Case Report

Spontaneous cervical epidural hematoma: A case report and review of literature

Mahmoud M. Taha, Ahmad M. Elsharkawy, Hassan A. Al Menshawy, Amr AlBakry

1Department of Neurosurgery, Zagazig University, Zagazig, 2Department of Neurosurgery, Al Mokatam Insurance Hospital, Cairo, Egypt.

E-mail: *Mahmoud M. Taha - mahmoudlotfy1972@yahoo.co.uk; Ahmad M. Elsharkawy - d.ahmad_elsharkawy@yahoo.com; Hassan A. Al Menshawy - halmenshawy@yahoo.com; Amr AlBakry - amrbakry@live.com

*Corresponding author: Mahmoud M. Taha, Department of Neurosurgery, Zagazig University, Zagazig 44512, Egypt.
mahmoudlotfy1972@yahoo.co.uk

Received: 21 November 19
Accepted: 23 November 19
Published: 13 December 19

DOI: 10.25259/SNI_543_2019

Quick Response Code:

ABSTRACT

Background: Spontaneous cervical epidural hematoma (SCEH) is an uncommon cause of acute spinal cord compression. This is a rare idiopathic condition that leads to acute onset of neurologic deficits, which if not diagnosed early can lead to catastrophic consequences.

Case Description: Here, we report a 41-year-old male, diagnosed with SCEH, with a presenting chief complaint of cervical pain followed by progressive quadriplegia and urgency of micturition who was managed surgically, along with the review of literature.

Conclusion: SCEH is a rare pathologic entity. Due to the high risk of poor neurological outcome without treatment, SCEH should be a diagnostic possibility when the presentation is even slightly suggestive. Prompt surgical evacuation of the hematoma and hemostasis leads to a favorable neurological outcome, whereas delay in treatment can be disastrous.

Keywords: Hemilaminectomy, Neurologic manifestations, Progressive, Spinal cord, Spontaneous cervical epidural hematoma

INTRODUCTION

Spinal epidural hematoma (SEH) is a very rare cause of acute spinal cord compression and is estimated to occur in approximately 0.1% of 100,000 individuals. Spinal epidural hematomas (SEHs) may present with neurological deficits ranging from focal cervical radiculopathy to complete quadriplegia. Magnetic resonance imaging (MRI) is the modality of choice to diagnose SEHs within the first 24 hours of onset. Here, we present a 41-year-old male whose spontaneous cervical epidural hematoma (SCEH) was successfully treated with emergent surgical intervention.

CASE REPORT

This 41-year-old male presented with a 6-day history of acute neck pain radiating into both upper extremities, accompanied by unsteady gait, progressive quadripareis, and urinary urgency. Notably, the patient had a cardiac valve replaced 2 years ago and was on routine anticoagulation. On admission, he was quadriparietal with Grade 2/5 motor function in the right upper and both lower extremities and 3/5 left upper extremity strength. He also had a relative pin level from C5 downward. Laboratory studies showed an initial INR of 3.5, with a platelet...
count of 90,000/mm³ and hemoglobin of 12 mg/dl. The urgent cervical MRI, done within 2 h of admission, showed a right dorsolateral intraspinal mass lesion extending from C5 to T1; the lesion was hyperintense on T1WI (weighted image) and showed heterogeneous isointensity-hypointensity on the T2WI. These findings were consistent with a spontaneous, early, and subacute cervical epidural hematoma [Figures 1–3].

**Surgery**

Evacuation of the hematoma was planned, and the patient preparation was started, 6 units of fresh frozen plasma, 36 units of platelets, 12 preoperative, 12 intraoperative, 12 postoperative, and 2 units of fresh blood were administered to the patient. Within 8 h after the initial MRI, utilizing C-arm guidance, a C5-T1 right hemilaminectomy was preformed allowing for complete hematoma evacuation [Figure 4]. The patient started to improve by the 2nd day, and motor function was 4/5 throughout the upper and lower extremities within the 1st postoperative week. The patient was discharged on postoperative day 14 with full motor power. Two months later, he was completely neurologically intact, including normal sphincter function.

**DISCUSSION**

SCEH is typically attributed to coagulopathies, anticoagulation, disc herniation, vascular malformations, neoplasms, and idiopathic causes.²,¹²,⁶ Typically, the source of bleeding is venous, but a more rapid onset often indicates arterial bleeding. Beatty and Winston postulated that the source of bleeding for spinal epidural hematomas (SEH) was the free anastomotic arteries that

---

**Figure 1:** T1-weighted sagittal magnetic resonance imaging showing hyperintense mass compressing the posterior aspect of the spinal cord.

**Figure 2:** T1-weighted sagittal magnetic resonance imaging showing hyperintense hematoma extending from C5 to T1.

**Figure 3:** T2-weighted sagittal magnetic resonance imaging showing heterogeneously isointense mass compressing the spinal cord.

