

## Special Article - Thrombosis

# Cerebral Hemorrhage in a Patient with Thrombocytopenia

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## Clinical Image

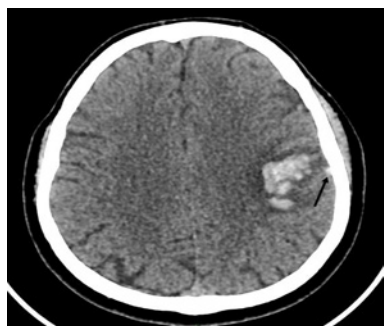
A 57-year-old man, presenting essential thrombocythemia (thrombocytosis:  $330-590 \times 10^9/L$ ; JAK2V617F positive), had acute onset of aphasia and headache.

A brain CT-Scan was performed (Figure 1a&b).

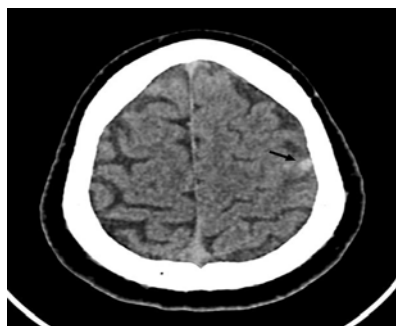
What diagnosis is evoked? What exploration is required?

CT showed a fronto-parietal hematoma and a hyperdense dot over the right fronto-parietal convexity (Figure 1a&b, arrow).

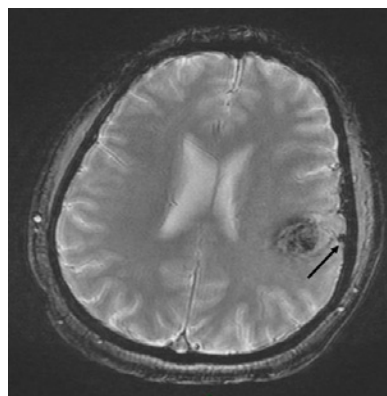
MRI T2' sequence identified, adjacent to the hematoma, a hypointense cord (Figure 1c,d&e) which allowed the diagnosis of Cortical Vein Thrombosis (CoVT). MR venography and 3-Dimensionnal post-contrast T1 sequence showed the patency



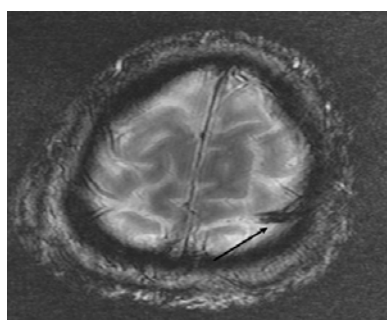
**Figure 1a:** Axial non-contrast Brain-Computed Tomography (CT) shows a left fronto-parietal hematoma with a moderate surrounding edema and an adjacent hyperdense dot on the fronto-parietal convexity (arrow).



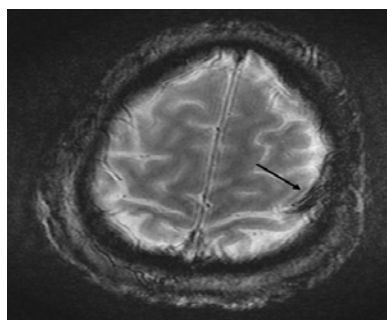
**Figure 1b:** Axial non-contrast Brain-CT shows a hyperdense dot (arrow) lying on the left frontal cortex, suggesting a thrombus within a cortical vein.



**Figure 1c:** T2' (T2-gradient-echo=T2 GRE) Magnetic Resonance Imaging (MRI) sequence shows the subcortical parenchymal hemorrhage appearing as a very hypointense (black) mass and at the convexity a black dot due to the susceptibility effect on T2 GRE sequence (arrow), confirming the diagnosis of thrombosis of a cortical vein.

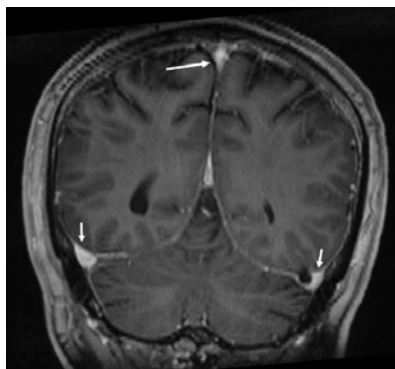


**Figure 1d:** T2 GRE Magnetic Resonance Imaging (MRI) sequence shows a very hypointense (black) cord lying on the left frontal cortex, consistent with a thrombus within a cortical vein of the left frontal convexity (arrow).



**Figure 1e:** T2' (T2 GRE) Magnetic Resonance Imaging (MRI) sequence shows a very hypointense (black) cord lying on the left frontal cortex, consistent with a thrombus within a cortical vein of the left frontal convexity (arrow).

of intracranial venous sinuses, indicating isolated CoVT (ICoVT) (Figure 1f).



**Figure 1f:** Coronal reformat from a 3-Dimensionnal post-contrast T1 MRI sequence shows the patency of the intracranial venous sinuses: Superior sagittal sinus (long arrow) and lateral sinuses (short arrows).

What treatment is required?

Anticoagulation with therapeutic doses of heparin and correction of predisposing factor, i.e, essential thrombocythemia in this case.

#### Comments

Thrombocytomia is a risk factor for cerebral venous thrombosis [1].

ICoVT, a rare occurrence, may be easily missed due to its confounding radiological findings.

T2' MRI sequence is essential for the diagnosis of ICoVT [2-4].

Anticoagulation, even in patients with cerebral hemorrhage, is the therapeutic of choice [5,6].

#### References

1. Passamonti SM, Biguzzi E, Cazzola M, Franchi F, Gianniello F, Bucciarelli P, et al. The JAK2 V617F mutation in patients with cerebral venous thrombosis. *J Thromb Haemost.* 2012; 10: 998-1003.
2. Boukobza M, Crassard I, Bousser MG, Chabriat H. MR imaging features of isolated cortical vein thrombosis: diagnosis and follow-up. *AJNR Am J Neuroradiol.* 2009; 30: 344-348.
3. Singh R, Cope WP, Zhou Z, De Witt ME, Boockvar JA, Tsiouris AJ. Isolated cortical vein thrombosis: case series. *J Neurosurg.* 2015; 123: 427-433.
4. Kim J, Huh C, Kim D, Jung C, Lee K, Kim H. Isolated Cortical Venous Thrombosis as a Mimic for Cortical Subarachnoid Hemorrhage. *World Neurosurg.* 2016; 89: 727.e5-7.
5. Coutinho JM. Cerebral venous thrombosis. *J Thromb Haemost.* 2015; 13: S238-244.
6. Bushnell C, Saposnik G. Evaluation and management of cerebral venous thrombosis. *Continuum (Minneap Minn).* 2014; 20: 335-351.