

Tension Pneumocephalus with Mount Fuji Sign

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Clinical History

The 81-year-old male presented with progressive headache and was diagnosed as bilateral chronic subdural hemorrhage (SDH). He has history of hypertension, coronary artery disease and hyperlipidemia. Burr-hole craniostomy for removal of SDH was performed. However, deteriorated consciousness and seizure happened after removal of bilateral external ventricular drainage (EVD) on postoperative Day 3. The brain computed tomography (CT) scan showed bilateral tension pneumocephalus with significant mass effect and Mount Fuji sign (Figure 1).

The patient underwent an emergency burr hole operation and the insertion of bilateral EVD. During the operation, the air bubbled out when the dura was opened. The patient's consciousness subsequently improved and postoperative CT imaging showed considerable reduction in the pneumocephalus with relieved mass effect. Finally, the patient discharged with recovery neurological condition on the admission Day 11.

Tension pneumocephalus is an uncommon and life-threatening neurological condition. The incidence of tension pneumocephalus developing after the evacuation of a chronic SDH ranged 0 to 16% [1,2]. The incidence of pneumocephalus increases in the patients aged over 60 years and those presenting with a midline shift more than 5 mm [2]. In the review of literature, several contributing factors including nitrous oxide anesthesia, duration of surgery, hydrocephalus, ventriculoperitoneal shunt, and intraoperative administration of mannitol are involved in the pathogenesis of tension pneumocephalus [3].

Clinically, tension pneumocephalus can cause headaches, nausea, vomiting, irritability, dizziness, and seizures. It is characteristically demonstrated on CT of the head with the Mount Fuji sign-bilateral subdural hypo-attenuation with compression of frontal gray matter and widening of the inter-hemispheric space between the frontal lobes. If tension pneumocephalus is not diagnosed early and treated properly, it can be fatal. Even after surgical intervention, the recurrence rate was 7.3% in one series [4].

The present case report underlines that early diagnosis of tension pneumocephalus and emergent surgical treatment are crucial to prevent life-threatening deterioration. It also highlights the noticeable complication during post-operation care of craniotomy.

References

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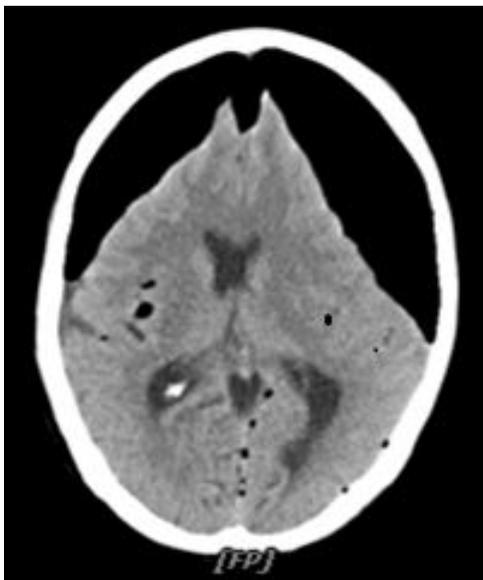


Figure 1: Bilateral tension pneumocephalus with significant mass effect and Mount Fuji sign.