Transverse Dural Sinus Thrombosis
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History
Child with headache and otomastoiditis.

Diagnosis
Dural venous thrombosis secondary to mastoiditis

Discussion
The cerebral venous system consists of deep venous system, superficial venous system, and dural sinuses. The dural venous sinuses serve as the major venous drainage pathway. The right and left transverse sinus and superior sagittal sinus are more predisposed to thrombus formation. Transverse sinus thrombosis is more common than sagittal sinus thrombosis which is more common than thrombus of the deep venous system. Multiple sinuses were involved in more than 70% of patients. Imaging plays a primary role in the diagnosis of sinovenous thrombosis. Unenhanced CT, unenhanced TOF MR venography and contrast enhanced MR venography and CT venography are very useful techniques for detecting venous thrombosis.

The classic finding of sinus thrombosis on unenhanced CT images is hyperattenuation of the occluded sinus, but this sign is insensitive; hyperattenuation is present in only 25% of cases. If an increased attenuation in a sinus is present on unenhanced CT patient should be evaluated with enhanced CT or MRI studies. Unenhanced MR imaging is more sensitive for the detection of SVT than unenhanced CT because the absence of a flow void and the presence of altered signal intensity in the sinus are the key findings on MR imaging. In the acute stage of thrombus formation (0-5 days), the signal is predominantly isointense on T1-weighted images and hypointense on T2-weighted images because of deoxyhemoglobin in the thrombus. SVT progresses to cerebral venous infarction in approximately 50% cases. The mechanism for venous infarction is increased venous pressure in the affected region of the brain. Cytotoxic edema may also be present and could contribute to venous infarction. Thrombotic occlusion of the superior sagittal sinus or transverse sinus can interfere with the absorption of cerebral spinal fluid through impaired function of the arachnoid granulations leading to the further cerebral swelling.

Findings
CT-Right mastoid sinus disease with non-opacified transverse dural sinus.
MR-T1 hyperintense and T2 hypointense right transverse dural sinus with filling defect on post-gadolinium and MRV images.

Reference
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