CASE REPORT

Spinal subarachnoid hemorrhage accompanied with intraventricular hemorrhage

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Spinal hematoma is a rare and usually severe neurological disorder that, without adequate treatment, often leads to death or permanent neurological deficit. Epidural as well as subdural and subarachnoid hematomas have been investigated in some studies. A 66-year-old man referred to our hospital because of acute onset paraplegia and incontinency started 3 h before admission. With impression of spinal hemorrhage, emergent cervicothoracic spinal MRI performed. On magnetic resonance imagination (MRI) mixed hyper/iso intense lesion in anterior subarachnoid space from C7 to T5 was seen. On brain A computerised tomography (CT) scan, subarachnoid hemorrhage and intraventricular hemorrhage in posterior parts of brain was seen. Unfortunately, the patient died 10 days later. About our patient, severe back pain accompanying by immediate paraplegia, sphincter disturbances, sensory level, and prominent meningeal signs guided us clinically to spinal subarachnoid hemorrhage. Further brain CT scan revealed diffusion of blood to brain subarachnoid space and ventricles. An outstanding finding on brain CT was the presence of blood only in posterior horn of lateral ventricles and dorsal fissures of brain supporting our theory that blood has diffused from spinal subarachnoid space to dorsal subarachnoid space of brain because of supine position of patient. In this patient anticoagulation may be the only sinister factor for developing complications.

Key words: Anticoagulants, spinal subarachnoid hemorrhage, spinal subdural hematoma, tomography, X-ray computed

INTRODUCTION

Spinal hematoma has been described in autopsies since 1682 and as a clinical diagnosis since 1867. It is a rare and usually severe neurological disorder that, without adequate treatment, often leads to death or permanent neurological deficit (reference). Epidural as well as subdural and subarachnoid hematomas have been investigated in some studies (references). Some cases of subarachnoid spinal hematoma may present with symptoms similar to those of cerebral hemorrhage.[1] Herein, we describe a patient with spinal subarachnoid hemorrhage (SSH) accompanying by brain subarachnoid hemorrhage (SAH) and intraventricular hemorrhage.

CASE REPORT

In 2010 year A 66-year-old man referred to our hospital because of acute onset paraplegia and incontinency started 3 h before admission. He was referred from a town at about 300 km far from our center. He had been completely healthy until the morning of admission day else slight low back pain since 2 days before. In the morning of that day, he experienced retrosternal chest pain radiating to neck. He had been admitted in local hospital and heparin had been started with diagnosis of unstable angina besides other routine treatment. In the afternoon, back pain had increased and retrosternal stabbing pain had occurred. Some minutes later, right sided lower limb plegia had developed. The physician of the patient called us and we gave admission of the patient. On the way to our hospital, contralateral weakness and incontinency had developed. On admission in our hospital, he was conscious, alert, and oriented. The back pain had been resolved since development of paraplegia and incontinency. On initial physical examination, blood pressure was 180/90 mm/Hg. He had urinary and fecal incontinency. On neurological examination, cranial nerves were completely intact. Funduscopy was normal. On limbs, upper limbs were Medical Research Council (MRC) grade 5 bilaterally but lower limbs were MRC grade 0. Deep tendon reflexes were 2+ on upper limbs but absent on lower limbs. Plantar reflexes were mute bilaterally. There was sensory level at the level nipple (T4). He had severed cervical pain and neck stiffness on neck bending. Bulbocavernous reflex was absent. With impression of spinal hemorrhage, emergent cervicothoracic spinal MRI performed [Figure 1]. On MRI mixed hyper/iso intense lesion in anterior subarachnoid space from C7 to T5 and filling defect in MR myelogram [Figure 2] was seen. At about 2 h later, brief episodes of apnea happened. After supportive treatment brain CT scan was performed. On brain CT scan, SAH

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and intraventricular hemorrhage in posterior parts of brain was seen [Figure 3]. SAH management started. In the next morning of the admission day generalized tonic clonic seizure occurred and the patient went to deep coma. Patient was intubated and supported under mechanical ventilation. (please write the results of different biochecmial lab tests) The patient died 10 days later (the cause of death).

