1168 ± 707 ml, $p < 0.01$ and 10.9 ± 14.1 versus 5.7 ± 2.2 days, $p < 0.05$, respectively). In VP cohort, the number of 5 minute Apgar score ≤ 5 and umbilical cord pH < 7 decreased between periods (5/18 (27. 8%) cases versus 1/33 (3%) cases; $p < 0.05$) and 4/18 (22. 2%) cases versus 1/33 (3%) cases; $p < 0.05$, respectively).

Conclusion

The implementation of standardized prenatal targeted scanning protocols for pregnant women with risk factors for PAS and VP was associated with improved maternal and neonatal outcomes. The continuous increases in the rates of caesarean deliveries and used of assisted reproductive technology highlights the need to develop training programs and introduce scanning protocols at the national and international levels.