# CORTICAL INFARCTS MIND THE VEINS: A CASE OF ISOLATED CORTICAL VEIN THROMBOSIS

**Mastronardi A, Iaffaldano A, Francavilla T, Guido M, Medicamento N, Simone IL and Tortorella C**

*Department of Basic Medical Sciences, Neuroscience and Sense Organs - University of Bari "Aldo Moro" - Bari*

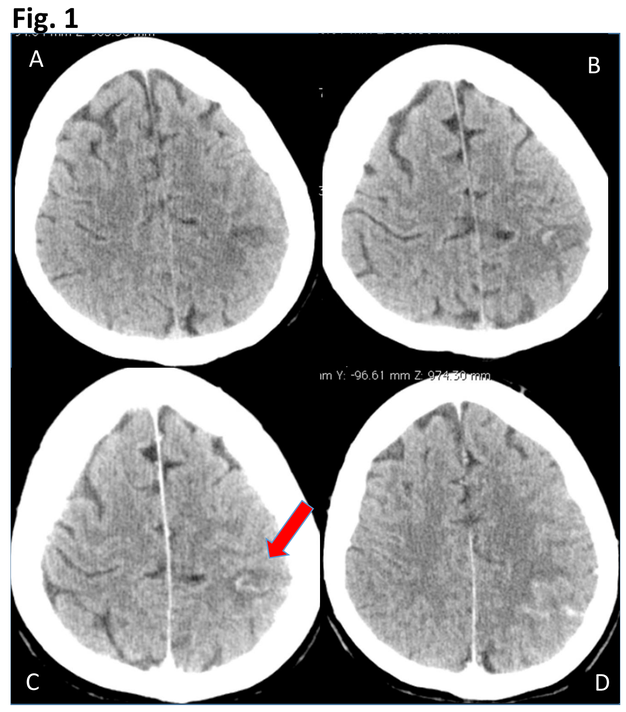
## Background

Cerebral venous thrombosis (CVT) is a rare disease, which accounts for <1% of all strokes, consisting in thrombotic occlusion of dural venous sinuses, cortical veins or deep cerebral veins. Female gender, use of oral contraceptive therapy, especially in association with obesity are established risk factors. CVT without occlusion of the major dural venous sinuses or deep cerebral veins is termed isolated cortical vein thrombosis (ICVT). ICVT is very rare and its diagnosis is difficult by using conventional computed tomography (CT) and magnetic resonance imaging (MRI). In more than half of the cases of all CVT, the thrombosis is associated to parenchymal infarction of the region involved, not rarely combined with hemorrhage. Parenchymal brain lesions have been found to be more common in ICVT cases than in sinus thrombosis cases. Prognosis strictly relates to early diagnosis and treatment.

