Spinal subarachnoid hemorrhage

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A spinal subarachnoid hemorrhage (SSH) is a rare cause of spinal cord or cauda equina compression. It is usually associated with several well-known predisposing factors, including coagulation abnormality, use of anticoagulants, arteriovenous malformation (AVM), spinal artery aneurysm, lumbar puncture, and trauma.

It may also occur spontaneously, but the incidence is extremely rare.

Spinal subarachnoid hematoma (SSH) following diagnostic lumbar puncture is very rare. Generally, SSH is more likely to occur when the patient has coagulopathy or is undergoing anticoagulant therapy. Unlike the usual complications, such as headache, dizziness, and back pain at the needle puncture site, SSH may result in permanent neurologic deficits if not properly treated within a short period. An otherwise healthy 43-year-old female with no predisposing factors presented with fever and headache. Diagnostic lumbar puncture was performed under suspicion of acute meningitis. Lumbar magnetic resonance imaging was performed due to hypoesthesia below the level of T10 that rapidly progressed after the lumbar puncture. SSH was diagnosed, and high-dose steroid therapy was started. Her neurological symptoms rapidly deteriorated after 12 hours despite the steroids, necessitating emergent decompressive laminectomy and hematoma removal. The patient's condition improved after the surgery from a preoperative motor score of 1/5 in the right leg and 4/5 in the left leg to brace-free ambulation (motor grade 5/5) 3-month postoperative. The patient was discharged with no neurologic deficits. Critical complications such as SSH can be fatal. Therefore, a patient undergoing lumbar puncture must be carefully observed. A hematoma that convincingly compresses the spinal cord or cauda equina on imaging results requires early surgical decompression and hematoma removal [1)].

Case reports

A case report describes a 48-year old female who presented with altered mental status, lower extremity weakness, low back pain and a recent history of subjective fevers and night sweats found to have posterior parieto-occipital and spinal subarachnoid hemorrhage on imaging. Further work-up revealed vasculitic changes in the intracranial vasculature and the external carotid artery on angiography. She also demonstrated positivity for perinuclear anti-neutrophil cytoplasmic (p-ANCA) antibodies overall consistent with ANCA associated central nervous system vasculitis (AAV). The

present case describes a rare and new presentation of AAV that caused both a cerebral and spinal subarachnoid hemorrhage. There has been no documentation of spinal subarachnoid hemorrhage associated with primary or secondary vasculitis in the literature. Ultimately, this case demonstrates the important finding that AAV can have spinal cord manifestations and cervical vasculature involvement along with the more classic intra-cranial vasculitis findings [2].

1)

Park JH, Kim JY. Iatrogenic Spinal Subarachnoid Hematoma after Diagnostic Lumbar Puncture. Korean J Spine. 2017 Dec;14(4):158-161. doi: 10.14245/kjs.2017.14.4.158. Epub 2017 Dec 31. PubMed PMID: 29301177.

2)

Harland TA, Seinfeld J, Cava LF, Neumann RT, Roark C, Kumpe D, Case D. Anti-neutrophil cytoplasmic antibody associated central nervous system vasculitis with brain and spinal cord subarachnoid hemorrhage: A rare case report and review of the literature. J Clin Neurosci. 2018 Dec 26. pii: S0967-5868(18)31795-8. doi: 10.1016/j.jocn.2018.12.001. [Epub ahead of print] PubMed PMID: 30594448.