Neuraxial Denied: Anesthetic Management of Severe Pancytopenia and Presumed Myelodysplastic Syndrome in a Patient with Superimposed Preeclampsia

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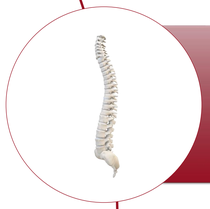
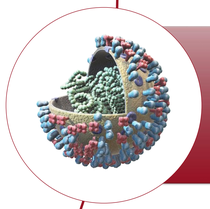
BACKGROUND

Pancytopenia in pregnancy is uncommon and carries high maternal-fetal risk. Causes include marrow failure syndromes, myelodysplastic syndrome (MDS), infections, autoimmune disease, and nutritional deficiencies.



Severe thrombocytopenia increases hemorrhage risk and often precludes neuraxial anesthesia due to potential spinal hematoma.



Perioperative care is further complicated by transfusion needs, alloimmunization, and immunosuppressive therapy.

Superimposed preeclampsia further heightens maternal morbidity, making multidisciplinary management essential.

CASE PRESENTATION

A 32-year-old G1P0 at 36+6 weeks with pancytopenia, recurrent pneumonia, and heterozygous Factor V Leiden mutation presented for induction.

- Evaluation revealed persistent cytopenias with platelets <50,000/μL. Bone marrow biopsy showed trisomy 11 and KMT2A clone, suggestive of MDS. She required >14 transfusions during pregnancy for anemia and thrombocytopenia.
- During induction, she developed severe-range pressures and was diagnosed with **preeclampsia with severe features.** Magnesium sulfate was started. Severe thrombocytopenia contraindicated neuraxial anesthesia; cesarean was performed under **general anesthesia**.
- **Anticipating hemorrhage**, large-bore IV access was secured and blood products prepared. Estimated blood loss was 1,000 mL, with **intraoperative transfusion** of red cells and platelets.
- Postoperatively, she **remained hemodynamically stable** with mild-range pressures and intermittent oxygen needs from pneumonia.
- **Hematology recommended IVIG** and transfusion support prior to discharge. Postpartum anticoagulation was considered but deferred due to persistent platelets <50,000/μL. She was discharged on postoperative day six with **close hematology and obstetric follow-up**.

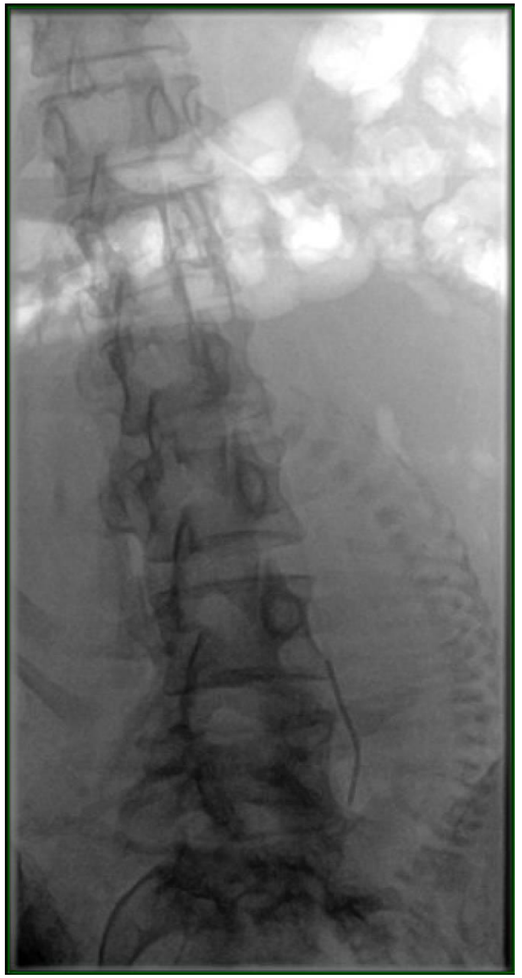


Image: embolization catheter placed prior to C-section

TEACHING POINTS

This case illustrates anesthetic and hematologic challenges in pancytopenic pregnancies, underscoring the anesthesiologist's role in **anticipating hemorrhage**, **securing transfusion readiness**, and **tailoring anesthetic strategy**.

Multidisciplinary planning enabled safe maternal and neonatal outcomes despite overlapping hematologic, obstetric, and anesthetic risks.

Neuraxial anesthesia is contraindicated with severe thrombocytopenia; guidelines suggest ≥70,000/μL, with individualized consideration between 50,000–70,000/μL.

General anesthesia was safest to avoid spinal hematoma. Transfusion targets were hemoglobin >7 g/dL and platelets >50,000/μL for surgery, higher if bleeding.

Pregnancy hypercoagulability and Factor V Leiden raised thrombosis risk, but anticoagulation was withheld to prevent hemorrhage, reflecting the delicate balance of care.

References on request, email: Nicholas.Mangano@StonyBrookMedicine.edu