## Case Report

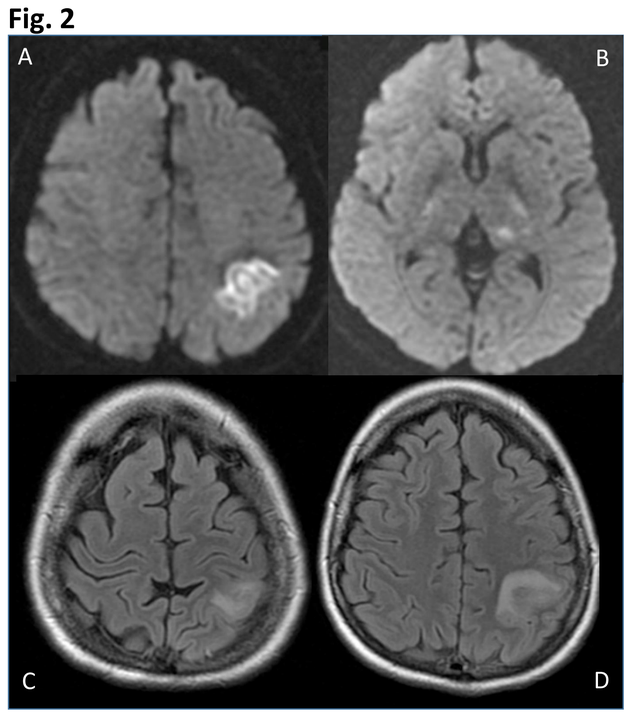
We present a case of a 36-old age woman, previously healthy. She came to our observation because of sudden onset of disturbance of speech and right harm weakness, without headache or consciousness disturbance. She had family history of cerebrovascular disease (her father and grandfather had arterial stroke). She was obese (BMI 32) and on oral contraceptive therapy. Neurological examination showed global aphasia and mild right hemiparesis. Brain CT scan revealed a cortical ischemic lesion in the left parietal lobe with hemorrhagic spots, perilesional edema and gyral enhancement (**Fig.1**). On MRI the lesion was FLAIR-hyperintense and showed restricted signal on DWI scans; another smaller ischemic lesion was identified in the left thalamus (**Fig.2**). Both CT and MRI angiography were normal. The CT and MR venous phase showed a thrombus involving a cortical vein in the corresponding area jutting into the superior sagittal sinus, which was only partially occluded (**Fig.3**). Complete blood tests for thrombophilia, coagulation profile and connective tissue diseases were all normal. Malignancy and infections were excluded. Anticoagulant therapy was started, and oral contraceptive therapy interrupted. At discharge, no neurological deficits resulted.

**Fig. 1**




**A-B: non-contrast CT scan.**
**C-D: post-contrast CT scan.**

**Fig. 2**




**A-B: Brain MRI, DWI sequences.**
**C-D: Brain MRI, FLAIR sequences.**

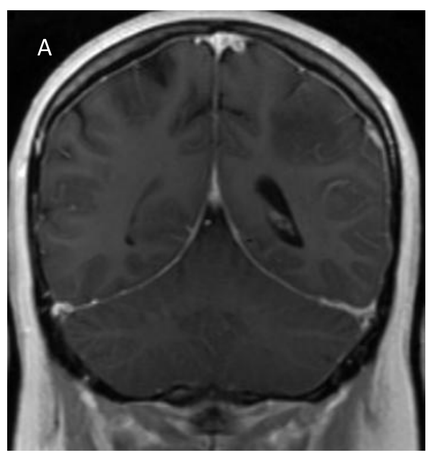
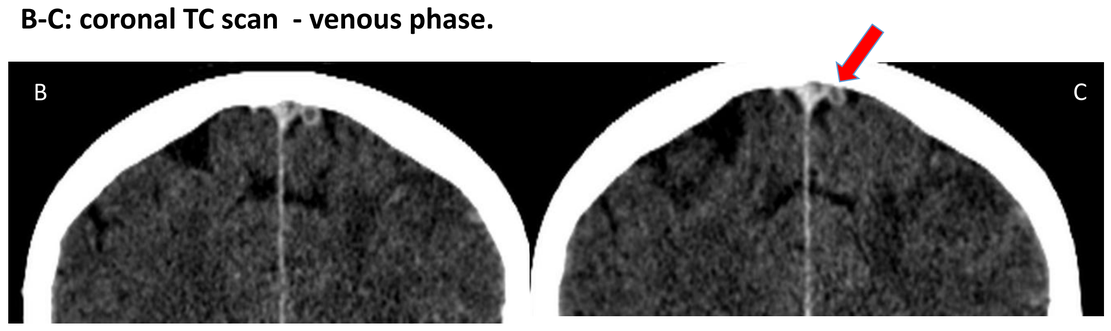



**Fig 3**
**A: coronal MRI - venous phase.**
**B-C: coronal TC scan - venous phase.**




## Conclusions

Cerebral venous thrombosis is a quite uncommon cause of acute cerebrovascular events. CVT should be considered in obese young women who experience stroke, especially if oral contraception is ongoing. Differentiating venous infarct due to ICVT from arterial infract is difficult on clinical ground, but it is extremely challenging because of therapy implications. Early anticoagulant therapy is essential, even in isolated cases in which intracerebral hemorrhage coexists.

## References

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