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CASE REPORT

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Pure cervical radiculopathy due to spontaneous spinal epidural haematoma (SSEH): report of a case solved conservatively

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Abstract *Introduction*: Spontaneous spinal epidural haematoma (SSEH) is widely recognised throughout the literature as a cause of myelopathy, radicular compression being very rarely reported. Surgical management is almost always recommended, especially in the cases of spinal cord compression. Conservative treatment is reported as a curiosity and only in the case of spontaneous improvement. This report presents the particular case of a 64-year-old patient undergoing anticoagulant therapy that had a cervical radiculopathy due to a SSEH confirmed by MRI. The patient improved spontaneously and symptoms were solved with unconventional conservative treatment and without stopping the anticoagulant therapy. *Conclusions*: Spontaneous epidural haematoma must be kept in mind when patients undergoing anticoagulant therapy have a sudden onset of cervicobrachialgia. Even though most spinal surgeons advocate surgical treatment, a conservative approach may lead to a complete recovery and may be considered as a good option in the case of radicular involvement. Discontinuation of the anticoagulant therapy may not always be needed, especially when the clinical syndrome improves spontaneously.

Keywords Spontaneous spinal epidural hematoma · Cervicobrachialgia · Anticoagulant therapy · Conservative treatment

Introduction

Although spontaneous spinal epidural haematoma (SSEH) is a low incidence condition, it is widely recognised throughout the literature as a cause of myelopathy [5, 15]. The relationship between SSEH and anticoagulant therapy is well known and the probable cause of bleeding is thought to be the rupture of the venous epidural plexus during a sudden elevation of thoracic or abdominal pressure [4, 6, 8, 10, 11, 13, 15].

The most common symptoms are cervical or thoracic pain followed by cord compression signs. Radicular involvement is very rare and, when it appears, it mostly affects the lumbar spine, producing ciatalgia [1, 3, 11]. Although the currently suggested approach is an urgent surgical decompression [9, 10], conservative treatment is recommended when there is an objective improvement of the neurological status [2, 11, 12]. In general, anticoagulation treatment must be suspended or adjusted before surgery.

The originality of this report arises in three points:The case involved the cervical spine producing simple radiculopathy.It was solved spontaneously.Anticoagulation therapy was not discontinued.

Case report

A 64-year-old white man undergoing anticoagulant therapy because of cardiac valve prosthesis arrived at the emergency room of our Hospital suffering from a sudden onset of cervical pain and a left C5 brachial pain

