



TUMOR-LIKE SPONTANEOUS LUMBAR EPIDURAL HEMATOMA IN A PATIENT UNDER ANTICOAGULANT TREATMENT

Ali Erhan KAYALAR¹,
Gülce GEL¹,
Çağrı ELBİR¹,
Aşkın Esen HASTÜRK¹

¹Ankara Demetevler Oncology
Education and Research Hospital,
Department of Neurosurgery, Ankara,
Turkey

Address: Askin Esen Hasturk, Assoc.
Prof. Oncology Education and Research
Hospital, Department of Neurosurgery,
Ankara, Turkey
Phone: +90 533 7282904
E-mail: aehasturk@yahoo.com
Received: 17th September, 2017.
Accepted: 12th December, 2017.

ABSTRACT

Spontaneous spinal epidural hematomas occur relatively rare in comparison with postoperative spinal epidural hematomas. Usually, patients present themselves with extreme radicular pain, axial pain depending on the level of hematoma, and progressive neurological deficit. Spinal epidural hematoma is a neurosurgical emergency characterized in the spinal epidural space. Whatever the reason is behind the hematomas, for patients with progressive spinal cord compression symptoms, surgical operation is usually preferred.

Key words: Anticoagulant treatment, epidural hematoma, surgical treatment

Level of evidence: Case report, Level IV

INTRODUCTION

Spontaneous spinal epidural hematomas (SEH) is a rare condition, and it usually occurs after spinal surgery with the rate of occurrence being 0.1 – 3 %^(11,15). Most epidural hematomas that occur after spinal surgery are asymptomatic; however, in the rare instance that a spinal epidural hematoma becomes clinically significant, devastating neurologic complications can result. Its symptoms vary. Clinically, SEH has been reported with hemiparesis, paraparesis, and tetraparesis^(1,7,13,18). Meningitis, Gullian Barre, subarachnoid bleeding, and stroke are also in the definitive diagnosis. There are also some risk factors for spinal epidural hematoma after spinal surgery, such as multilevel procedures, preoperative coagulopathy, postoperative coagulopathy, anticoagulation therapy, being older than 60 years of age, preoperative nonsteroidal anti-inflammatory drugs (NSAIDs), Rh-positive blood type, hemoglobin being less than 10 g/L, and surgical blood loss of 1 L or more^(6,8,11,13).

Spontaneous spinal epidural hematomas (SSEH) occur relatively rare in comparison with postoperative spinal epidural hematomas (SEHs). The rate of incidence of SSEH is estimated to be 0.1 patient per

100 000 individuals and it is often seen in patients above the age of 50^(3,6-7).

CASE REPORT

A 50-year-old female patient presented back pain and left leg pain. She had no history of trauma or sciatic leg pain. Upon physical examination, bilateral Laseque test was positive with 60 degrees of elevation, and she demonstrated decrease sensation the S1 dermatome. She was using Coumadin for heart valve disease. After the laboratory test, her INR was 3.6. There was round shaped, cystic and heterogenic lesion pressing on the S1 root that appeared hyper intense on the T1 and T2-weighted lumbar MR images (Figure-1).

We planned the surgical operation and stopped using Coumadin. When INR was under 2, we gave clexane 0.6. When the INR score was 1.5, we decided to start the operation and thus stopped the previous clexane dose. We performed left hemi laminectomy.

Membranous hemorrhagic lesion was removed from the epidural field and sent to the pathology lab. We cleaned the neural tissues and responded to the patient's postop complaints successfully.

We gave Clexane and Coumadin simultaneously after the surgery. When the INR was above 2, we stopped giving the clexane and continued the treatment only with Coumadin and anticoagulants.

Pathology results were reported as the lesion with blood and fibrin elements. In the MRI images after 1 year, the blood was seen to be resorbed (Figure-2).

