

# Anesthetic Complications in Pregnancy



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## KEYWORDS

- Thrombocytopenia • Epidural hematoma • Aspiration • Neuraxial blockade
- Failed intubation • Postdural puncture headache • Neuropathy
- Transient neurologic symptoms

## KEY POINTS

- An epidural hematoma is symptomatic bleeding within the spine whereby accumulating blood outside the dura can cause rare but potentially catastrophic compression of neural tissue by direct injury or ischemia. There is no recommended absolute minimum platelet count that would contraindicate neuraxial procedures.
- Neuraxial blockade consists of either epidural or spinal blockade, the goal of which is to provide analgesia for delivery of the infant. Common complications of neuraxial blockade include hypotension, high spinal, local anesthetic systemic toxicity, persistent neuropathy, transient neurologic symptoms, and postdural puncture headache.
- Anticoagulant use is not an absolute contraindication to neuraxial placement; however, one must know the medication dosage, frequency, and last administration. National guidelines exist to aid in providing safe care in the setting of ever-changing anticoagulation medications.
- During pregnancy, many anatomic and physiologic changes occur that can lead to difficult airway management and increased the risk of aspiration.
- In the event of maternal cardiac arrest, the patient should be positioned with left uterine tilt and prepared for delivery of the fetus via cesarean section if there is not a return of maternal circulation after 4 minutes.

## THROMBOCYTOPENIA/EPIDURAL HEMATOMA

### *Introduction*

An epidural hematoma is symptomatic bleeding within the spine where accumulating blood outside the dura can cause rare but potentially catastrophic compression of neural tissue by direct injury or ischemia. Reported rates range from 1:2600 to 1:220,000. Even though pregnancy is a prothrombotic, hypercoagulable state, a decreased number or function of platelets (ie, with pre-eclampsia or hemolysis,

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elevated liver enzymes, low platelet count [HELLP] syndrome) or anticoagulant use can predispose the parturient to development of an epidural hematoma.<sup>1,2</sup>

### Risks

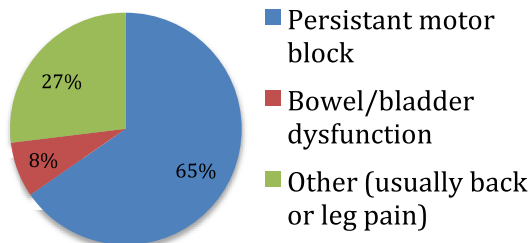
In a meta-analysis of spinal epidural hematomas from 1926 to 1996, the most common cause was idiopathic; the second was anticoagulant medications; fifth was spinal/epidural procedures with anticoagulant use, and the tenth on the list was spinal/epidural procedure without anticoagulant.<sup>1</sup>

Other risk factors include

- Increased age (55–70 years old)
- History of gastrointestinal bleeding
- Aspirin use during anticoagulation
- Length of therapy
- Female gender
- Intensity of anticoagulant
- Insertion or removal of epidural catheter
- Insertion of spinal or epidural needles (Fig. 1)

### Combination Therapies

- Vigilance, frequent neurologic monitoring after neuraxial procedures looking for excessive motor and sensory blockade
- Surgical decompression; most commonly with laminectomy and hematoma evacuation
  - Only 38% of patients had partial neurologic recovery and usually with surgery before 12 hours of symptom onset.
- Recommendations from the American Society of Anesthesiologists (ASA) practice guidelines<sup>3–5</sup>:
  - A specific platelet count predictive of neuraxial anesthetic complications has not been determined. The anesthesiologist's decision to order or require a platelet count should be individualized and based on a patient's history, physical examination, and clinical signs.
  - Platelet count is clinically useful for parturients with suspected pregnancy-related hypertensive disorders, such as pre-eclampsia or HELLP syndrome, and for other disorders associated with coagulopathy because it reduces maternal anesthetic complications.
  - Routine platelet count is not necessary in the healthy parturient.
  - Neuraxial anesthesia is best avoided in patients with coagulopathy, significant thrombocytopenia, platelet dysfunction, or those who have received fibrinolytic/thrombolytic therapy (Table 1).



**Fig. 1.** Initial presenting symptom. (Data from Kreppel D, Antoniadis G, Seeling W. Spinal hematoma: a literature survey with meta-analysis of 613 patients. *Neurosurg Rev* 2003;26:1–49.)

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