

## Acute spontaneous cervical spinal posterior epidural hematoma in a young adult patient

Sir,

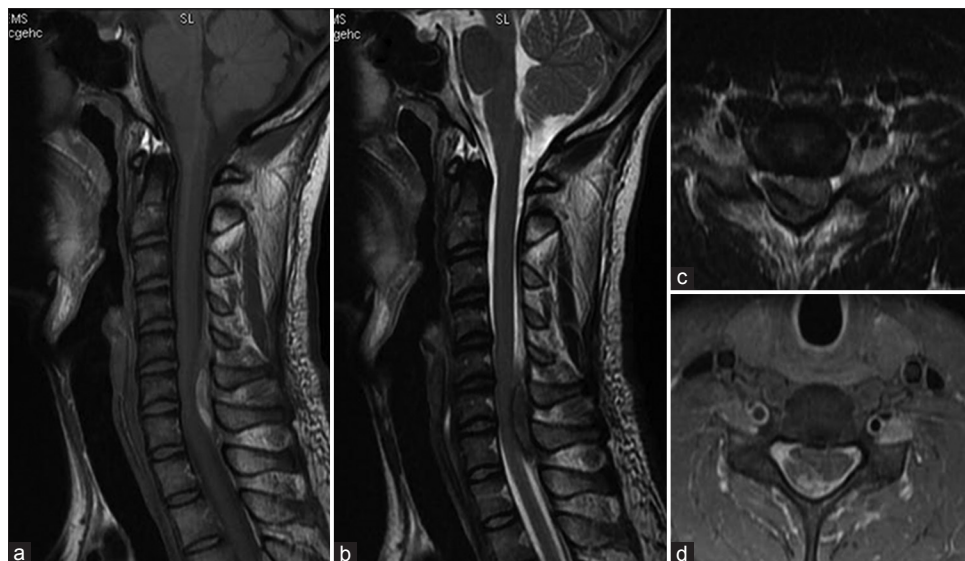
A 30-year-old-male patient was admitted in Neurosurgery Department with the complaint of acute onset of pain in the lower part of neck radiating to the right side limbs and inability to walk unaided while waking up in the morning for 2 days. There was no recent history of trauma or exertion. He was non-alcoholic and non-smoker. No history of hypertension, tuberculosis, bleeding disorder, collagen vascular disease, chronic drug intake or any chronic illness was found. Power was grade 3/5 and 2/5 in right upper and lower limbs respectively. Right hand grip was weak with brisk tendon jerk in the right side limbs. Right side plantar reflex was extensor. He had sensory loss below T4 levels more on the right side with no bladder and bowel disturbances. Hematological parameter and coagulation profiles were normal. Clinical diagnosis of cervical myelopathy was made.

Computed axial tomography scan of head shows normal study. Contrast enhanced magnetic resonance imaging of the cervical spine shows about 20 mm × 8 mm size, T1 hyperintense, T2 iso to hypointense epidural non-enhancing lesion at C6 and C7 vertebral levels on right posterolateral aspect causing compression of spinal cord at C6 and C7 level with no altered cord signal. The radiological diagnosis was right postero

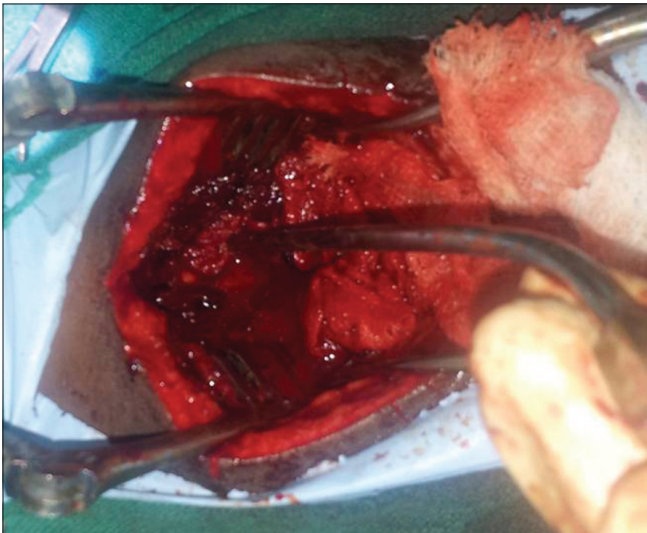
lateral early sub-acute epidural hematoma in the cervical spine with spinal cord compression at C6 and C7 [Figure 1]. Patient was poor and could not afford for spinal angiogram study.

