Spontaneous Spinal Epidural Haematoma with Spontaneous Resolution Demonstrated by Magnetic Resonance Imaging: Case Report

M. AKİF BAYAR, CEVDET GÖKÇEK, ATİLA GÖKÇEK, ERCÜMENT GÖKÇAY

Ministry of Health, Ankara Hospital, Neurosurgery (MAB, CG, EG) and Radiology (AG) Departments, Ankara, Türkiye

Abstract: The source of bleeding in spontaneous spinal epidural haematoma has never been clear, but has been assumed to be venous. We report the seventh case of spontaneous spinal epidural haematoma with spontaneous resolution, which was demonstrated by magnetic resonance imaging.

Key words: Spinal epidural haematoma, magnetic resonance imaging

INTRODUCTION

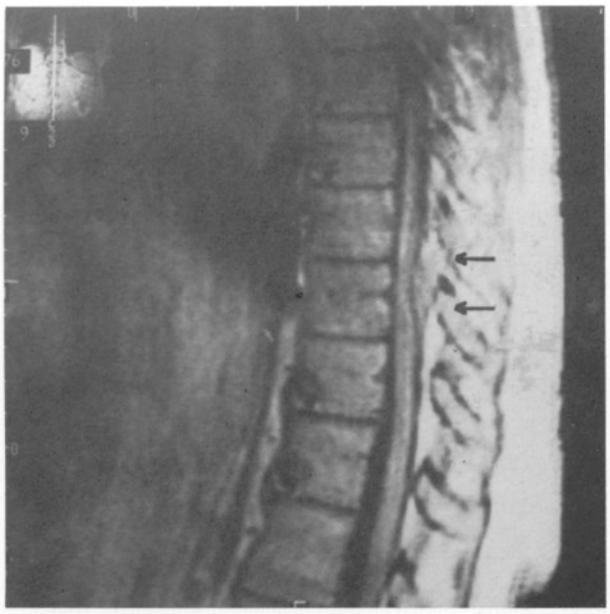
Spontaneous spinal epidural haematoma (SEH) is a rare condition, the cause of bleeding is still unknown (9). The clinical presentation is remarkably uniform, beginning with local and radicular pain followed by sensory changes and finally motor weakness or paralysis (2, 6, 13, 15, 17). This symptom complex may evolve in an hour or may take weeks or months (6-8, 17). With surgical treatment, the majority of these patients are markedly improved or cured (2, 6-8, 10). Only six cases of spontaneous recovery from spontaneous SEH have been reported in the English literature (3, 5, 11, 12, 18, 19). In this paper, we report a seventh case of spontaneous SEH with spontaneous recovery, which was demonstrated by magnetic resonance imaging (MRI).

CASE REPORT

A 58-year-old woman developed severe back pain of sudden onset while sitting, radiating down to the right leg and associated with bilateral parasthesiae. Six hours later she was admitted to hospital.

There was no history of hypertension, metabolic or haematological disorders or recent trauma and she was not taking anticoagulants.

Examination: Motor function and tendon reflexes were normal and no pathological reflexes were present. There was disturbance of touch sensation below the level of Th9. She had no bowel or bladder symptoms. Blood pressure was 140/80 mm Hg. Laboratory values, including haemostasis and blood coagulation time, were all within normal limits. The initial diagnosis was acute low back pain accompanied by intervertebral disc herniation. Ten hours following the onset of symptoms, MRI was carried out. T1-weighted sagittal and axial MR images demonstrated an isointense mass lesion in the Th 9-Th 10 region in the posterior epidural space, predominantly on the right side. The spinal subarachnoid space was obliterated by the epidural mass (Fig. 1 a,b). In this period analgesics and bed rest was started and 48 hours later, the patient had achieved complete recovery of strength and resolution of pain. After three days there was no neurological deficit. At the second MRI performed after fifteen days, no abnormal signal was observed on T1-weighted sagittal and axial (pre and post contrast) images (Fig 2 a,b). Also, there was no abnormal sign on the non-selective and selective spinal angiogram between Th 9 and L1 (Fig 3 a,b).



