

Editorial

Managing Placenta Previa with Fetal Risk in MindHironori Takahashi^{1,*}¹Department of Obstetrics and Gynecology, Jichi Medical University, 329-0498 Tochigi, Japan*Correspondence: hironori@jichi.ac.jp (Hironori Takahashi)

Academic Editor: Michael H. Dahan

Submitted: 15 March 2024 Accepted: 22 March 2024 Published: 17 April 2024

The focus on placenta previa tends to be on maternal risks, although there are substantial fetal risks as well. Specifically, the risk of cerebral palsy (CP) in fetuses increases in the presence of placenta previa [1]. A recent retrospective study using a national database in Norway compared the backgrounds of CP infants with those of healthy infants [1]. Among infants with CP, 22 were complicated by placenta previa, which accounted for 0.9% of the 3250 placenta previa cases. After adjusting for maternal age and parity, placenta previa was found to increase the risk of CP (adjusted relative risk: 2.98, 95% confidence interval (95% CI): 1.96–2.43). The study also examined risks of other placental and umbilical cord abnormalities. Only placental abruption (adjusted relative risk: 10.25, 95% CI: 8.43–12.97) was associated with a higher risk of CP than placenta previa, suggesting that placenta previa is associated with a higher risk than other cord or placental abnormalities (velamentous cord insertion: adjusted relative risk, 2.06, 95% CI: 1.64–2.58; umbilical cord knot: adjusted relative risk, 1.54, 95% CI, 1.16–2.06; isolated single umbilical artery: adjusted relative risk, 1.07, 95% CI: 0.58–1.99; retained placenta: adjusted relative risk, 1.69, 95% CI: 1.30–2.20).

There are two main reasons why placenta previa increases the CP risk. Firstly, massive antenatal hemorrhage associated with placenta previa can lead to maternal circulatory failure, resulting in fetal circulatory failure with cerebral ischemia developing periventricular leukomalacia (PVL). Secondly, placenta previa often necessitates preterm births secondary to massive antenatal hemorrhage or other complications. The resultant prematurity can lead to CP. There are several studies that have associated CP and preterm deliveries in patients with placenta previa. While most obstetricians strive to prolong pregnancy in the presence of placenta previa, they also desire to avoid major hemorrhage.

Episodes of antenatal hemorrhage in late pregnancy increase the risk of CP. A single-center study retrospectively evaluated CP infants [2] with 10 infants were born between 30 and 31 weeks of gestation resulting in cystic periventricular leukomalacia (PVL) developing in 5 of the infants. Interestingly, the 5 infants with cystic PVL had experienced significant maternal antenatal hemorrhage, whereas only 1 of the 5 healthy infants had experienced such an episode. Due to the universal health insurance system in Japan, patients with placenta previa who have experienced antenatal hemorrhage are hospitalized. In addition, placenta previa patients with a short cervix (e.g., less than 20 mm) or lack of home support in case of an emergency are also hospitalized. However, it remains unknown whether this practice reduces the maternal-fetal risks including CP. A randomized trial showed that there was no significant differences in morbidities between inpatients and outpatients, although the incidence of CP was not evaluated [3].

We desire to introduce this special issue regarding placenta previa with 4 original articles. Bai *et al.* [4] discussed internal iliac artery ligation for placenta previa. They demonstrated that the internal iliac artery ligation was an effective method in managing high-risk obstetric bleeding and helps to avoid a further operation including hysterectomy. Dong *et al.* [5] discussed the usefulness of barbed suture for placenta accreta spectrum (PAS). They evaluated intraoperative complications and postoperative complication during a 6 week postoperative period. Choi *et al.* [6] evaluated the risk of emergent cesarean hysterectomy in more than 900 patients with placenta previa. They developed predictive models for cesarean hysterectomy using several parameters. Caldas *et al.* [7] summarized their experience of PAS cases over 15 years reporting safe management practices. Although the 4 manuscripts are based on retrospective studies, the data presented is clinically beneficial. Pregnancies at an advanced maternal age have been increasing, and thus pregnancies associated with placenta previa will increase. Placenta previa associated with advanced age pregnancies are frequently complicated with PAS. Placenta previa with PAS may result in an increase in maternal and/or fetal morbidity. Additional investigations are needed to add various perspectives for these serious medical conditions.

Author Contributions

All work was conceived and completed by HT.

Ethics Approval and Consent to Participate

Not applicable.

Acknowledgment

Not applicable.



Funding

This work was supported by Grants-In-Aid for Scientific Research [grant No. 22K09624] from the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan.

Conflict of Interest

The author declares no conflict of interest. Hironori Takahashi is serving as one of the Guest editors of this journal. We declare that Hironori Takahashi had no involvement in the peer review of this article and has no access to information regarding its peer review. Full responsibility for the editorial process for this article was delegated to Michael H. Dahan.

References

- [1] Furuta K, Tokunaga S, Furukawa S, Sameshima H. Acute and massive bleeding from placenta previa and infants' brain damage. *Early Human Development*. 2014; 90: 455–458.
- [2] Ebbing C, Rasmussen S, Kessler J, Moster D. Association of placental and umbilical cord characteristics with cerebral palsy: national cohort study. *Ultrasound in Obstetrics & Gynecology*. 2023; 61: 224–230.
- [3] Wing DA, Paul RH, Millar LK. Management of the symptomatic placenta previa: a randomized, controlled trial of inpatient versus outpatient expectant management. *American Journal of Obstetrics and Gynecology*. 1996; 175: 806–811.
- [4] Bai L, Lin J, Shen Q, Fu X. Application of Ligation of Internal Iliac Artery and Uterine Artery in Pernicious Placenta Previa. *Clinical and Experimental Obstetrics & Gynecology*. 2023; 50: 190.
- [5] Dong R, Zhang L, Chen Q, Chen Q, Wu Y, Shan D, *et al.* Barbed Suture versus Conventional Suture for Uterine Repair in Women with Placenta Accreta and Placenta Increta: A Retrospective Cohort Study. *Clinical and Experimental Obstetrics & Gynecology*. 2023; 50: 180.
- [6] Choi MG, Kim JW, Kim YH. Predictive Model of Cesarean Hysterectomy Accompanying Cesarean Section in Patients with Placenta Previa. *Clinical and Experimental Obstetrics & Gynecology*. 2023; 50: 75.
- [7] Caldas R, Parr A, Adno A, Borok N, Smoleniec J, Rahimpanah F. Placenta Accreta Spectrum (PAS) Disorders: Lessons Learned from the Introduction of Different Management Strategies in an Australian Tertiary Hospital. Retrospective Study (2004 to 2020). *Clinical and Experimental Obstetrics & Gynecology*. 2023; 50: 68.