Spinal hematoma

Classification

Spinal epidural hematoma

Spinal subarachnoid hemorrhage

Spinal subdural hematoma.

Case series

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. Epidural as well as subdural and subarachnoid hematomas have been investigated. Some cases of subarachnoid spinal hematoma may present with symptoms similar to those of cerebral hemorrhage. The literature offers no reliable estimates of the incidence of spinal hematoma, perhaps due to the rarity of this disorder. In the present work, 613 case studies published between 1826 and 1996 have been evaluated, which represents the largest review on this topic to date. Most cases of spinal hematoma have a multifactorial etiology whose individual components are not all understood in detail. In up to a third of cases (29.7%) of spinal hematoma, no etiological factor can be identified as the cause of the bleeding. Following idiopathic spinal hematoma, cases related to anticoagulant therapy and vascular malformations represent the second and third most common categories. Spinal and epidural anesthetic procedures in combination with anticoagulant therapy represent the fifth most common etiological group and spinal and epidural anesthetic procedures alone represent the tenth most common cause of spinal hematoma. Anticoagulant therapy alone probably does not trigger spinal hemorrhage. It is likely that there must additionally be a “locus minoris resistentiae” together with increased pressure in the interior vertebral venous plexus in order to cause spinal hemorrhage. The latter two factors are thought to be sufficient to cause spontaneous spinal hematoma. Physicians should require strict indications for the use of spinal anesthetic procedures in patients receiving anticoagulant therapy, even if the incidence of spinal hematoma following this combination is low. If spinal anesthetic procedures are performed before, during, or after anticoagulant treatment, close monitoring of the neurological status of the patient is warranted. Time limits regarding the use of anticoagulant therapy before or after spinal anesthetic procedures have been proposed and are thought to be safe for patients. Investigation of the coagulation status alone does not necessarily provide an accurate estimate of the risk of hemorrhage. The most important measure for recognizing patients at high risk is a thorough clinical history. Most spinal hematomas are localized dorsally to the spinal cord at the level of the cervicothoracic and thoracolumbar regions. Subarachnoid hematomas can extend along the entire length of the subarachnoid space. Epidural and subdural spinal hematoma present with intense, knife-like pain at the location of the hemorrhage (“coup de poignard”) that may be followed in some cases by a pain-free interval of minutes to days, after which there is progressive paralysis below the affected spinal level. Subarachnoid hematoma can be associated with meningitis symptoms, disturbances of consciousness, and epileptic seizures and is often misdiagnosed as cerebral hemorrhage based on these symptoms. Most patients are between 55 and 70 years old. Of all patients with spinal hemorrhage, 63.9% are men. The examination of first choice is magnetic

resonance imaging. The treatment of choice is surgical decompression. Of the patients investigated in the present work, 39.6% experienced complete recovery. The less severe the preoperative symptoms are and the more quickly surgical decompression can be performed, the better are the chances for complete recovery. It is therefore essential to recognize the relatively typical clinical presentation of spinal hematoma in a timely manner to allow correct diagnostic and therapeutic measures to be taken to maximize the patient's chance of complete recovery [1].

Case reports

Vermeulen et al. present a case in which the diagnosis was complicated by a concomitant intraabdominal hemorrhage. The patient, taking coumarins, presented with acute back pain and abdominal pain and progressive paresis of the lower limbs. Computed tomography angiography of the abdomen showed an intraabdominal hemorrhage and an aneurysm of the celiac trunk. Spinal magnetic resonance imaging revealed a combined spinal subdural hematoma and spinal epidural hematoma from C1 to L1. Both sites were treated conservatively. After 6 months the patient regained strength in both legs with some persistent loss of strength in the left leg. Follow-up MR imaging showed complete resolution of the spinal hemorrhage. The celiac artery aneurysm was treated conservatively. They suggest that the rupture of the celiac artery aneurysm caused increased intra-abdominal pressure leading to spinal hemorrhage. Emergency staff should be aware of the possibility of two rare but concomitant conditions [2].

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Kreppel D, Antoniadis G, Seeling W. Spinal hematoma: a literature survey with meta-analysis of 613 patients. Neurosurg Rev. 2003 Jan;26(1):1-49. Epub 2002 Sep 24. Review. PubMed PMID: 12520314.
2)
Vermeulen K, Schwagten V, Menovsky T. Concomitant Intraspinal and Retroperitoneal Hemorrhage Caused by an Aneurysm on the Celiac Artery: A Case Report. J Neurol Surg Rep. 2015 Jul;76(1):e28-31. doi: 10.1055/s-0034-1395491. Epub 2015 Jan 16. PubMed PMID: 26251805; PubMed Central PMCID: PMC4520959.