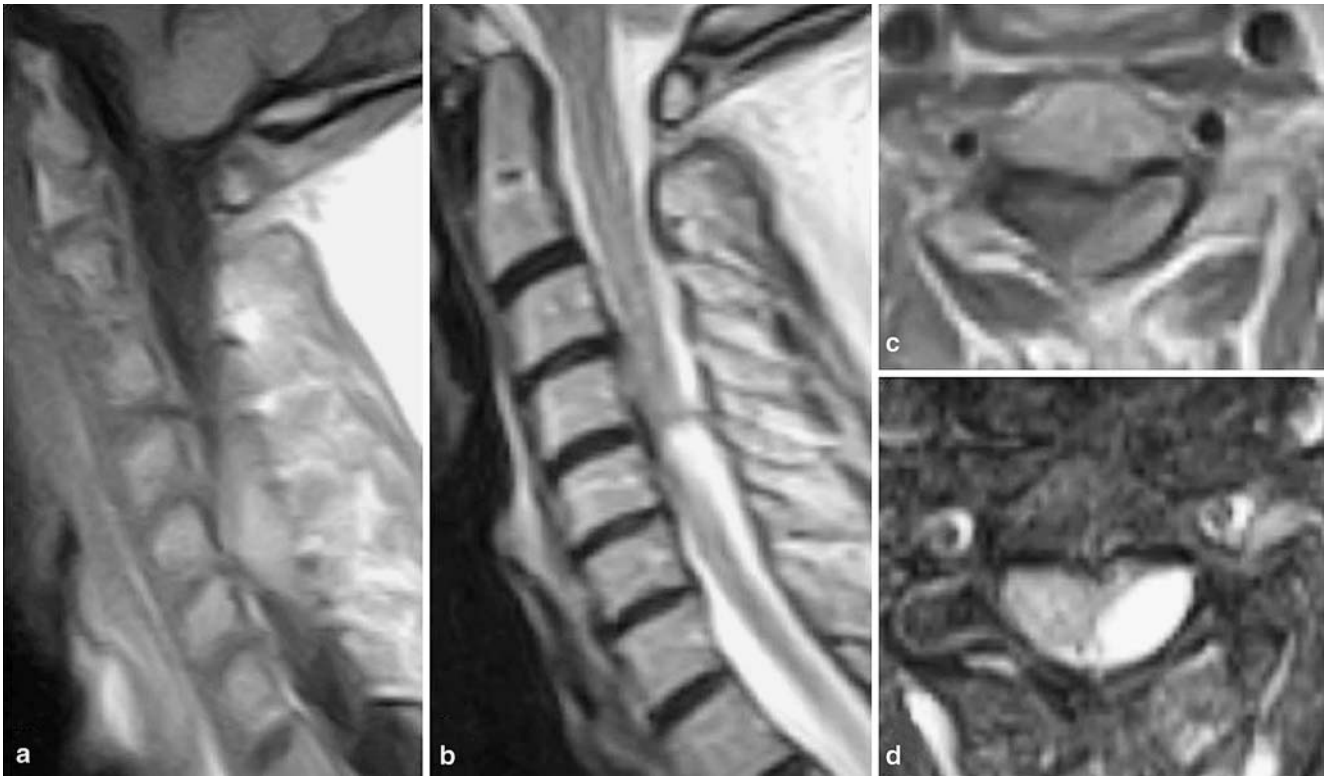

Fig. 1 MRI 2 days after the onset of symptoms. Posterolateral placement of the haematoma at C4–C5 level. **a**, **c** Isointense appearance of the haematoma on the MRI T1-weighted sagittal and axial images. **b**, **d** Hyperintense appearance of the haematoma on the MRI T2-weighted sagittal and axial images

and weakness. The physical exam revealed a 4/5 deltoid weakness and abolition of the bicipital reflex. The patient showed no signs or symptoms of cord compression. Standard radiographs of the cervical spine were normal.

Based on the suspicion that it was a case of disc herniation with left C5 root involvement, symptomatic treatment by means of non-steroid anti-inflammatory drugs and painkillers was indicated. A cervical MRI was scheduled and the patient was invited to undergo further examination at the Spinal Surgery Unit. Owing to the fact that the first physician was not a spinal surgeon and therefore not aware of the relationship between anticoagulation and SSEH, discontinuation of anticoagulant therapy was not indicated. Two days later, when the patient was examined by the Spinal Surgery Unit, the pain had been completely relieved and the weakness had also decreased. The MRI revealed a left posterolateral ovoid mass compatible with a haematoma extending from C4 to C5 (Fig. 1). Symptomatic medical treatment was interrupted. Once the specialist knew the real cause of the radicular syndrome, the haematologist was consulted and they preferred not to suspend the anticoagulant therapy (despite an adequate level of anticoagulation, INR 2,7) in order to prevent thromboembolism.

Seven days later, the patient was free of weakness and the MRI showed a decrease in the haematoma size (Fig. 2). Successive MRI results were obtained 1 month (Fig. 3) and 1 year later on (Fig. 4) to document the resolution of the haematoma. One year on, the patient remains asymptomatic.

Discussion

Radicular compression due to SSEH is far less frequent than myelopathy. Groen and Van Alphen [6] reported that 4.5% of a series of 320 SSEH cases treated surgically presented radiculopathy; all cases affecting the lumbar spine. Recently, Groen [7] reported that 9% of a series of 64 SSEH cases treated conservatively presented an isolated radicular compromise; only one of his cases was located on the cervico–thoracic spine. Our case adds little in terms of number but the fact that it may be the only report of its kind on purely cervical radiculopathy due to SSEH, which may be considered anecdotic, as well as interesting.