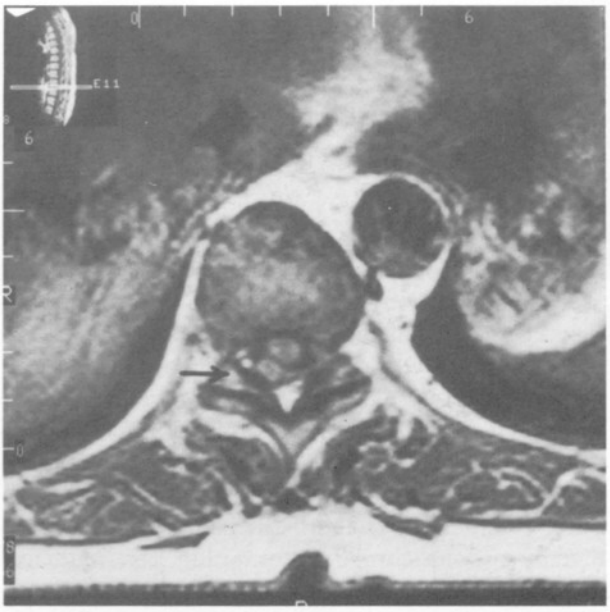
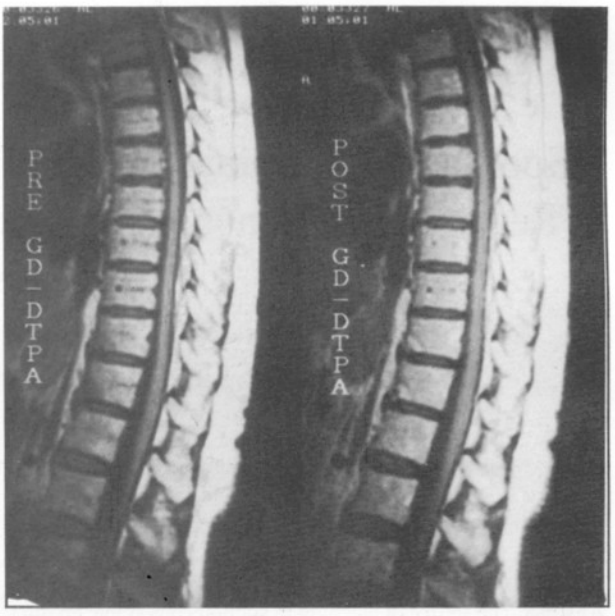


Fig. 1 a,b: Sagittal (a) and Axial (b) T1-weighted magnetic resonance images. An isointense postero-lateral extradural mass obliterating the subarachnoid space is seen extending from Th 9 to Th 10 (arrows).



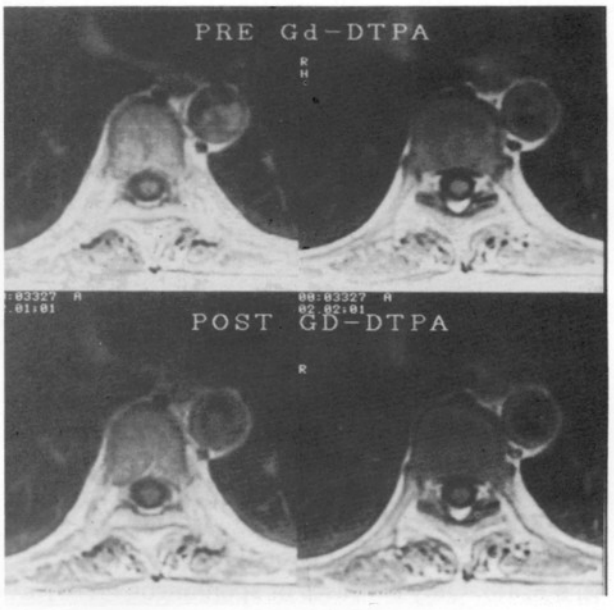


Fig. 2 a,b: Sagittal (a) and axial (b) T1- weighted (pre and post-contrast) magnetic resonance images (fifteen days later). No abnormal signal was observed.

Twenty days after admission, the patient was discharged with normal neurological status and at the 1-month follow up, had returned normal routine house-work and had no pain or paresthesia.

