Chronic pure radiculopathy in patient with organizing epidural hematoma around C8 nerve root

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Abstract Spontaneously occurring spinal epidural hematomas are uncommon clinical findings, and the chronic form is the rarest and its most frequent location is the lumbar spine. Pure radicular involvement is far less frequent than myelopathy. We report a case of progressive radiculopathy in a 52-year-old man with spontaneously occurring cervical epidural hematoma (SCEH). The patient had left hand weakness and numbness for 4 months. MRI scan showed small space-occupying lesion around left 8th cervical nerve root. After surgery we confirmed chronic organizing epidural hematoma. To the best of our knowledge, this is the second reported case in the worldwide literature of pure radiculopathy in a patient with chronic SCEH.

Keywords Spontaneous epidural hematoma · Radiculopathy · Chronic

Introduction

Spontaneously occurring cervical epidural hematoma (SCEH) is an uncommon condition causing cord compression and

paraplegia. The SCEH is occurred in the absence of an underlying hematologic disorder, systemic disease, local disease, coagulopathy, anticoagulant therapy, vascular malformation, trauma, or physical exertion [1]. These epidural hematomas can cause dramatic and acute neurologic deficits [2], which can be satisfactorily reversed if diagnosed and treated immediately [3].

The SCEH is a rare entity, but it is widely recognized throughout the literature as a cause of myelopathy. The most common symptoms are cervical or thoracic pain followed by cord compression signs [1, 4, 5]. Radicular involvement is very rare [6, 7].

The two interesting points of this report is followed: The SCEH involved the cervical spine and produced pure radiculopathy. The radiculopathy was deteriorated for over 3 months and organizing hemorrhage was confirmed in histopathological study after surgery.

Case presentation

A 52-year-old male presented to outpatient department with a chief complaint of left hand weakness and numbness. Four months before, he had quarreled with his wife with very minor physical contact but he could not remember what really happened. And then the forearm and hand numbness developed. After 2 months he felt left hand weakness. He denied the history of underlying bleeding tendency, systemic disease, anticoagulant therapy, trauma, or physical exertion.

On initial evaluation, the patient was afebrile with a heart rate of 76 times/min and blood pressure of 130/90 mmHg. The neurological examination revealed muscle weakness of flexor digitorum profundus and superficialis. The patient showed no signs or symptoms of

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Fig. 1 There is round shaped lesion in C7/T1 level, which is showing high signal intensity in T2-weighted images and low signal in T1-weighted images with enhancement after contrast injection

cord compression. Sensation was decreased throughout left C8 dermatome. The remainder of his physical examination was unremarkable.

The plain radiographs of the cervical spine were normal. Routine laboratory and diagnostic studies, including coagulation parameters, were all within normal limits.

Cervical CT revealed an extradural, hypodense mass around the left C8 root. The mass did not compress the spinal cord. On cervical MRI, the mass had high signal intensity on T2-weighted image (Fig. 1a), isosignal intensity on T1-weighted image (Fig. 1b) and slight enhancement on enhanced T1-weighted image (Fig. 1c, d).

The patient underwent surgery under a preoperative diagnosis of tumor or hemorrhage.

At surgery we performed C7 and T1 partial laminotomy with medial facetectomy, and removed epidural lesion which was soft, round, well-circumscribed and reddish around left C8 nerve root (Fig. 2a, b).

The histopathological study revealed the organizing hematoma without vascular malformation or neoplasm.

After surgery the patient was free of weakness or numbness. One year on, the patient remains asymptomatic.

Discussion

Spontaneously occurring cervical epidural hematomas (SCEH) were first reported by Jackson [8] and have occasionally reported in the literature since then.

SCEH is defined as epidural hemorrhage in the absence of trauma, coagulopathy, anticoagulant therapy, vascular malformation, neoplasia, or systemic disease [1].

Pure radicular involvement is distinctly rare, especially in cervical spine [6, 7]. Groen [9] reported that 9% of a series of 64 SCEH cases treated conservatively presented an isolated radicular compromise; only one of his cases was located on the cervicothoracic spine.

Recently Villas reported one case undergoing anticoagulant therapy that had a pure cervical radiculopathy and cervical epidural hematoma was resolved spontaneously [7].

Fig. 2 In operative view, there is thecal sac (*large arrow*) and round shaped lesion with thin membrane (*arrow head*, **a**). After removing of dorsal side of membrane, blood clots were removed and C8 nerve root was finally identified (*large arrow*) and ventral side of membrane was removed also (*arrow head*, **b**)

The chronic form of spontaneous epidural hematoma is the rarest and its most frequent location is the lumbar spine [10]. But Morio et al. [6] reported a chronic SCEH presenting with radicular symptoms, and no other cases have been reported worldwide.

In the present case it was noted that the patient had pure radiculopathy in cervical spine and in the initial diagnostic work up using cervical MRI and CT, we had considered tumorous lesion such as schwannoma or ependymoma and vascular malformation and hematoma as a differential diagnosis. But tumorous condition such as schwannoma or ependymoma was easily ruled out because of cervical CT findings, which was revealed as an extradural, hypodense mass around the left C8 root.

In operative field, there was oil-like fluid which was gushed out and suctioned when the membrane had been opened and this finding was a very familiar condition of chronic hematoma.

The tissue which was gained at operative field was sent to the pathologic laboratory and finally chronic organizing hematoma was confirmed histopathologically. To the best of our knowledge, this is the second reported case in the worldwide literature of pure radicular involvement in a patient with a chronic SCEH.

Conflict of interest None of the authors has any potential conflict of interest.

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