Although the spreading of the haematoma throughout the epidural space is the most likely hypothesis proposed for spontaneous recovery in case of

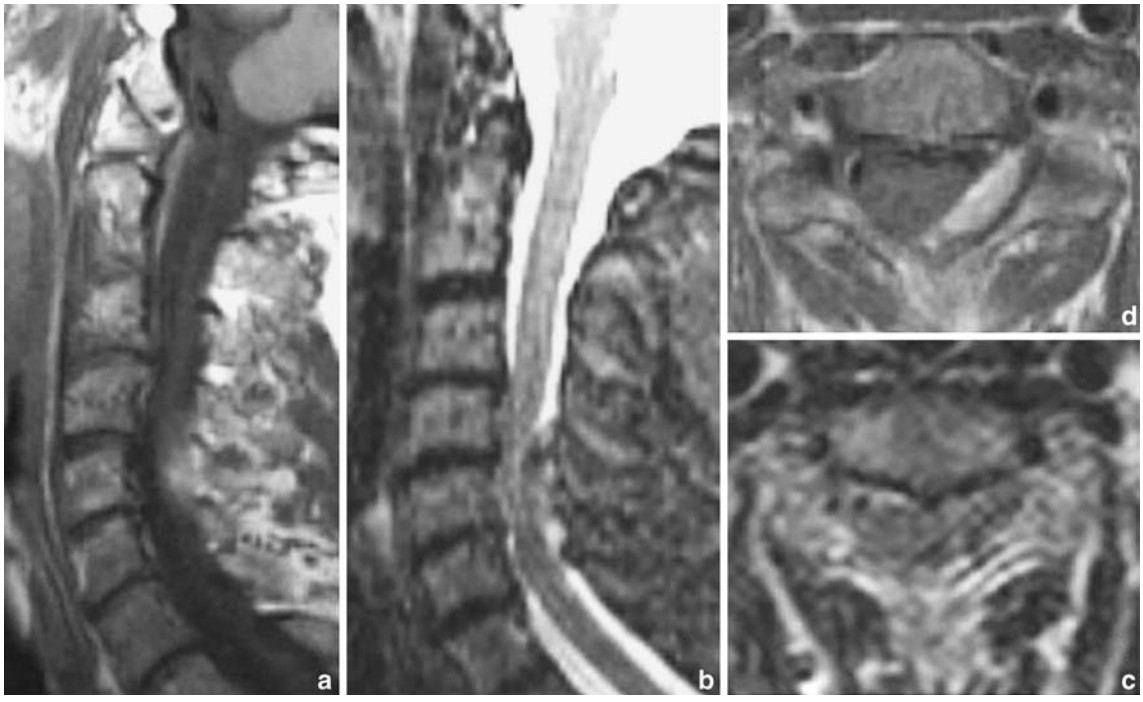

Fig. 2 MRI performed 7 days later. The haematoma is smaller nevertheless it is located at the same C4–C5 level

