Cervical Traumatic Spinal Epidural Hematoma Without Fracture
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ABSTRACT
Objective And Importance: Spinal epidural hematoma (SEH) can result from traumatic and nontraumatic etiologies. Traumatic spinal epidural hematomas are usually seen in patients with vertebral fractures, particularly in cases with ankylosing spondylitis. Nontraumatic spontaneous spinal epidural hematomas are commonly associated with coagulopathies, tumors, or vascular malformations. Traumatic spinal epidural hematoma without an underlying fracture or degenerative condition is extremely rare.

Clinical Presentation: A case of a 57-year-old woman presented with neck pain after a trauma. The diagnosis of traumatic C4-5 spinal epidural hematoma was suspected in magnetic resonance imaging and certain diagnosis was established with computerized tomography of the cervical spine.

Intervention: She was managed conservatively with collar and the hematoma was resorbed in two weeks.

Conclusion: Spinal epidural hematoma may occur in patient with history of spinal trauma. Possibility of traumatic spinal epidural hematoma should be kept in mind even in the absence of underlying fracture or ankylosing spondylitis, and MR imaging and CT should be employed in suspected cases.

Key words: spinal epidural hematoma, trauma

Introduction
Spinal epidural hematoma (SEH) may occur spontaneously or as a result of trauma. SEH can result from traumatic etiologies with coexisting disease processes such as rheumatoid arthritis or ankylosing spondylitis (1-3), or may result from nontraumatic etiologies with a variety of underlying predisposing conditions, such as coagulopathies, tumors, or vascular malformations (4).

Case Presentation
A 57-year-old female presented with neck pain. She claimed that she woke up with severe neck pain and a bruised eyes and swollen nose. She could not remember the occasion resulting in her trauma. She had severe vertigo attacks for a couple of days, although she never fell or lost her consciousness. She denied previous episodes of seizure activity or syncope. Her past medical history was insignificant for any systemic or neurological diseases as well as use of anticoagulant/antiaggregant drugs. On her physical and neurological examination, she had periorbital hematoma, swollen nasal bridge and cervical paravertebral muscle spasm, otherwise her neurological and physical examination were within the normal limits. She was living alone and there were no other signs of assault in her physical examination. To rule out a seizure activity, electroencephalography was obtained, revealing no epileptic activity. Brain magnetic resonance imaging (MRI) was normal.

An MRI of the cervical spine disclosed a moderate cervical spinal canal stenosis, C4-5 and C5-6 disc herniations, and a posterolateral epidural lesion at C4-5 level, compressing the spinal cord, which was hyper-intense in T2 weighted turbo field echo and heterogeneous intensity in T2 weighted images (Figure 1 and 2, respectively). Cervical spine computerized tomography (CT) was obtained with the suspicion of SEH, and showed no fracture or dislocation; however, there was a hyperdense lesion at C4-5 level dorsal and lateral to the spinal cord on the right side (Figure 3). Diagnosis of cervical SEH was confirmed.

The patient was free of pain immediately when she was put on Philadelphia collar and simple analgesics. Repeat CT scan of the cervical spine showed almost complete resorption of the hematoma in two weeks.

Discussion
Traumatic SEH in the absence of a fracture is an extremely rare condition and etiology is unknown. Traumatic SEH associated with fractures have been reported in patients after high-energy trauma, and in patients with rheumatoid arthritis or ankylosing spondylitis (1,3,5,6) Even in traumatic
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SEH associated with fracture, etiology is still ambiguous. Possible etiologies include either bleeding from broken bone surfaces or injured epidural veins. In the absence of a fracture or an underlying degenerative condition, the proposed mechanism of bleeding into the epidural space is the injury to the dorsally located fragile vessels after sustained maximum hyperflexion of the cervical spine.

In the reported case, mechanism of injury was not known, hyperflexion of the neck was suspected. Cervical MRI was the first imaging technique to evaluate neck pain and paravertebral muscle spasm after a minor trauma to rule out the soft tissue injury, associated degenerative conditions and disc herniations. Presence of minor enhancement of the lesion further perplexed the situation and a neoplastic condition was taken into consideration. Nevertheless, CT of the cervical spine was required to analyze bony disruption and the nature of the lesion in the acute stage seen on MR. Cervical CT clearly demonstrated the presence of hematoma within the epidural space.

For the diagnosis of SEH, CT is always very effective and simple test. An MRI depicts extent and stage of SEH as well as its differential diagnosis for other soft tissue lesions. Most SEHs are located dorsal to the dural sac due to firm adherence of the dural sac to the posterior longitudinal ligament; on the other hand subdural hematomas are mostly located ventral to the spinal cord. If the lesion is contrast enhancing, it may be a sign of continuing bleeding from the venous plexus, particularly in patients with bleeding diathesis that may necessitate an aggressive treatment; however, it is necessary to rule out neoplasm or abscess in cases of enhancing lesions. Both CT and MRIs are valuable for decision-making about conservative versus surgical treatment of SEH. Although spontaneous resorption of SEH occurs; decompressive surgery should be considered in the presence of neurological deficit.

Figure 1. Axial MRI in T2 weighted TFE image at level of C4 demonstrating hyperintense spinal epidural hematoma on the right side.

Figure 2. Axial MR in T2 weighted image at level of C4 demonstrating heterogeneously intense spinal epidural hematoma on the right side.

Figure 3. Axial CT demonstrating hyperdense spinal epidural hematoma at C4 level.

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Conclusion
The possibility of traumatic SEH should be kept in mind even in the absence of an underlying fracture. CT and MRIs should be employed for both diagnosis and monitoring in suspected cases.

References