**Figure 4:** Axial cervical computed tomography images after surgery showing complete hematoma evacuation with the right hemilaminectomy.
run in the epidural space and connect with radicular arteries.\cite{3} Further, since 90% of SCEH are located in the C6-C7 region, a highly mobile segment of the cervical spine, they believe that certain movements at this level might stretch the free arteries beyond their limits of tolerance, causing rupture.

**MRI of SEH**

MRI is the diagnostic study of choice for SCEH.\cite{11,13} It typically shows biconvex hematomas in the epidural space with well-defined borders tapering superiorly and inferiorly.\cite{7,4} In addition, subacute hematomas show characteristic high signal intensity on T1-weighted images.\cite{7}

**Neurological presentation**

Although few cases of SCEH present with mild neurological symptoms, many exhibit frank quadriplegia that should be rapidly diagnosed and treated to avoid permanent residual neurological deficits.\cite{11,10,14,5} Groen and Ponsen reported similar results significantly better outcomes for patients with complete neurologic deficits who underwent decompression within 36 h of symptom onset; for those with incomplete deficits, decompression was successful if performed within 48 h of presentation.\cite{9} The patient presented bled due to anticoagulation, but due to timely intervention did well without any residual neurological sequelae.\cite{8}

**CONCLUSION**

SCEH is a rare disorder. Early diagnosis with MRI and hematoma evacuation within 24 h of symptom onset is critical to maximize recovery.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**

1. Anderson TJ, Donaldson IM. Spontaneous resolution of cervical spinal epidural haematoma. Postgrad Med J 1989;65:448-90.
2. Baek BS, Hur JW, Kwon KY, Lee HK. Spontaneous spinal epidural hematoma. J Korean Neurosurg Soc 2008;44:40-2.
3. Beatty RM, Winston KR. Spontaneous cervical epidural hematoma. A consideration of etiology. J Neurosurg 1984;61:143-8.
4. Bruyn GW, Bosma NJ. Spinal extradural haematoma. In: Vinken PJ, Bruyn GW, editors. Handbook of Clinical Neurology. Vol. 26. Amsterdam: Holland Publishing Company; 1976. p. 1-30.
5. CaiHX, Liu C, Zhang JF, Wan SL, Uchida K, Fan SW. Spontaneous epidural hematoma of thoracic spine presenting as Brown-Séquard syndrome: Report of a case with review of the literature. J Spinal Cord Med 2011;34:432-6.
6. Choi JH, Kim JS, Lee SH. Cervical spinal epidural hematoma following cervical posterior laminoforaminotomy. J Korean Neurosurg Soc 2013;53:125-8.
7. Fujiwara H, Oki K, Momoshima S, Kuribayashi S. PROPELLER diffusion-weighted magnetic resonance imaging of acute spinal epidural hematoma. Acta Radiol 2005;46:539-42.
8. Groen R. Non-operative treatment of spontaneous spinal epidural haematomas: A review of the literature and a comparison with operative cases. Acta Neurochir (Wien) 2004;146:103-10.
9. Groen RJ, Ponsen H. The spontaneous spinal epidural haematoma: A study of the etiology. J Neurol Sci 1990;98:121-38.
10. Halim TA, Nigam V, Tandon V, Chhabra HS. Spontaneous cervical epidural hematoma associated with oral anticoagulant therapy. Clin Appl Thromb Hemost 2001;7:166-8.
11. Matsumura A, Namikawa T, Hashimoto R, Okamoto T, Yanagida I, Hoshi M, et al. Chronic nontraumatic spinal epidural hematoma of the lumbar spine: MRI diagnosis. Eur Radiol 2000;10:1602-5.
12. Pope JV, Edlow JA. Avoiding misdiagnosis in patients with neurological emergencies. Emerg Med Int 2012;2012:949275.
13. Song KJ, Lee KB. The poor outcome of the delayed diagnosis of acute spontaneous spinal epidural hematoma: Two cases report. J Korean Med Sci 2005;20:331-4.
14. Vayá A, Resurrección M, Ricart JM, Ortúñoh C, Ripoll F, Mira Y, et al. Spontaneous cervical epidural hematoma associated with oral anticoagulant therapy. Clin Appl Thromb Hemost 2001;7:166-8.
15. Vázquez-Barquero A, Abascal F, García-Valtuille R, Pinto JL, Figols FJ, CerezáL. Chronic nontraumatic spinal epidural hematoma of the lumbar spine: MRI diagnosis. Eur Radiol 2000;10:1602-5.

How to cite this article: Taha MM, Elsharkawy AM, Al Menshawy HA, Albakry A. Spontaneous cervical epidural hematoma: A case report and review of literature. Surg Neurol Int 2019;10:247.