

Case	(418) Thrombosis of the vein of Galen: a diagnostic challenge in the emergency room.
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CASE PRESENTATION

9-year-old male arrived at the hospital with a headache and alteration of consciousness. He had had a new onset of headache and episodes of retrograde amnesia one week before going to the emergency room.

He denied any preexisting systemic disease. The neurological examination revealed a drowsy state of consciousness and global amnesia. The other physical findings were unremarkable. No fever or systemic symptoms suggestive of infection were found.

Laboratory findings, including complete blood count, biochemical profiles, autoimmune and tumor markers were all within normal limits.

Emergent non-contrast enhanced brain CT revealed a hypodense bilateral thalamic lesion with edema. The hypodense lesion also involved the posterior arm of the right internal capsule. The deep great vein of Galen appeared hyperdense and distended.

The previously seen hypodense bilateral thalamic lesion showed no enhancement on the following contrast-enhanced CT, which was performed a few hours later. There was a filling defect noted within the distended great vein of Galen. Based on these findings, an impression of thrombosis of the Vein of Galen was made. The patient underwent anticoagulation therapy and recovered well from the neurological symptoms in a week.

DISCUSSION

Cerebral venous thrombosis is a rare disorder accounting for less than 1% of stroke cases. Deep cerebral venous thrombosis (DCVT) of Galen vein is an uncommon disorder manifested by bilateral thalamic infarcts, which can lead to poor outcomes without proper treatment. Due to the non-specific clinical findings, early diagnosis is usually difficult.

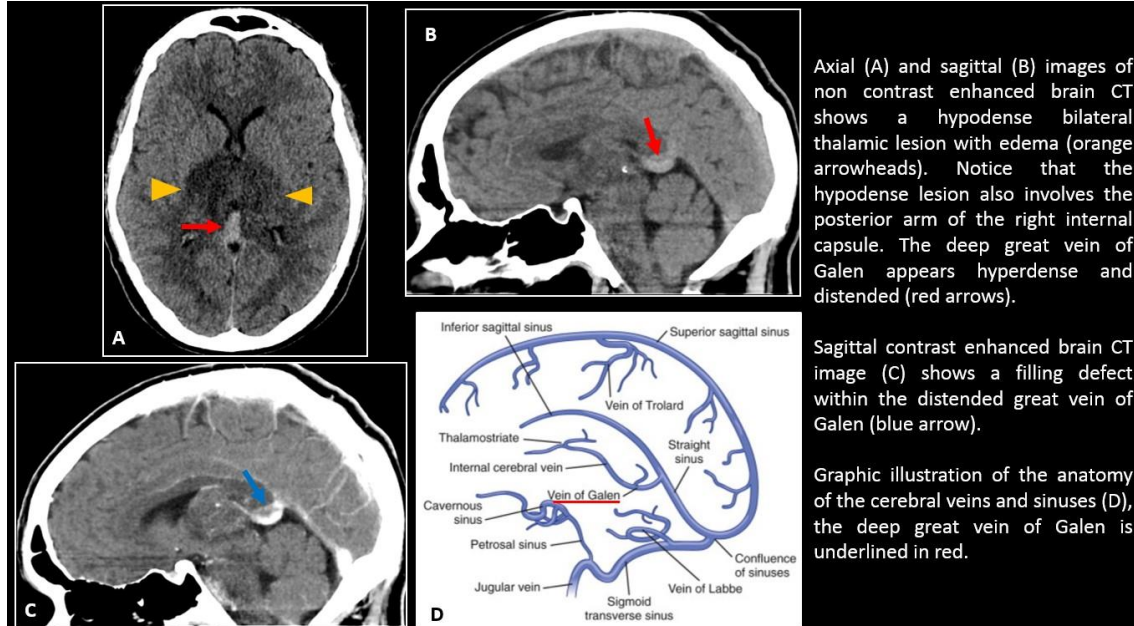
Deep cerebral veins drain the deep white matter, thalami and basal ganglia into bilateral internal cerebral veins, which are located in the roof of the third ventricle near the midline. The internal cerebral veins run posteriorly and then unite with each other and the basal vein of Rosenthal to form the vein of Galen.

The vein of Galen is a short structure passing under the splenium of the corpus callosum. It curves around the splenium and joins the inferior sagittal sinus to form the straight sinus. Isolated DCVT, which means thrombosis of deep cerebral veins without concomitant superior sagittal sinus involvement, typically makes venous infarction in bilateral thalami and sometimes basal ganglia with brain edema.

Also, the venous infarction can be associated more frequently with hemorrhagic transformation than with arterial infarction.

CONCLUSION

DCVT is a rare, potentially fatal disease that early diagnosis is essential for timely treatment. When there are infarcts with edema involving bilateral thalami or basal ganglia, one should have DCVT on the list of differential diagnosis.



Axial (A) and sagittal (B) images of non contrast enhanced brain CT shows a hypodense bilateral thalamic lesion with edema (orange arrowheads). Notice that the hypodense lesion also involves the posterior arm of the right internal capsule. The deep great vein of Galen appears hyperdense and distended (red arrows).

Sagittal contrast enhanced brain CT image (C) shows a filling defect within the distended great vein of Galen (blue arrow).

Graphic illustration of the anatomy of the cerebral veins and sinuses (D), the deep great vein of Galen is underlined in red.

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