

# Epidural venous plexus

The **epidural** venous plexus is a network of interconnecting **veins** located in the anterior epidural space, in the outermost part of the **spinal canal**. It runs from the **skull base** to the **sacrum**. It is surrounded by very little fat, although the levels increase towards the lower levels of the **spine**.

Superficial **siderosis** of the **central nervous system** is a rare intractable **disease** induced by chronic **subarachnoid hemorrhage**. Neurological deficits, such as **cerebellar ataxia** and hearing difficulties, gradually progress if left undiagnosed. **Hemosiderin** deposition is irreversible because standard medical treatment has not yet been established. Interventions at the source of bleeding may be the key to a preferable outcome of treatment for chronic subarachnoid hemorrhage; however, the source is not clear in many cases.

Among the consecutive cases diagnosed with a spontaneous cerebrospinal fluid (CSF) leak, cases of superficial siderosis associated with a Cerebrospinal fluid fistula due to a ventral dural defect were retrospectively analyzed.

Among 77 cases of a Cerebrospinal fluid fistula, 7 cases (9%) of superficial siderosis were identified (median age of 59 years, male, 4 cases). Defects were diagnosed on 1-mm sliced fast imaging employing steady-state acquisition MRI (n = 5), conventional myelographic CT (n = 1), or dynamic myelographic CT (n = 1) at high thoracic levels (T1-T4). All defects were repaired by direct neurosurgery. During surgery, continuous bleeding from the **epidural veins** of the vertebral **epidural venous plexus** was identified as the source of **subarachnoid hemorrhage**. Epidural CSF pulsations through the defect prevented **clot** formation by the epidural veins. Dural repair stopped free communication between the subarachnoid and **epidural spaces**, leading to the disappearance of chronic subarachnoid hemorrhage.

Bleeding from the **epidural venous plexus** may be the cause of **superficial siderosis** associated with ventral **dural defects**. Neurosurgical **repair** may stop the progression of this condition <sup>1)</sup>.

<sup>1)</sup>

Takai K, Taniguchi M. Superficial siderosis of the central nervous system associated with ventral **dural defects**: bleeding from the epidural venous plexus. J Neurol. 2021 Apr;268(4):1491-1494. doi: 10.1007/s00415-020-10319-2. Epub 2021 Jan 3. PMID: 33389031.

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