see arrested hydrocephalus.

A 62-year-old woman with a medical history of hypertension and well-controlled diabetes mellitus type 2 was found unresponsive on the floor at home by her family. Her family reported that the day before admission she had appeared more tired and weak with altered mental status, but before that had been in normal health. On examination she had Glasgow coma score (GCS) of 3, a temperature of 39·4°C, tachycardia, and systolic blood pressure ranging from 170-200 mm Hg. She had weakness in her legs bilaterally, but review of systems was otherwise negative. In view of her low GCS score she was intubated for airway protection, and required vasopressors because she was hypotensive, febrile, tachycardic, and not responding to fluids. A CT scan of her head and subsequent MRI showed profound hydrocephalus.

An external ventricular drain was fitted for possible acute hydrocephalus, but her intracranial pressure was found to be 5 mm Hg (normal 5–15 mm Hg) and remained 5–10 mm Hg so the drain was removed 2 days later. Cerebrospinal fluid (CSF) tests were normal. We made a diagnosis of sepsis secondary to pneumonia, on the basis of chest radiographs showing consolidation and blood culture results, as the cause of her altered mental status, which returned to normal after treatment with antibiotics. She was discharged to a rehabilitation facility and has now returned to her normal baseline. In view of her previously normal medical history the clinical team decided her hydrocephalus had probably been present since birth.

This case shows the brain's ability to maintain normal mental status and function in spite of profound chronic hydrocephalus. In contrast to normal pressure hydrocephalus, compensated hydrocephalus can be asymptomatic until an external insult, such as an infection as in this case, and can lead to syncope or even sudden death. Compensated hydrocephalus, also known as hydrocephalus ex vacuo, is a form of communicating hydrocephalus, one that does not obstruct the flow of CSF. Compensated hydrocephalus is usually seen in elderly people as the result of brain volume loss due to ageing or a disorder that causes the brain to shrink, such as Alzheimer's disease, leukodystrophy, or encephalomalacia resulting from focal damage caused by a stroke or traumatic brain injury. Clinicians should be aware of this condition that might be found incidentally on imaging in asymptomatic patients. Unless dictated by clinical examination, as in this case, additional work-up is not necessary ¹¹.

1)

Alvin MD, Miller PE. Compensated hydrocephalus. Lancet. 2016 Jun 11;387(10036):2422. doi: 10.1016/S0140-6736(16)00089-1. Epub 2016 Mar 4. PubMed PMID: 26946927.

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