Anesthetic Management of Massive Hemorrhage During Planned Cesarean Hysterectomy for Placenta Accreta

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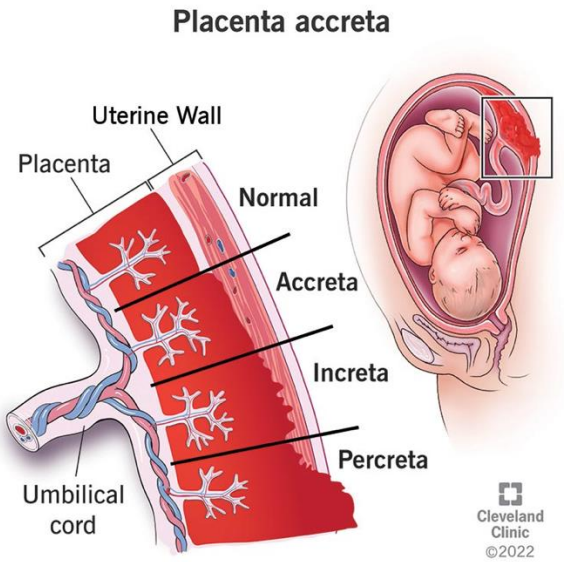
- Placenta accreta is a condition where the chorionic villi abnormally invade the myometrium
  - Occurs in approximately 1 in 1,000 pregnancies.
  - Incidence has increased in the last 50 years due to the rising number of cesarean deliveries.[1]
  - High risk of massive hemorrhage and a maternal morbidity and mortality.[2]

- Anesthetic management plays a pivotal role in improving outcomes for high-risk patients, requiring meticulous preoperative assessment, careful blood management, and strategies for handling potential complications, including coagulopathy, uterine atony, and hemodynamic instability.



1. Garmi, G., & Salim, R. (2012). Epidemiology, etiology, diagnosis, and management of placenta accreta. *Obstetrics & Gynecology International*, 2012, 873929. https://doi.org/10.1155/2012/873929. Epub 2012 May 7. PMID: 22645616; PMCID: PMC3356715.
2. Royal College of Obstetricians and Gynaecologists (RCOG). (2018). *Placenta accreta, percreta, and increta: Diagnosis and management (Green-top Guideline No. 27)*. RCOG.

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Case Description

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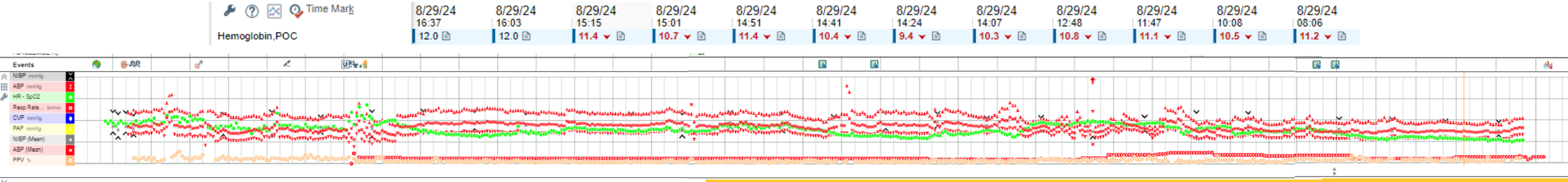
A 39-year-old G3P2002 33w5d with a PMHx of Von Willebrand's disease and FHx of pseudocholinesterase deficiency presented for planned cesarean hysterectomy in the setting of complete placenta previa and placenta accreta spectrum.

- Preoperatively: an a-line, two 14G pIVs, and a CSE were placed.
- Cesarean section: delivery of the fetus with EBL 800cc and 2U PRBC transfused due to bladder involvement.
- Hysterectomy:
  - Converted to GETA via RSI. During the dissection of the uterine vein massive bleeding ensued and MTP was activated.
  - As MAPs approached 70s, norepinephrine infusion started while transfusions continued. Subsequent ABGs showed improvement in acidosis with rising potassium levels which peaked at 6.8. With the assistance of trauma surgery, each bleeding source were clamped hemostasis was achieved.
  - Over the course of 3 hours, the patient lost a total of 17 liters of blood. In total, 35U PRBCs, 29U FFP, 3U platelets, 3U cryoprecipitate, 5U 5% albumin, and 7L of crystalloid were transfused.
- Postoperatively: remained intubated and transported to the ICU. Discharged from the hospital POD 4.



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Discussion

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- Patient factors:
  - PMHx Von Willebrand Disease: alphanate was administered.
  - FHx of pseudocholinesterase deficiency: succinylcholine and ester local anesthetics were avoided.
- Anesthesia factors:
  - Vascular Access: two 14G pIVs with continuous arterial line monitoring.
  - Transfusion capabilities: blood products and the rapid infusion pump were available.
- Team & Systemic factors:
  - Direct communication between surgical and anesthesia teams.
  - Consider REBOA for future high risk cases.

http://medical-xprt.com/products/thermacor-model-1200-rapid-infuser-870670

B Braun INTROCAN SAFETY® 3 Closed IV Catheter[2]

Color	Gauge	Catheter Length (in)	Outer Diameter (mm)	Gravity Flow Rate (ml/min)
Yellow	24	0.75	0.7	20
Blue	22	1.00	0.9	35
Pink	20	1.00	1.1	65
Pink	20	1.25	1.1	60
Pink	20	2.00	1.1	55
Green	18	1.25	1.3	105
Green	18	1.75	1.3	100
Gray	16	1.25	1.7	195
Gray	16	2.00	1.7	185
Orange	14	1.25	2.2	325
Orange	14	2.00	2.2	310

https://belmontmedtech.com/sites/default/files/2021-02/701_00311%20CS%20Best%20Practice%20Sharing%20catheter%20flow%20rate%20and%20rapid%20infusion%20Rev%20B_Clean.pdf

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