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Spontaneous spinal epidural hematoma as a Guillain-Barre syndrome, A case report

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Abstract

Guillain-Barre syndrome GBS is a rapid-onset limb weakness caused by the immune system damaging the peripheral nervous system. An early diagnosis and treatment is very necessary in this condition. We should consider similar conditions such as spontaneous spinal epidural hematoma (SSEH) and differentiate this condition as well.

Keywords: Spontaneous spinal epidural hematoma, SSEH, Guillain-Barre syndrome, GBS, Acute flaccid paralysis, AFP, epidural hematoma. **Cell, Gene and Therapy, Vol.2, Number 4, Winter 1st, 2021; 136- 139**

Introduction

Acute flaccid paralysis is a clinical condition that characterized by expeditious onset of loss of motor function in extremities including weakness of the respiratory and pharyngeal muscles, progressing to maximum severity within several days to weeks.(1) The clinical manifestation is associated to disease form and level of peripheral nervous system damage. The most common cause of acute flaccid paralysis include: Synovitis, Neuritis, Limb injury, Guillain-Barre syndrome (GBS), Transverse myelitis, spinal stroke, Tumor and Acute cord compression.

Spontaneous spinal epidural hematoma (SSEH) is a scarce syndrome. The incidence of SSEH was estimated to be 0.1 patients per 100,000 populations per year. (2-3) Most cases occur in persons

Between 50 and 80 years of age. The male to female ratio is 1.4:1. (4-7)

In 1869, for the first time SSEH was described by Jackson. (8) In SSHE, blood collects in the epidural space and compress the spinal cord. Clinical manifestations may alter from local pain to paralysis depending on the expanse of cord compression (9).

The etiology was many causes of SSEH have been described, including coagulopathy, trauma, surgery, and vascular lesions. Most hematomas occur spontaneously, with no known cause; however, some spontaneous lesions are related to vascular anomalies, such as arteriovenous malformations, vertebral hemangiomas, obstetrical birth trauma, lumbar puncture, spinal manipulation, and epidural procedures. (10) The mechanism of bleeding in SSEH is still remains unclear. Most researchers professed that it comes from the epidural venous plexus in the spinal epidural space because it lacks venous valves, and the undulating pressure from the thoracic and abdominal cavity can strike it directly. (11-13)

Case report

A 29 years old healthy male patient come to our emergency department with complaints of weakness in both lower limbs and Urinary and fecal incontinence after waking up in the morning. The patient was have cervical and occipital pain last night. He has no history of recent trauma, infection, surgery and anticoagulant use. On the neurological examinations cranial nerves examinations was normal and muscle strength of upper extremities was graded 5/5 and lower extremities was graded 0/5. Bilateral Achilles reflex was absent and knee reflex was 3+. The loss of skin sensation was below the T4 vertebral level with saddle anesthesia. The bilateral plantar responses were flexed.

The EDX study was reported acute severe sensorimotor demyelinating polyneuropathy. However, the MRI of the cervical and dorsal spines revealed an epidural hematoma on the posterior surface of the cord from the **T1 to T3** level with spinal cord compression. The hematoma had isointensity to the spinal cord on T1-weighted images and hyperintensity on T2-weighted images. (Figure 1 and 2)

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Figure 1. Sagittal T1 MR Sequences showing an isointense lesion at the Level of T1-T3.