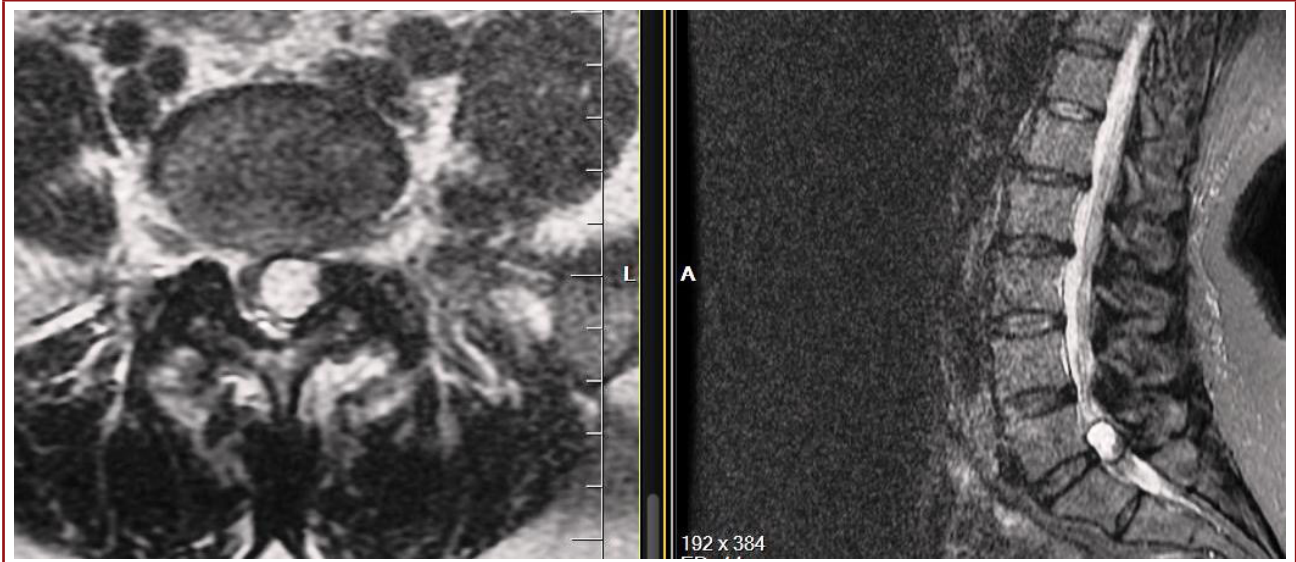


Figure-1. There was round shaped, cystic and heterogenic lesion pressing on the S1 root that appeared hyper intense on the T1 and T2-weighted lumbar MR images.



Figure-2. In the MRI images after 1 year, the blood was seen to be resorbed on lumbar region.

DISCUSSION

Non-traumatic spinal epidural hematomas are extremely rare complications. The first case of SSEH was reported by Jackson in 1869⁽⁸⁾, and there have been numerous reports published in the literature ever since⁽³⁾. Usually, patients present themselves with extreme radicular pain, axial pain depending on the level of hematoma, and progressive neurological deficit^(9,14,16).

The origin of SSEH being venous or arterial is a debated topic⁽¹⁹⁾. Most authors agree that the rupture of the valve less epidural venous system is the bleeding source of hematoma. Congestion that occurs before the ruptures of vein form the basis of the physiopathological mechanism^(4,10,17).

Although the cause of the disease has not exactly been made clear, some researchers have reported that it is the result of venous epidural plexus defects⁽⁵⁾. Beatty and Winston suggests that even the epidural hemorrhages connected to anticoagulation therapy or lumbar puncture could be better conceptualized as arterial hemorrhages^(2,12).

MRI is a useful neuroimaging tool of choice. We can see the correct position of the hematoma, cord compression and spinal cord edema⁽⁵⁾. In the acute phase, findings of MRG are as follows: (a) under variable signal intensity (the hematoma shows as isointense or hyperintense regarding to the spinal cord on the T1 weighted images and as a hypointense signal on the T2 weighted images) (b) covering up the epidural fat (c) adjacent the bone structures and continuity (d) compression of the epidural fat subarachnoid area and spinal cord (e) hematoma is generally localize posterolateral of spinal canal^(3-4,12,14).

Most of the researchers agree that preoperative neurological status is a more important factor than neurological recovery^(2,4,19). Foo and Rossier examine 158 patients with spinal epidural hematomas and describe their surgical treatment results. They find that before the operation motor recovery was present in 63 (92.6 %) of the 68 patients whose preoperative sensory or motor lesions were incomplete, but only in 24 (45.3 %) of the 53 subjects with complete cord lesions⁽⁴⁾.

Whatever the reason is behind the hematomas, for patients with progressive spinal cord compression symptoms, surgical operation is usually preferred^(2,5,7,16). The success of the operation depends on how much time has passed between the beginning of the symptoms and the surgical operation^(3-4,17). The results of the operation are better for the cases where the SSEH is localized in lumbosacral areas than the cases where it is localized in thoracal areas or the cases where hematomas are localized at a vertebra level^(1,3-4). Spinal channel is narrower in thoracic and cervical areas than in lumbar areas. Therefore, the distance where the hematomas will localize is smaller in cervical and thoracal areas than in lumbar areas. Also, because in lumbar areas there is a larger epidural distance for the localized epidural hematomas, in such cases, clinical process is more insidious^(5,17,19). Multilevel thoracic spinal epidural hematoma could be treated with hemilaminectomy and hematoma draining. Total laminectomies, because they could cause additional pressure on the spinal cord, could cause

iatrogenic damage^(8,10-11). If the symptoms are clinically not progressive or if there is an indication of an early recovery, surgery is not found necessary⁽¹²⁾.