DISCUSSION

Spontaneous SEHs are rarely seen in clinical practice and generally occur in adults males. They are most frequently located in the lower cervical or thoracolumbar regions (2, 9). We have defined the term "spontaneous" as meaning without identified "aetiology". This definition excludes haemorrhage caused by coagulopathy, neoplasia, AVM, trauma or postoperative complications, and also patients who have received anticoagulation therapy. In our case we could find none of these reasons for SEH.

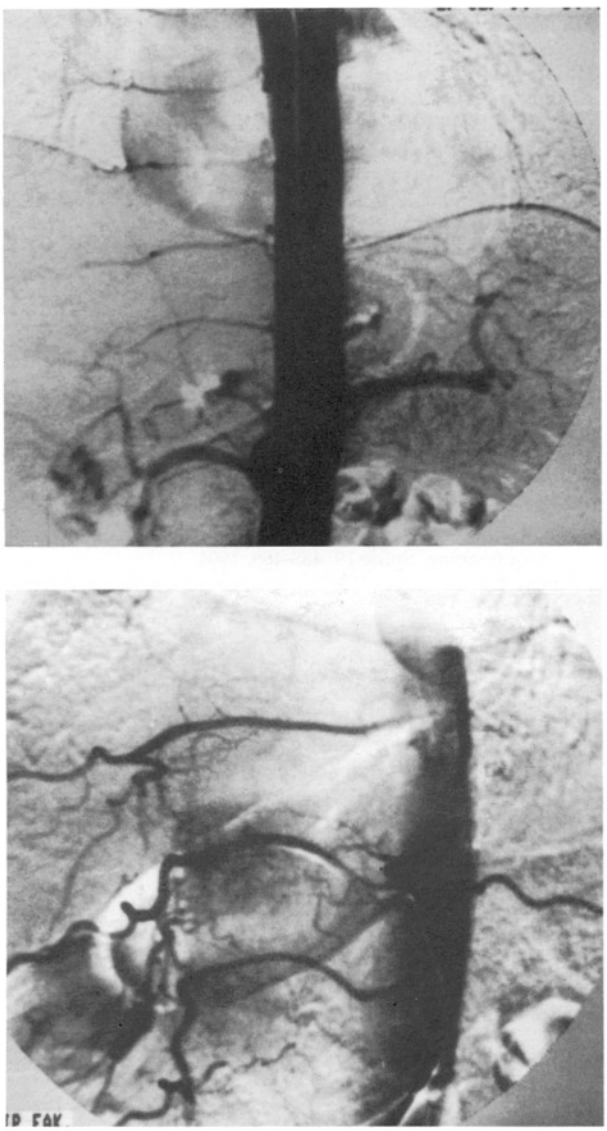


Fig. 3 a,b: Non selective (a) and selective (b) spinal angiogram. No abnormal sign was observed

The most frequent presentation of spontaneous SEH is severe acute pain, often in a dermatomal distribution. In rapid order, sensory then motor deficits develop, related to the particular level of cord or cauda equina compression: paraplegia, quadriplegia or death may result (2, 17). Less commonly, the symptoms develop slowly, with a relapsing, progressive course (4, 14). In our case, there was only severe back pain and sensorial disturbance. In the follow-up period with complete recovery of strength and resolution of pain. The differential diagnosis of these haematomas may include intervertebral disc herniation, epidural abscess or neoplasm, transverse myelitis and cord infarct (3).

In this condition, early diagnosis and prompt surgical treatment, i.e., laminectomy and evacuation of the haematoma, are essential. Spontaneous recovery from SEH is extremely rare. In the six cases reported the causes of SEH were anticoagulants, hypertension and haemophilia (3, 5, 11, 12, 18, 19). In our case, there was no identifiable cause of the haematoma.

In the past, when an acute spinal cord compression was suspected, myelography was the classic assessment of choice an extradural defect could be identified, but no information about the nature of the lesion was given (1, 9).

More recently, computed tomography scan allowed more precise localization and better definition of the nature of the lesion (8).

