

Superior Sagittal Sinus Obstruction as a Complication of Posterior Vault Distraction: Successful Treatment with De-Distraction

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References



Background

- Posterior vault distraction osteogenesis (PVDO) provides substantial intracranial volume expansion + relieves elevated intracranial pressure secondary to venous outflow obstruction
- Venous complications related to distraction vectors are rare and incompletely described in literature

Case Overview

- 15-year old female initially presented with cerebral venous sinus thrombosis secondary to mastoiditis
- Failed recanalization following antibiotics, anticoagulation, and mastoidectomy progressed to refractory intracranial hypertension
- Ventriculoperitoneal shunt placed followed by four shunt revisions due to failure and progression of symptoms, leading to diagnosis of slit ventricle syndrome
- PVDO performed and distraction proceeded to 29 mm over four weeks, ultimately complicated by narrowing of the superior sagittal sinus
- De-distraction was urgently performed + removal of one distractor
- Remaining hardware was removed four months later after confirmation of new bone formation at distraction sites

Imaging

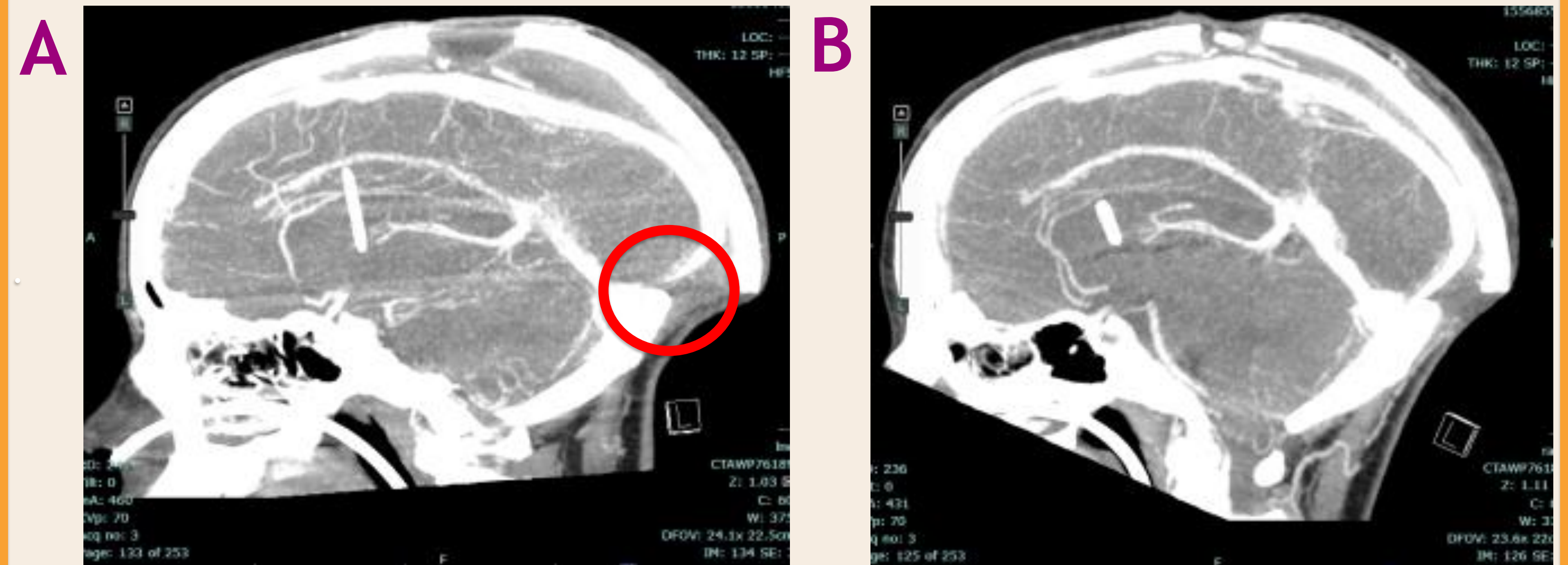


Image A revealing obstruction of the superior sagittal sinus followed by Image B demonstrating return of venous flow after de-distraction

Conclusions

- This case represents a novel strategy for management of superior sagittal sinus obstruction following PVDO
- Bony changes at distraction sites in patients with pre-existing sinus pathology can compromise the sinus, a complication uncommon in standard procedures
- Close radiographic surveillance and a low threshold to de-distract were essential to identify and manage this complication

