

Case	(039) Acute cerebral venous sinus thrombosis in the emergency department: how to avoid underdiagnosis?
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CASE PRESENTATION

A 15 year-old-man, with history of acute lymphocytic leukemia in treatment with Asparaginase and Cytarabine presented to the Emergency Department (ED) with headache that worsened with effort. The patient's hematocrit was noted to be 28,5 %.

A non-enhanced brain computed tomogram (CT) showed hyperdense venous superior sagittal sinus and cortical veins (Figure 1). A region of interest (ROI) placed in the superior sagittal sinus measured 60 Hounsfield Unit (HU) and the Hounsfield unit-tohematocrit ratio (H:H ratio) was 2.2. Based on these findings, diagnosis of cerebral venous thrombosis (CVT) was made.

DISCUSSION

CVT may have an atypical presentation or even absence of clinical symptoms. The imaging findings are often subtle, and non-enhanced CT has a sensitivity of 64.6%. Underdiagnosis of cerebral venous thrombosis can lead to severe consequences such as hemorrhagic infarction.(1)

A moderate increase in attenuation may indicate CVT. To avoid possible false-negative or false-positive imaging findings on unenhanced CT scans, Buyck et al.(2)proposed active attenuation measurement within the dural sinuses, as it can be helpful in the detection of acute CVT. A threshold of 62 HU was established to discriminate patients with acute CVT from those without. They also suggested the routine calculation of the H:H ratio to increase the sensitivity of non-contrast CT of the brain in the diagnosis of CVT. Their results showed an optimal threshold of 1.52, with a sensitivity of 95%, specificity of 100%, and accuracy of 97.5%. (2)

CONCLUSION

The use of density measurements in the venous sinus and the calculation of the H:H ratio may be helpful in the diagnosis of the patient with CVT.

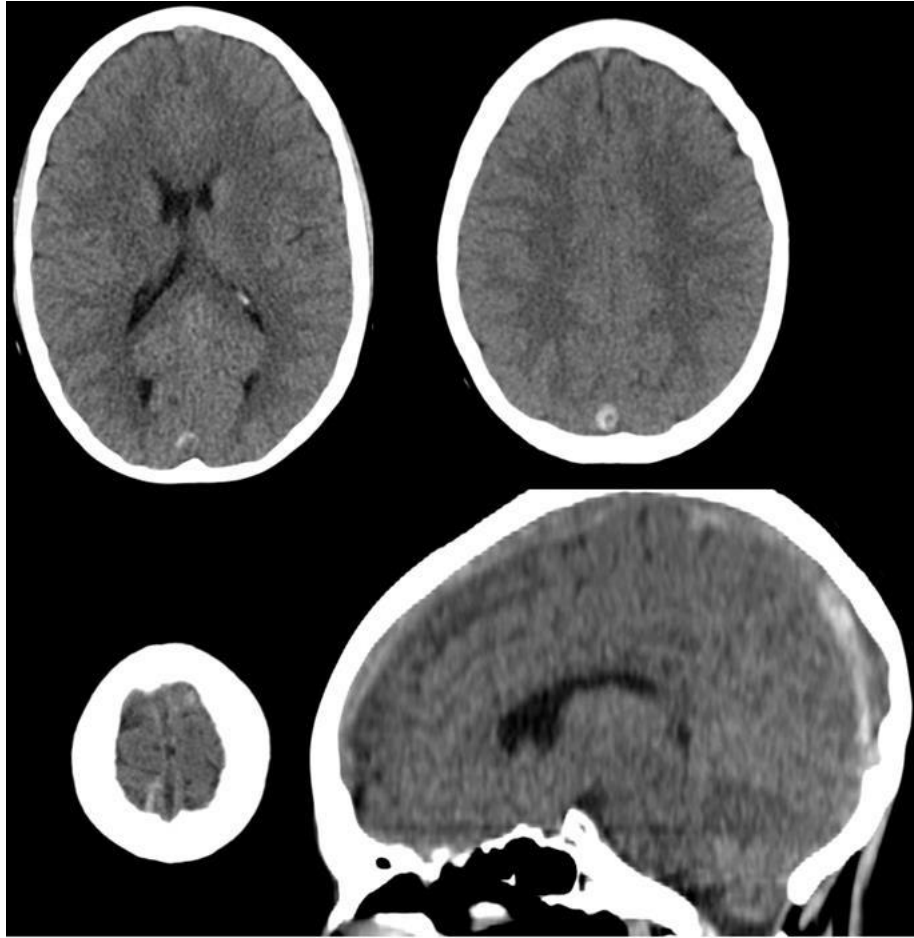


Figure 1: Axial image from a non-contrast CT of the head shows hyperdense superior sagittal sinus and cortical veins. Hospital La Fe.

BIBLIOGRAPHY

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