Hydrocephalus after aneurysmal subarachnoid hemorrhage diagnosis

- Post-traumatic hydrocephalus after decompressive craniectomy: a multidimensional analysis of clinical, radiological, and surgical risk factors
- Subarachnoid hemorrhage, part 2 : Treatment, complications and long-term sequelae
- Impact of acute hydrocephalus after aneurysmal SAH on longitudinal cognitive outcome- post-hoc analysis of the MoCA-DCI study
- Flow Diverter Assisted Embolization of Ruptured Aneurysms is Associated with Increased Hemorrhagic Complications: Prognostic Factors and Outcomes in Neuroendovascular Treatment of Subarachnoid Hemorrhages
- Risk factors for surgery-related cerebral infarction after aneurysmal subarachnoid hemorrhage
- Rupture of a true anterior spinal artery aneurysm at its intracranial origin: a short report
- Effect of shunt-dependency on long-term outcome after aneurysmal subarachnoid hemorrhage: a post-hoc analysis of the EARLYDRAIN prospective patient cohort
- Cerebral Venous Thrombosis in Traumatic Brain Injury: A Population-Based Cross-Sectional Study of 640 Patients

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Hydrocephalus after aneurysmal subarachnoid hemorrhage diagnosis is based on clinical assessment and neuroimaging findings.

1. Clinical Signs and Symptoms Acute Hydrocephalus (first 72 hours)

Decreased level of consciousness Headache, nausea, vomiting Pupillary abnormalities Impaired upward gaze (sunset sign) Altered brainstem reflexes Hypertension and bradycardia (Cushing’s response) Subacute/Chronic Hydrocephalus (beyond 7–14 days)

Progressive cognitive decline (confusion, memory deficits) Gait disturbances (wide-based gait, shuffling steps) Urinary incontinence Features resembling normal pressure hydrocephalus (NPH) in some cases 2. Imaging Findings Non-contrast CT Scan (Initial Diagnostic Test)

Enlargement of the lateral and third ventricles Effacement of cortical sulci (suggesting CSF outflow obstruction) Periventricular hypoattenuation (suggesting transependymal CSF flow) Fisher grade of SAH severity may predict hydrocephalus risk CT or MR Ventriculography (For Shunt Planning)

Can assess CSF flow dynamics in chronic cases MRI Brain with CSF Flow Studies

Helps evaluate communicating vs. non-communicating hydrocephalus Cine phase-contrast MRI may show decreased CSF flow at the aqueduct

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Hydrocephalus after aneurysmal subarachnoid hemorrhage early recognition of its signs and symptoms and accurate interpretation of computed tomography (CT) studies are important for the management of patients with SAH. Clinically, a poor neurologic grade has the highest correlation with an increased incidence of hydrocephalus. Radiographically, the bicaudate index on CT studies has

emerged as the best marker of this condition. Although further studies are needed to understand the complex pathophysiology of this condition, hydrocephalus after SAH can be treated effectively using current technology [1].

Most readmissions after aneurysmal subarachnoid hemorrhage (SAH) relate to late consequences of hemorrhage, such as hydrocephalus, or medical complications secondary to severe neurological injury. Although a minority of readmissions may potentially be avoided with closer medical follow-up in the transitional care environment, readmission after SAH is an insensitive and likely inappropriate hospital performance metric [2].

Data demonstrate that gender influences acute hydrocephalus development in a rat SAH model. Future studies should determine the role of estrogen in SAH-induced hydrocephalus [3].

Hydrocephalus might cause gradual obtundation in the first few hours or days; it can be treated by lumbar puncture or ventricular drainage, dependent on the site of obstruction

Aneurysmal subarachnoid hemorrhage (SAH) has been reported to induce an intrathecal inflammatory reaction reflected by cytokine release, particularly interleukin-6 (IL-6), which correlates with early brain damage and poor outcome.

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2)
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3)
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