

Combined spinal and epidural anesthesia

1. Anatomy and placement a. **small-gauge spinal needle** is placed through an epidural needle once the epidural space has been located. The dura is punctured only by the spinal needle, and placement is verified by CSF withdrawal. Subarachnoid local anesthetics or narcotics can then be administered via the spinal needle.

b. The **spinal needle** is withdrawn after the initial dosing, and an epidural catheter is threaded into the epidural space through the existing epidural needle.

2. Onset and duration. This procedure combines the quick onset of spinal analgesia with the continuous dosing advantages of epidural analgesia.

3. Complications are similar to those seen in spinal and epidural anesthesia.

d. **Comparison of spinal or epidural anesthesia with general anesthesia.** Although the incidence of thromboembolic complications and total blood loss is reduced in certain surgical procedures with spinal or epidural anesthesia, there is no evidence that long-term mortality is reduced compared to general anesthesia .