Today, MRI allows a non-invasive view of the exact location, extent, size, nature and probable aetiology of spinal lesions. Characterisation of haematoma by MRI is well described: an isointense signal on T1-weighted images with high intensity or inhomogeneity on T2-weighted images is highly suggestive of haematoma (1). As MRI allows the staging of the haematoma through the well-known time- related changes of the magnetic resonance signal pattern, should be the main diagnostic procedure for SEH. Spinal angiography has also been recommended because the angiogram could delineate an underlying vascular anomaly, making surgical planning much easier (16).

Our case had a rare course for a spontaneous SEH in terms of spontaneous recovery and this raises the question whether SEH should be treated surgically or non-surgically. The most important factor influencing the surgical result is the preoperative sensory or motor impairment of the patient.

In conclusion MRI should be the assessment of choice in acute compressive syndromes of the spinal cord. Surgery is the only treatment for most spontaneous SEH cases. Conservative management is justified only limited cases, when neurological signs are mild or absent and no progression occurs.

Correspondence : M. Akif BAYAR
Gençlik Caddesi, Döngel Sokak, No- 12/6
Maltepe, Ankara, Türkiye

REFERENCES

1. Avrahami E, Tadmor R, Ram Z. MR demonstration of spontaneous acute epidural hematoma of the thoracic spine. Case report. Neuroradiology 31: 89-92, 1989
2. Beatty RM, Winston KR. Spontaneous cervical epidural hematoma. J Neurosurg 61:143-148, 1984
3. Bernsen PLJA, Haan J,Vielvoye GJ. Spinal epidural hematoma

visualised by magnetic resonance imaging. Neuroradiology 30: 280-283, 1988
4. Body HR, Pear BL. Chronic spontaneous spinal epidural hematoma: Report of two cases. J Neurosurg; 36: 239-242, 1972
5. Brawn LA, Bergval UEG, Davies-Jones GAB. Spontaneous spinal epidural haematoma with spontaneous resolition. Postgrad Med J 62: 885-887, 1986
6. Cooper DW. Spontaneous spinal epidural hematoma: Case report. J Neurosurg 26:343-345, 1967
7. Dawson BH. Paraplegia due to spinal epidural haematoma. J Neurol Neurosurg Psychiatry 26: 171-173, 1963
8. Emery DJ, Cochrane DD. Spontaneous remission of paralysis due to spinal extradural hematoma: Case report. Neurosurgery 23: 762- 764, 1988
9. Foo D, Rossier AB. Preoperative neurological status in predicting surgical outcome of spinal epidural hematomas. Surg Neurol 15: 389-401, 1981
10. Galzio RJ, Zenobii M, D'Ecclesia G. Spontanous spinal epidural hematoma: Report of a case with complete recovery. Surg Neurol 14: 263-265,1980
11. Harik SI, Raichle ME, Reis DJ. Spontaneously remitting spinal epidural hematoma in a patient on anticoagulants. N Engl Med; 284: 1355-1357, 1971
12. Hernandez D, Vinuela F, Feasby TE. Recurent paraplegia with total recovery from spontaneous epidural hematoma. Ann Neurol 11: 623-624, 1982
13. Lougheed WM., Hoffman HJ. Spontaneous spinal extradural hematoma. Neurology 10:1059-1063, 1960
14. Lowrey JJ. Spinal epidural hematomas. Experiences with three patient. J Neurosurg 16: 508-513, 1959
15. Markham JW, Lynge HN, Stahlman EB. The syndrome of spontaneous spinal epidural hematoma: Report of three cases. J Neurosurg 26: 334-342, 1967
16. Olivero WC, Hanigan WC, Mc Cluney KW. Angiographic demonstration of a spinal epidural arteriovenous malformation: Case report. J Neurosurg 72: 119-120, 1993
17. Packer NP, Cummins BH. Spontaneous epidural haemorrhage: A surgical emergency. Lancet 1: 356-358, 1978
18. Priest WM,. Epidural haemorrhage due to haemophilia. Lancet 2: 1289-1291, 1935
19. Saito S, Katsube H, Kobayashi Y. Spinal epidural hematoma with spontaneous recovery demonstrated by magnetic resonance imaging. Spine 19: 483-486, 1994