Cervical laminectomy was done from C4 to C7 level. About 15 g of solid blood clot was evacuated beneath the ligamentum flavum [Figure 2]. No vascular malformation or tumor was seen. Pathological examination of the clot reveals no malignant cells or vascular malformation. The term “spontaneous” has been named here as no precipitating factor or etiology could be identified after investigation and operation. The patient showed gradual improvement of symptoms by 7<sup>th</sup> post-operative day and was asymptomatic after 3 weeks of follow-up.

Spontaneous spinal epidural hematoma (SSEH) occurs in 0.1 patients per 100,000 individuals.<sup>[1]</sup> It has bimodal age distribution with age peak at 15-20 and 65-70 and male predominance. SSEH occurs frequently at C6 and D12 level.<sup>[2-4]</sup> Anticoagulant therapy for prosthetic valve,<sup>[5]</sup> thrombolytic therapy for myocardial infarction,<sup>[6]</sup> end stage renal disease on hemodialysis,<sup>[7]</sup> congenital disease with factor deficiency (factor XI deficiency, hemophilia-B)<sup>[8]</sup> and pregnancy have been described in literature as common precipitating factors. In about 40-50% of cases, no underlying cause could be identified.<sup>[9]</sup>



**Figure 1:** Right postero lateral cervical spinal epidural hematoma with spinal cord compression is seen at C6 and C7 vertebral levels which shows T1 hyperintense signal (a), T2 iso to hypointense signal (b and c) and no significant post-contrast enhancement (d)



**Figure 2:** Intra-operative photograph shows solid blood clot in posterior epidural space after laminectomy

Patient with SSEH presents commonly with acute onset of neck/back pain radiating to corresponding dermatome and variable motor/sensory deficit depending upon the nerve root or spinal cord compression by epidural hematoma. Patient may have bowel and bladder involvement.<sup>[10]</sup>

Most of the articles describe venous etiology for SSEH due to lack of valve in epidural venous plexuses, which ruptures and bleeds in response to a sudden increase of abdominal and thoracic pressures.

Multiplanar magnetic resonance imaging (MRI) study of the spine is the modality of choice for evaluation of the vertebral column, thecal sac and spinal cord.

SSEH is considered as neurosurgical emergency and requires rapid decompression and evacuation of hematoma as definite treatment in most of the cases.<sup>[11]</sup> Dorsal SSEH usually managed by laminectomy with clot removal while ventral epidural hematoma may require anterior corpectomy, hematoma evacuation and fusion.<sup>[12]</sup> Approximately, post-operative mortality rate of SSEH is around 3-6%.<sup>[13]</sup> The prognosis of SSEH depends on the size, location of hematoma, severity of pre-operative neurological deficit and time interval between the onset of symptoms and surgery. The likelihood of recovery improved significantly when operations were performed within 36 and 48 h in SSEH patients with complete and incomplete deficits respectively.<sup>[12]</sup> In our case, the patient was operated after 60 h of onset of symptoms and gradually recovered after 3 weeks.

In summary, symptomatic cervical epidural hematoma

is to be treated as neurosurgical emergency. Multiplanar MRI study of the spine is the investigation of choice. The precipitating factors and etiology are to be determined and managed accordingly.

G. S. Sarangi, Ranjan Kumar Sahoo<sup>1</sup>,  
Sureswar Mohanty

Departments of Neurosurgery and  
<sup>1</sup>Radiodiagnosis, Institute of Medical Science and SUM Hospital,  
Ghatikia, Bhubaneswar, Odisha, India.  
E-mail: dardierdardier@gmail.com

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