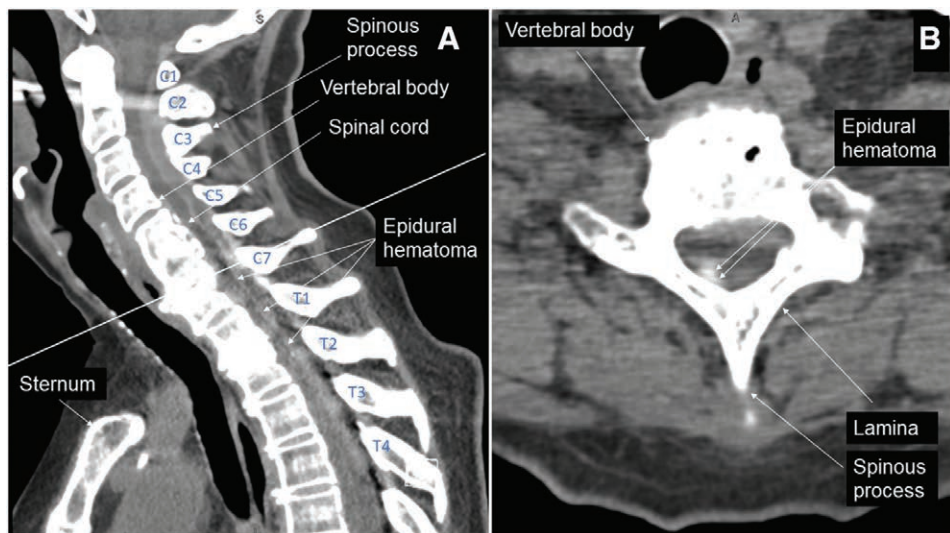


# Spinal Epidural Hematoma after Interlaminar Cervical Epidural Steroid Injection

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The exact incidence of spinal epidural hematoma after cervical epidural steroid injection is unknown, but the incidence of epidural hematoma after epidural block in obstetric patients is estimated to be ~1:200,000.<sup>1</sup> The computed tomography images above demonstrate an epidural hematoma in an 80-yr-old woman after C7–T1 epidural injection performed under moderate sedation. Thirty minutes after the procedure, she developed acute onset of neck pain, which progressed shortly to numbness down to her mid-sternum, 0/5 strengths in the bilateral elbows, wrists, and lower extremities, and loss of patellar-reflexes. The image was taken ~3 h after the onset of symptoms. Image A is a sagittal computed tomography image, which is notable for hyperdense collection of blood within the spinal canal extending from C2–T4. Image B is a cross-sectional view at the level of C7, which shows a biconvex-shaped hyperdense lesion within the spinal canal suggestive of epidural hematoma. The patient's localized neck pain, quadriplegia, loss of reflexes, numbness, sudden onset of symptoms, and computed tomography findings are characteristic of acute cord compression.

Surgical laminectomy and decompression is the standard intervention for epidural hematoma, and early detection and intervention are necessary to prevent permanent deficits. A previous study has shown that

patients with the same preoperative neurologic status (measured with numerical Frankel-grade: 1 equals complete motor and sensory loss, 5 equals no motor or sensory abnormalities) taken to surgery less than 12 h from the onset of symptoms had higher complete recovery rates than those taken to surgery more than 12 h from the onset of symptoms.<sup>2</sup> In stable patients, magnetic resonance imaging is the diagnostic modality of choice. The risk factors for bleeding in this case included trazodone<sup>3</sup> (selective serotonin reuptake inhibitors have been associated with bleeding) and older age.<sup>4</sup>

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## Competing Interests

The authors declare no competing interests.

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## References

1. D'Angelo R, Smiley RM, Riley ET, Segal S: Serious complications related to obstetric anesthesia: The serious complication repository project of the Society for Obstetric Anesthesia and Perinatology. *ANESTHESIOLOGY* 2014;120:1505–12
2. Lawton MT, Porter RW, Heiserman JE, Jacobowitz R, SonntagVK, Dickman CA: Surgical management of spinal epidural hematoma: Relationship between surgical timing and neurologic outcome. *J Neurosurg* 1995; 83:1–7
3. De Abajo FJ: Effects of selective serotonin reuptake inhibitors on platelet function: Mechanisms, clinical outcomes and implications for use in elderly patients. *Drugs Aging* 2011; 28:345–67
4. Cowman J, Dunne E, Oglesby I, Byrne B, Ralph A, Voisin B, Müllers S, Ricco AJ, Kenny D: Age-related changes in platelet function are more profound in women than in men. *Sci Rep* 2015; 5:12235