

# Commentary

Sir,

Spontaneous spinal epidural hematoma (SSEH) is a rare clinical disorder that might result in permanent neurological deficit and death when left untreated.<sup>[1]</sup> The usual clinical presentation of SSEH is sudden neck or back pain that progresses toward paraparesis or quadriparesis, depending on the level of the lesion.<sup>[1]</sup> The etiology of SSEH includes undiagnosed, acquired, or congenital coagulopathies such as hemophilia, anticoagulant use, hypertension, neoplasm, arteriovenous malformation, trauma or postoperative complications, cough, vomiting, sneezing, or weight lifting that increases venous pressure. However, in 40% of patients with such hemorrhages, no etiology can be identified and they are classified as idiopathic SSEH.<sup>[2]</sup>

Up to date, there have been disputes about the origin of these hematomas. Most researchers conclude that SSEHs arise from the epidural venous plexus in the spinal epidural space because it lacks venous valves, and undulating pressure from the thoracic and abdominal cavities can impact it directly.<sup>[3]</sup> It is believed that epidural venous pressure cannot be lower than the intrathecal pressure. If this happens, then the venous vessels can dilate and induce a mass effect; however, it is deemed impossible to take place.<sup>[3]</sup> The arterial structures responsible for the hemorrhage in the epidural area are located in the posterior and posterolateral areas.<sup>[2,3]</sup>

The most common site of a SSEH is the cervicothoracic region or thoracolumbar region.<sup>[1]</sup> Although the upper cervical segment is very mobile, it gives rise to the brachial plexus and due to the rigid structure of the thoracic spine, lower cervical spine mobility is limited. However, stretching in different directions raises the vascular vulnerability.<sup>[2-4]</sup> Often, the hematoma is located posteriorly or posterolaterally, usually extending over 2–3 segments. The clinical presentation may vary depending on the size and location of the hematoma.<sup>[4]</sup>

In contrast to the literature, ventral SSEH is very rare. It is considered to be attached to the vertebral bodies of the dura membrane of the ventral surface of the spinal cord. But, an epidural hematoma may lead to dissection. The bleeding can occur from the blood vessels on the lateral side surface.<sup>[5]</sup> It can pass into the anterior from posterolateral of spinal cord or it can occur from a traumatic vertebral body bleeding, or may be the

bleeding caused due to the cervicothoracic junction may be replaced down by gravity.<sup>[6]</sup>

As a result when diagnosed with SSEH, it is a very rare neurosurgical emergency event.<sup>[7]</sup> Therefore, if not diagnosed early, it may result in catastrophic result. There was my experience in separate three cases about SSEH. The cases were adult and they were located close to cervicothoracic junction and in posteriorly. Moreover, urgently, it was required to perform two or three level hemilaminectomy for these cases because of epidural solid clot. It was not easy to clean the totally epidural solid clot. That is why the ventral epidural clot may not be easily cleaned. For that reason, at least, adequate posterior decompression on spinal cord is required.<sup>[5]</sup>

Total laminectomy is not desirable for a child. However, it may be required due to both the very delicate cervical and thoracic spinal cords and to prevent the neurological deficits.<sup>[5]</sup> Thereby, after adequate posterior decompression, remaining ventral blood clot is not a problem. The remaining blood clots as soon as will be spontaneously absorbed.<sup>[6]</sup> As in this case report, only laminectomy may be insufficient. (It was understood from radiological imaging such as hemilaminectomy or partial facetectomy.) But if it is not a solid blood clot, it may be enough to be drained with facetectomy.

However, need to make prepare for everything, especially in a 14-year-old patient, total laminectomy should be done through the blood column necessary to prevent remaining neurologic deficits.<sup>[5]</sup> Moreover, instead of total laminectomy, laminoplasty was preferable to protect the spinal stability. For this, only one side of the lamina-free edge can be connected back to the vertebral bone, and it does not compress the spinal cord.<sup>[5]</sup> Further, hemostasis in pediatric patients requires utmost care. Fibrin derivatives (such as Fluosil<sup>®</sup>) can be used prior to surgical closure. Washing with serum saline can be done in severe venous bleeding. In addition, drugs such as intravenous tranexamic acid (Transamine<sup>®</sup>) may be administered to prevent blood loss for children.<sup>[8]</sup>

Finally, the interval between the onset of SSEH symptoms and the surgical decompression determines the SSEH prognosis.<sup>[9]</sup> This interval is related to the degree of preoperative neurologic deficits. According to the literature, incomplete spinal cord dysfunction takes place

within the first 48 h. If another 36 h has passed, complete spinal cord dysfunction occurs.<sup>[9]</sup> The successful neurologic prognosis seems to be associated with the early application of decompressive surgery consistent with the literature.<sup>[5,9]</sup>

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