Complete Motor Recovery after Acute Paraplegia caused by Spontaneous Cervicodorsal Epidural Hematoma

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ABSTRACT

Spontaneous spinal epidural hematoma (SSEH) is a rare entity. The incidence of SSEH has been estimated at 0.1 patients per 100,000 individuals and represents less than 1% of spinal space-occupying lesions. Here we are presenting a case of 65 year old female patient, who presented with sudden onset of backache followed by weakness of both lower limbs, associated with bladder and bowel incontinence. Patient was subjected to MRI spine which shows extradural space occupying lesion seen in posterior spinal epidural space extending from C6-D4 level compressing the cord. Possible causes of an Acute Paraplegia like AVM bleed, coagulopathies, hemangioma, transverse myelitis, multiple sclerosis were ruled out by relevant investigations. Patient was subjected to surgical evacuation of hematoma after 72 hours of presentation. Postoperative period was uneventful. Physiotherapy was started in immediate post operative period. Sensations improved. Motor weakness also improved from Grade 0 to Grade V in lower limbs. Patient recovered completely during the hospital stay and regained bladder bowel control.

Keywords: SSEH, epidural hematoma, paraplegia, cervico-dorsal

INTRODUCTION

Spontaneous spinal epidural hematoma (SSEH) is an uncommon cause of spinal cord compression usually producing severe neurological deficit. Complete neurological recovery is possible with early diagnosis and prompt surgery while delay in the treatment of this condition causes permanent neurological deficit or incomplete recovery. MRI screening of spine helps in early and accurate diagnosis of the condition. Our purpose is to report a case of SSEH in 65 year-old lady with complete neurological recovery after surgical intervention, and to discuss the diagnosis and management of SSEH. Soft hematoma, absence of cord edema might have helped a complete neurological recovery in this case.

CASE REPORT

A 65 year old female patient was admitted in medical ward with history of sudden backache followed by weakness of both lower limbs associated with bladder and bowel incontinence of 1 day duration with no significant past history. Not a known hypertensive or diabetic, no history of fever and trauma. CNS examination showed normal upper limbs. Sensory loss below the level of umbilicus. Motor system showed 0/5 power in all groups of muscles in both lower limbs. Hypotonia was noted in both lower limbs. Plantars not elicitable. Examination of spine was normal.

On investigation complete blood count, kidney function test, liver function test, serum electrolytes and coagulation profile were in normal limits. ESR were raised 70 mm 1st hour. Patient was subjected to MRI spine that revealed a lesion which is T1 isointense to hyperintense, T2 hypointense in the posterior epidudal space extending from C6-D4 levels. On the basis of these findings a diagnosis of Cervico-dorsal spinal epidural hematoma was made.
Patient was operated immediately C6 to D2 Laminectomy was done. Hematoma was soft and resolving and sent for histopathological examination. Immediately after surgery patient started improving neurologically. By the end of 1 week power in lower limb was 4/5. Patient started walking and she regained bladder and bowel control before discharge from the hospital.

DISCUSSION

A spinal epidural hematoma is a rare but significant neurological condition. The spontaneous development of spinal epidural hematomas is most frequent after the fourth or fifth decade\(^{[5]}\). However, it has been reported to occur in all age groups, and it is a very rare clinical entity in 211 children. Only 30 pediatric cases of SSEH have been documented in the medical literature\(^{[2,3]}\). The male/female ratio is 1.4:1\(^{[4]}\). Certain precipitating factors, including anticoagulant therapy for prosthetic cardiac valves, therapeutic thrombolysis for acute myocardial infarction, hemophilia B, factor XI deficiency, long-term aspirin/clopidogrel usage as a platelet aggregation inhibitor, and vascular malformation, are suggested to be correlated with spontaneous spinal epidural hematomas\(^{[5,6]}\). It is also a rare occurrence during pregnancy, with only six cases reported in the literature. Statistically, idiopathic cases account for approximate 40% of all cases. The most common site of a spontaneous spinal epidural hematoma is the cervicodorsal region or dorsolumbar region\(^{[8,9]}\).

Up to now, there have been disputes about the origin of these hematomas. Most researchers assert that SSEHs arise from the epidural venous plexus in the spinal epidural space because it lacks venous valves, and undulating epidural hematoma is sudden stabbing neck or back pain that progresses toward paraparesis or quadriplegia, depending on the level of the lesion and the nerve root\(^{[10]}\). Children often suffer from additional symptoms of irritability, and occasional urinary retention. In high cervical region, SSEHs could cause spinal shock, leading to fatal condition\(^{[11]}\).

Currently, MRI is considered as the first choice diagnostic method for SSEH. It typically shows biconvex hematomas in the epidural space with well defined borders tapering superiorly and inferiorly. Subacute hematomas show characteristic high signal intensity on TI-weighted images.

The differential diagnosis of spontaneous spinal epidural hematoma includes an acute herniated intervertebral disc, acute ischemia of the spinal cord, epidural tumor or abscess, spondylitis, transverse myelitis, or even a dissecting aortic aneurysm and acute myocardial infarction.
Early surgical intervention is the general treatment for spontaneous spinal epidural hematomas. The procedure includes decompressive laminectomy and hematoma removal. In cases with incomplete neurological deficits, the operation should be performed within 48 hours of the onset of the initial symptoms\cite{7}. If the initial neurological deficits are complete, the operation should be performed within 36 hours\cite{7}. Conservative treatment has also been documented, and it was employed only when neurological deficits improved in the early phase or with the coexistence of coagulopathy. Multilevel acute epidural hematomas may be difficult to treat operatively in patients with coagulopathy. Although the functional recovery of these patients may not be complete, the SSEH can be treated without surgery, and the patient should be protected from the significant risk of surgical intervention.

Prognosis of the patient with SSEH depends on many factors; severity of the neurologic deficit on admission, interval from onset of initial symptom to surgery, nature and extent of the clot and amount of cord edema.

CONCLUSION

SSEH is a rare neurosurgical entity. Early diagnosis and prompt surgery followed by active and early physiotherapy are crucial to achieve the best neurological outcome. Delay in the diagnosis and treatment may cause permanent neurologic deficit.

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REFERENCES