



Case Report

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

Mahmoud M. Taha¹, Ahmad M. Elsharkawy¹, Hassan A. Al Menshawy², Amr AlBakry¹

¹Department of Neurosurgery, Zagazig University, Zagazig, ²Department of Neurosurgery, Al Mokattam 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

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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 quadriparesis 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.^[2] In the cervical spine, patients can present with neurological deficits ranging from focal cervical radiculopathy to complete quadriplegia.^[9] Magnetic resonance imaging (MRI) is the modality of choice to diagnose SEAs within the first 24 h of onset.^[15] 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 quadriparesis, and urinary urgency. Notably, the patient had a cardiac valve replaced 2 years ago and was on routine anticoagulation. On admission, he was quadriparetic 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

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count of $90.000/\text{mm}^3$ 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 performed 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.

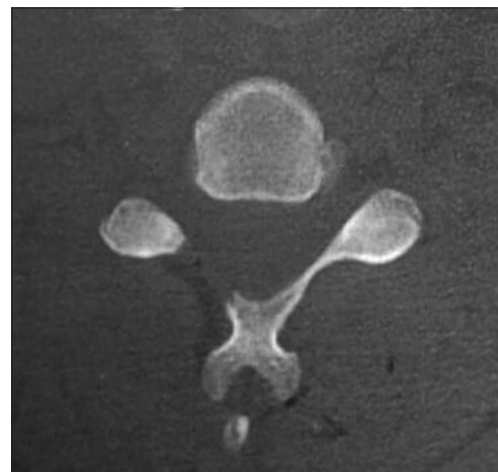


Figure 4: Axial cervical computed tomography images after surgery showing complete hematoma evacuation with the right hemilaminectomy.

run in the epidural space and connect with radicular arteries.^[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.^[11,13] It typically shows biconvex hematomas in the epidural space with well-defined borders tapering superiorly and inferiorly.^[7,4] In addition, subacute hematomas show characteristic high signal intensity on T1-weighted images.^[7]

Neurological presentation

Although few cases of SCEH present with mild neurological symptoms, many exhibit frank quadriplegia/quadriparesis that should be rapidly diagnosed and treated to avoid permanent residual neurological deficits.^[1,10,14,5] 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.^[9] The patient presented bled due to anticoagulation, but due to timely intervention did well without any residual neurological sequelae.^[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.

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Conflicts of interest

There are no conflicts of interest.

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