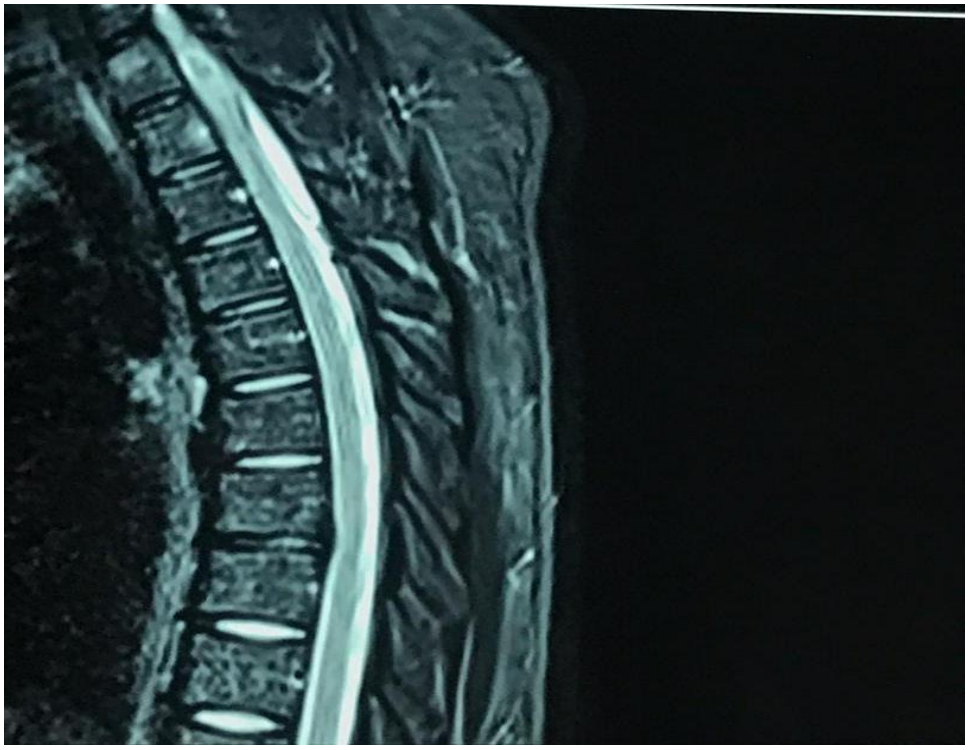

Figure 2. Sagittal T2 MR Sequences showing an hyperintensity lesion at the Level of T1-T3.

We admitted the patient in the neurosurgery department with diagnosis of spinal epidural hematoma. An emergency posterior approach decompression with bilateral laminectomy and hematoma evacuation from T2 to T6 level was performed that clotted and thick blood with prominent epidural hematoma were noted in the epidural space. No obvious vascular malformation was found during operation and the cord was adequately decompressed. The pathological report confirmed no evidence of malignancy or vascular malformation. 0n the digital subtraction angiography no evidence of any vascular malformation was found.

Discussion

Acute Flaccid paralysis (AFP) is a clinical condition characterized by reduce or loss of muscles tone or paralysis. The AFP may be caused by trauma or different causes. There are many infectious and non-infectious causes of AFP. The SSEH is one of the most important causes of AFP. The SSEH accounts for less than 1% of all spinal epidural lesions, with an estimated annual incidence of only 1 per million (14).

Spontaneous hematoma is most often defined as a hematoma occurring in the absence of any trauma or iatrogenic procedure. The most common primary manifestation of spontaneous spinal epidural hematoma is a sudden onset of severe pain with or without radicular symptoms. Without proper handling, most cases will develop motor and sensory deficits. (15)

In our patient, the initial presentation was acute paraplegia with diminish Achilles reflex that seduce the ER physician to suspect Guillain-Barre syndrome or acute inflammatory demyelinating polyneuropathy (AIDP).

A complete neurological examination was done and all cranial nerves were intact. Landry-Guillain-Barre-Strohl syndrome, hereafter called Guillain-Barre syndrome (GBS), is a disorder of peripheral nerves, characterized by subacute (days to weeks) progression of motor-sensory dysfunction not associated with meningismus or fever. (16) Guillain-Barre syndrome is the most common cause of AFP in many parts of the world, and it accounts for over 50 percent of AFP cases in both industrialized and developing countries (17). The most common initial symptoms is sensory, that frequently appears before or at the onset of motor symptoms and many patients complain of paresthesia in their hands and feet. Motor symptoms is usually involves the lower limbs first and characteristically symmetrical. Deep-tendon reflexes (DTR) are absent in 90% of patients with GBS, although this may not be evident at first. (18) One the most striking feature of our patient that differentiated GBS from SSEH was truncal sensory level that does happen nearly never in GBS.

Take home message

In every patient with flaccid paraplegia, we have to be cautious about sensory level besides the other neurological signs. Therefore, if a patient has truncal or abdominal sensory level almost always, the GBS could be rule out immediately.

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