Chronic subdural hematoma after ventriculoperitoneal shunt overdrainage

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Subdural hematoma after ventriculoperitoneal shunt overdrainage is one of the complications of a ventriculoperitoneal shunt (VPS) procedure, and it should be considered in any patient who presents with a cerebrospinal fluid shunt malfunction. The incidence of subdural hematoma related to overdrainage varies considerably in published reports and appears to be approximately 3 to 12% [1) 2)].

see also Chronic subdural hematoma after lumboperitoneal shunt

Case reports

A 68-year-old man with a ventriculoperitoneal shunt for 8 years. He presented with bilateral chronic subdural hematoma with the disappearance of lateral ventricles nearly 1 month after a brain injury caused by being hit with a stick. After burr hole drainage (BHD), the patient's symptoms improved, and lateral ventricles reappeared but disappeared rapidly with CSDH recurrence within a short time. They considered the cause to be medium pressure shunt valve breakdown caused by hitting with a stick, confirmed by the engineer's test after the operation and excessive cerebrospinal fluid drainage. BHD replaced the adjustable pressure shunt valve, and the patient recovered.

Ventriculoperitoneal shunt is a common operation in neurosurgery, and postoperative shunt valve breakdown may lead to poor outcomes. Ma et al. report a rare case of chronic subdural hematoma caused by shunt valve breakdown due to excessive external forces, suggesting that patients after the ventriculoperitoneal shunt should pay attention to the protection of the shunt valve [3)]

A 10-month-old Tanzanian female developed bilateral-subdural hematomas after the insertion of a

ventriculoperitoneal shunt [4]

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a 68-year-old woman with a 4-month history of progressive abdominal pain and distention. She denied any additional symptoms. A VP shunt was performed 15 years earlier to treat idiopathic normal pressure hydrocephalus and no other abdominal surgery was performed. Physical examination revealed an elastic palpable mass in her right lower abdomen, which was dull to percussion. Abdominal computed tomography (CT) scan indicated a large cystic collection of homogenous iso-density fluid in the right lower abdominal region with clear margins. The distal segment of the peritoneal shunt catheter was located within the cystic mass. Abdominal CSF pseudocyst was highly suspected as a diagnosis. Laparoscopic cyst drainage with removal of the whole cystic mass was performed, 15-cm cyst which found with thick walls and organized chronic hematic content. No responsible vessel for the cyst hemorrhage was identified. No further shunt revision was placed. Histological examination showed that the cyst wall consisted of outer fibrous tissue and inner granulation tissue without epithelial lining, and the cystic content was chronic hematoma. The patient had an uneventful postoperative course and remained asymptomatic for 8-mo follow-up.

To the best of Wang et al. knowledge, this is the first report of hemorrhagic onset in the abdominal pseudocyst following VP shunt. Such special condition can accelerate the appearance of clinical signs of the abdominal pseudocyst after VP shunts, and its mechanisms may be similar to the evolution of subdural effusion into chronic subdural hematoma (CSDH) [5].

Three had acute on chronic subdural hematoma, and one had a subacute subdural hematoma. Patients presented with GCS 13-15 and various neurological signs, mainly confusion and an unsteady gait. Two cases improved following the resetting of their programmable shunt valve to its maximal pressure setting. Six cases improved after the evacuation of the hematomas, and five of them were operated on a few days after initially resetting of the valve pressure. Three patients were discharged home, whereas five were referred to rehabilitation. Extended Glasgow Outcome Scale scores at discharge and during long-term follow-up were 5 and 7, respectively.

Treatment of patients with VPS for NPH, presenting with an SDH, may differ according to the neurological status, imaging, and clinical course. Treatment options include restricting shunt function, hematoma evacuation, or both [6]

1)
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