

Impact and Anesthetic Considerations of Breast Cancer in the Pregnant Patient

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Background

- Breast cancer is the most common malignancy diagnosed during pregnancy worldwide
- Metastatic breast cancer during pregnancy presents unique challenges
- Overlapping pregnancy-related physiologic changes and cancer-associated organ dysfunction
- Malignant metastases to the spine can present challenges to neuraxial anesthesia

Pregnancy Physiology

- ↓ Functional residual capacity
- ↑ Oxygen consumption
- Hypercoagulability

Cancer Consideration

- Spinal metastases → neuraxial risk
- Hepatic metastases → altered hepatic blood flow & anesthetic tolerance
- Chemotherapy → immunosuppression

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Case Presentation

- 33 y.o. G3P2 at 27 weeks with Stage IV metastatic breast cancer
 - Metastasis to the spine and liver
- Multidisciplinary Concerns
 - Spinal metastases raised significant concern for difficult neuraxial placement and increased risk of adverse events
 - Patient with extreme discomfort lying flat
 - Hepatic metastatic involvement raised concern for deleterious effects on hepatic blood flow and function under general anesthesia
- Caesarean delivery at 28 weeks under GETA
- Radiation and chemotherapy initiated prior to discharge



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References

Neuraxial Anesthesia in Patients with Spinal Metastases

Key Risks and Mechanisms

Structural Instability

- Vertebral Damage
- Pathologic Fracture
- Spinal Cord Compression

Epidural Tumor Burden

- Reduced Epidural Space
- Unpredictable Block
- High Neuraxial Spread

Needle Trauma to Tumor

- Tumor Bleeding
- Epidural Hematoma
- Cord Compression

Tumor Seeding Risk

- Tumor Seeding
- Cancer Cell Spread
- Rare but Possible

Pre-existing Cord Compression

- Occult Compression
- Masked Symptoms
- Delayed Diagnosis

Major Risk Categories

Risk Category	Mechanism	Consequence
Structural Instability	Vertebral Metastasis	Fracture / Cord Compression
Epidural Tumor	Distorted Anatomy	Failed or High Block
Vascular Tumor Puncture	Vascular Tumor Puncture	Epidural Hematoma
Tumor Seeding	Needle Through Tumor	Theoretical Metastasis
Occult Cord Compression	Masked Deficits	Delayed Diagnosis

Red Flags Before Neuraxial Anesthesia

- Vertebral Metastases
- Back Pain with Neuro Symptoms
- Known Epidural Disease
- Recent Neurologic Changes

Discussion

Modality	Advantage	Disadvantage
GETA	- Bypasses tumor involved spine - Better for urgent interventions - Decreases adverse events in patients with spinal pathology	- Increased risk for airway complications and aspiration - Increased fetal drug exposure - Increased physiologic stress
Neuraxial	- Avoids obstetric airway concerns and aspiration risks - Provides excellent analgesia - Opioid sparing modality - Less fetal drug exposure	- Increased risk of vertebral damage secondary to metastatic processes - Can mask cord compression from mass effect