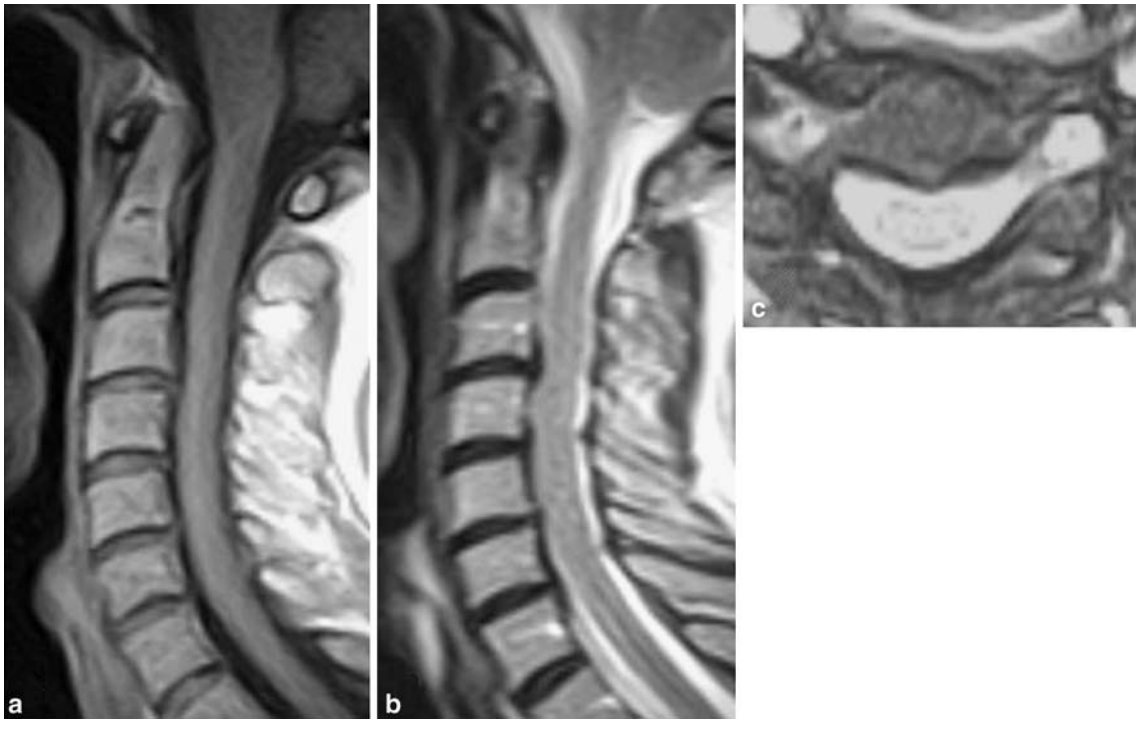

Fig. 3 MRI 1 month later: disappearance of the haematoma

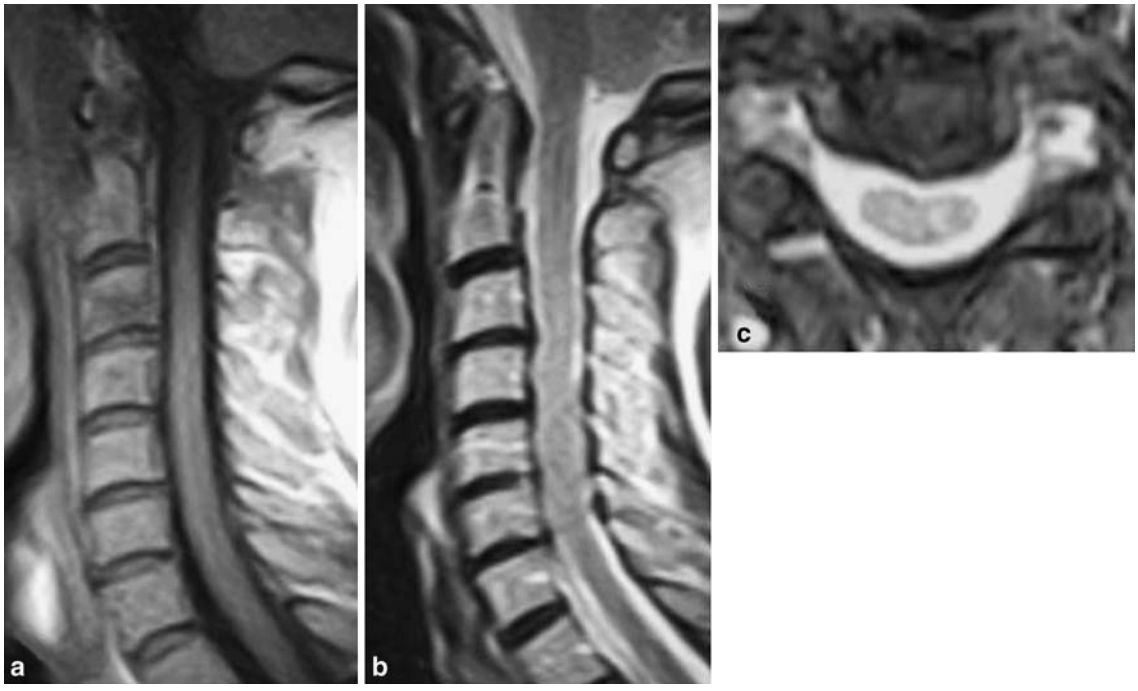

Fig. 4 MRI 1 year later: normal MRI

neurological impairment [7, 14], our case does not support that theory because the haematoma did not spread throughout the epidural space. (Figs. 1, 2)

Conservative management is currently indicated in uncommon situations or when neurological symptoms improve before medical evaluation. Geographic isolation, initial inaccurate diagnosis, neurological improvement pending an adequate coagulation level prior to surgery, high surgical risks and several other reasons had been referred to as the likely causes that led to the opportunity for spontaneous recovery [4, 7, 9, 11, 16]. Our case can be categorised as wrong diagnosis initially, but we have to admit that the first non-specialised consultation spared our patient from the operation. If the patient had first consulted a more skilled specialist, following the state of the art, he would have probably been operated on, thus obtaining a good result and a proud surgeon.

Finally, the main interest of our case would be focused on the controlled maintenance of the anticoagulant therapy in patients with mild neurological compromise such as radiculopathy due to SSEH in order to avoid thromboembolic risk.

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