Boukobza et al. report 11 spinal epidural cases. Among these, 5 of them are treated with conservative methods. In three of those treated with MRG, hematoma is observed to have disappeared after 6 days, and in 2 of those treated with MRG, after two months^(2,5). Our case gave similar symptoms as to acute beginnings and sciatic-like pain patterns. We first thought of lumbar disk hernia during the diagnosis and assigned the patient an urgent lumbar MRI. MRI images showed that the bulk-like structure that gave the symptom of pressing symptoms is indeed hematoma. Thus, we took the patient immediately to the surgery room.

Based on the information from previous research, we find that the use of anticoagulant could cause SSEH cases, surgical treatment results correlates with the patient's preoperational neurological examination, the duration between the symptom and the treatment is important for surgical success; and conservative ways of treatment could be an option in patients with decreasing symptoms and nonexistent neurological deficits.

REFERENCES

1. Barnes B, Alexander JT, Branch CL Jr. Postoperative level 1 anticoagulation therapy and spinal surgery: practical guidelines for management. *Neurosurg Focus* 2004; 17: E5.
2. Boukobza M, Guichard JP, Boissonet M, George B, Reizine D, Gelbert F, Merland JJ. Spinal epidural haematoma: Report of 11 cases and review of literature. *Neuroradiology* 1994; 36: 456-459.
3. Cakir E, Karaarslan G, Usul H, Baykal S, Kuzeyli K, Mungan I, et al. Clinical course of spontaneous spinal epidural haematoma mimicking Guillain-Barré syndrome in a child: a case report and literature review. *Dev Med Child Neurol* 2004; 46: 838-842.
4. Foo D, Rossier AB. Preoperative neurological status in predicting surgical outcome of spinal epidural hematoma. *Surg Neurol* 1981; 15: 389-401.
5. Fukui MB, Swarnkar AS, Williams RL. Acute spontaneous spinal epidural hematomas. *AJNR Am J Neuroradiol* 1999; 20: 1365-1372.
6. Groen RJ, van Alphen HA. Operative treatment of spontaneous spinal epidural hematomas: a study of the factors determining postoperative outcome. *Neurosurgery* 1996; 39: 494-508.
7. Holtas S, Heiling M, Lonntoft M. Spontaneous spinal epidural hematoma: findings at MR imaging and clinical correlation. *Radiology* 1996; 199: 409-413.
8. Jackson RR. Case of spinal apoplexy. *Lancet* 1869; 2: 5-6.
9. Jumani DB, Littlewood R, Iyer A, Fellows G, Healey A, Abernethy L, Spinty S, Sarginson R, Pettorini B. Spontaneous spinal epidural haematoma mimicking meningitis in a 2-year-old child: a case report and literature review. *Childs Nerv Syst* 2013; 29: 1795-1798.
10. Kasodekar SV, Goldszmidt E, Davies SR. Atypical presentation of an epidural hematoma in a patient receiving aspirin and low molecular weight heparin. Was epidural analgesia the right choice? *J Clin Anesth* 2009; 21(8): 595-598.

-
11. Kebaish KM, Awad JN. Spinal epidural hematoma causing acute cauda equina syndrome. *Neurosurg Focus* 2004; 16: e1.
 12. Kotil K, Akçetin MA, Kuşcuoğlu U, Eras M, Acar C, Bilge T. Spontaneous thoracic spinal epidural hematoma causing paraplegia. *Turk Neurosurg* 2004; 14(1-2): 45-48.
 13. Kou J, Fischgrund J, Biddinger A, Herkowitz H. Risk factors for spinal epidural hematoma after spinal surgery. *Spine* 2002; 27: 1670-1673.
 14. Labeodan OA. Spinal epidural haematoma mimicking spontaneous subarachnoid haemorrhage. *Emerg Med J* 2005; 22: 606-607.
 15. Lawton MT, Porter RW, Heiserman JE, Jacobowitz R, Sonntag VK, Dickman CA. Surgical management of spinal epidural hematoma: relationship between surgical timing and neurological outcome. *J Neurosurg* 1995; 83: 1-7.
 16. Matsumoto H, Miki T, Miyaji Y, Minami H, Masuda A, Tominaga S, Yoshida Y, Yamaura I, Matsumoto S, Natsume S, Yoshida K. Spontaneous spinal epidural hematoma with hemiparesis mimicking acute cerebral infarction: two case reports. *J Spinal Cord Med* 2012; 35: 262-266.
 17. Spanier DE, Stambough JL. Delayed postoperative epidural hematoma formation after heparinization in lumbar spinal surgery. *J Spinal Disord* 2000; 13: 46-49.
 18. Shin JJ, Kuh SU, Cho YE. Surgical management of spontaneous spinal epidural hematoma. *Eur Spine J* 2006; 15(6): 998-1004.
 19. Van Schaeybroeck P, Van Calenbergh F, Van De Werf F, Demaerel P, Goffin J, Plets C. Spontaneous spinal epidural hematoma associated with thrombolysis and anticoagulation therapy: Report of three cases. *Clin Neurol Neurosurg* 1998; 100(4): 283-287.