

# Intraparenchymal pericatheter cyst in ventriculoperitoneal shunt failure

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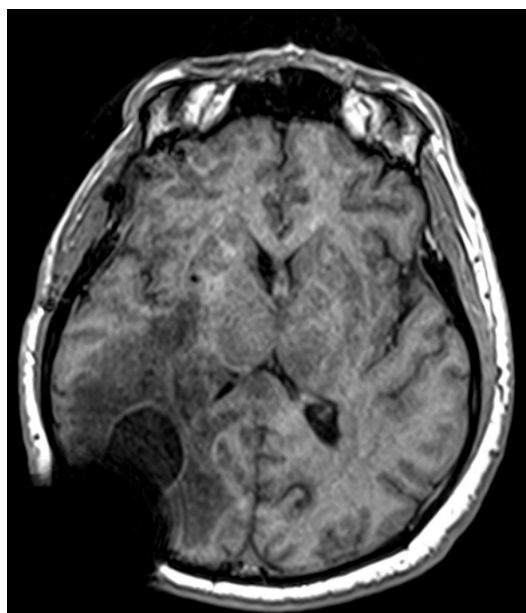
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## DESCRIPTION

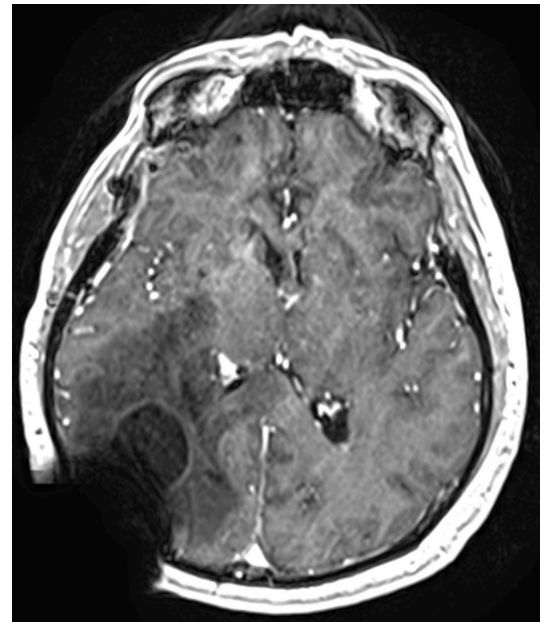
A 60-year-old man status post right parieto-occipital ventriculoperitoneal shunt with programmable valve for indication of delayed hydrocephalus after aneurysmal subarachnoid haemorrhage returns to



**Figure 1** Head CT without contrast at the time of the failure and cyst.



**Figure 2** Brain MRI without contrast demonstrating the cyst (with artefact from the shunt near the skull).



**Figure 3** Brain MRI with contrast demonstrating the non-enhancing pattern of the cyst (with artefact from the shunt near the skull).



**Figure 4** Head CT without contrast at follow-up visit showing resolution of the cyst and oedema.

clinic 7 weeks after placement for insidious onset of headaches, confusion and gait imbalance. CT scan of the head without contrast revealed an intraparenchymal pericatheter cystic collection with severe



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oedema (figure 1). The patient denied systemic signs of illness, and laboratory markers for infection were low. A tap of the shunt reservoir revealed no spontaneous flow and difficulty in aspirating cerebrospinal fluid (CSF). Laboratory analysis of the fluid showed negative Gram stain, normal chemistry profile and cell counts. MRI of the brain showed a simple cyst with significant oedema, but no restricted diffusion or contrast enhancement of the cyst wall (figures 2 and 3). CT of the abdomen was benign, without evidence of pseudocyst or other cause of distal obstruction.

The patient was taken to the operating theatre for exploration of the shunt system with high suspicion for proximal mechanical failure. The proximal catheter was disconnected, and found to have no spontaneous flow of CSF. A new proximal catheter was placed using neuronavigation, and spontaneous flow was observed. The system was interrogated, reconnected and incision closed.

The patient had immediate improvement in symptoms. All cultures were negative. He was discharged home on postoperative day 1. With negative cultures, diagnosis of brain abscess was excluded, and intraparenchymal pericatheter cyst was confirmed, a rare, but known, complication of proximal ventriculoperitoneal shunt failure.<sup>1</sup> Follow-up CT scan 6 weeks later demonstrated near-complete resolution of the pericatheter cyst, with improvement in oedema (figure 4).

### Learning points

- ▶ Intraparenchymal pericatheter cyst is a rare complication of shunt failure.
- ▶ Complete resolution can occur with shunt revision only.
- ▶ Identification can avoid shunt explantation, craniotomy and multiple surgeries as would be required if treated as a brain abscess.

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**Patient consent** Obtained.

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### REFERENCE

- 1 Iqbal J, Hassounah M, Sheikh B. Intraparenchymal pericatheter cyst. A rare complication of ventriculoperitoneal shunt for hydrocephalus. *Br J Neurosurg* 2000;14:255–8.

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