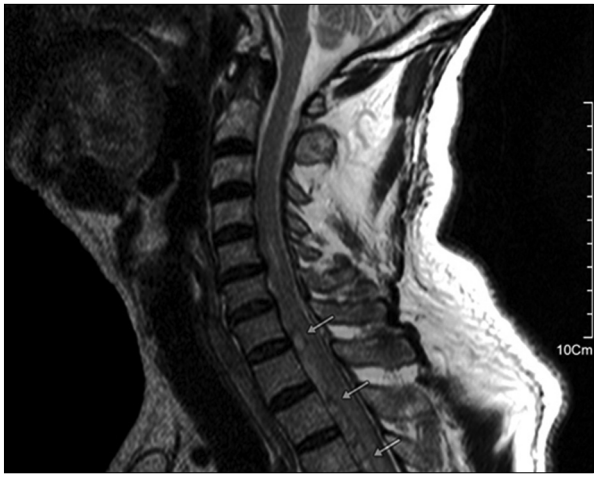

Figure 1: T2 weighted cervical MRI demonstrating MRI mixed hyperintense lesion in anterior subarachnoid space from C7 to T5 was seen

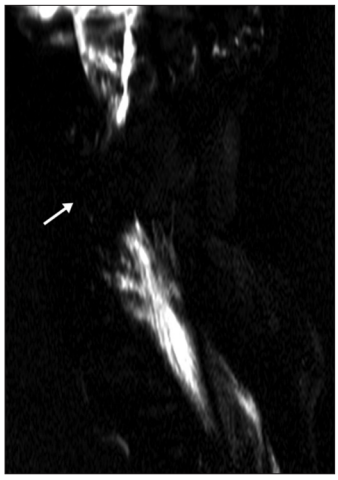

Figure 2: Filling defect in MR myelogram

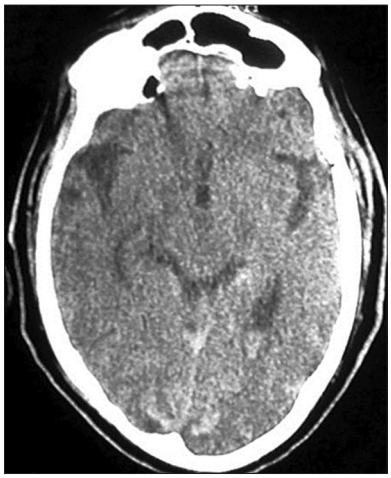

Figure 3: Subarachnoid hemorrhage and intraventricular hemorrhage in posterior parts of brain

DISCUSSION

SSH accounts for less than 1% of all SAHs. The most common cause is a spinal angioma, but these account for only around 10% of the whole cases. Other associated conditions include coarctation of the aorta, rupture of a spinal artery, polyarteritis nodosa, mycotic and other aneurysms of the spinal artery, spinal tumors, lumbar puncture, blood dyscrasias, and therapeutic thrombolytics and anticoagulants (for how long?).[2] Spontaneous SSH happens in less than 1% of all cases of SAH, and idiopathic spontaneous SSH is even rarer;[3] So far, only 12 cases have been described in the literature.[4] Similarly concerning SSH due to rupture of isolated spinal aneurysms, only 20 cases have been reported until now.[2]

SSH is mostly seen in cervical and thoracic segments.[5]

The clinical hallmark of SSH is sudden onset of severe back pain, which is often localized near the level of the hemorrhage associated with further meningeal and cranial nerves involvements.[5] Immediately, the pain becomes generalized and signs of meningeal irritation become prominent. Multiple radiculopathies and myelopathy may be present. When blood diffuses above the foramen magnum, headache, cranial neuropathies, and a decreased level of consciousness ensues.[2] The CSF is grossly bloody, and papilledema may be seen as a result of elevated intracranial pressure. Correct diagnosis requires a strong clinical suspicion. The evaluation of SSH frequently follows negative radiological studies of the intracranial structures. History may reveal the initial severe back pain or prior anticoagulant use. Physical examination may reveal a spinal bruit, cutaneous angioma, sensory level, the stigmata of collagen vascular disease, evidences suggesting septicemia.[2]

There is still controversy about the treatment strategy. Some authorities offer controversial treatment and some others surgical treatment.[6] Treatment is directed toward the underlying cause.[2]

About our patient, severe back pain accompanying by immediate paraplegia, sphincteral disturbances, sensory level, and prominent meningeal signs guided us clinically to SSH. Further brain CT scan revealed diffusion of blood to brain subarachnoid space and ventricles. An outstanding finding on brain CT was presence of blood only in

posterior horn of lateral ventricles and dorsal fissures of brain supporting our theory that blood has diffused from spinal subarachnoid space to dorsal subarachnoid space of brain because of supine position of patient. In this patient, anticoagulation was the only sinister factor for developing complications. A great concern about this patient was to operate surgically or follow-up medically especially, after the demise of patient especially, when we evaluated the patient retrospectively. The patient was not operated because of the rapid evolution of neurological deficits beyond disagreement between respondent physicians for surgical interventions; however, this contemplation remained forever in our mind whether immediate surgery could have saved his life.

CONCLUSION

In any patient with acute onset low back pain and ensuing signs of myelopathy, spinal hemorrhage should be regarded as the possible cause and pertinent imaging to support the diagnosis should be recommended sine delayed diagnosis may cause devastating results.

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