Arq Neuropsiquiatr 2011;69(3):563-569

Deep cerebral venous thrombosis

A challenging diagnosis

Arnaldo Pires[1], Sofia Rocha[2], Margarida Rodrigues[2], Álvaro Machado[2], Esmeralda Lourenço[2], Carla Ferreira[2]

Deep cerebral venous thrombosis (DCVT) of internal cerebral vein, without involvement of the superior sagittal sinus is a rare disorder and may be associated with poor prognosis[1].

CASE

We report the case of a 47 years-old female patient with a last medical history for peripheral venous thrombosis. She denied smoking or alcohol habits but took oral contraceptives. No family history of similar events. She sought medical attention at the emergency department (ED) for headache, vomiting and confusional syndrome.

She remained bedridden at home with persistent headache, vomiting and postural imbalance. The headache was holocranial, pressure type, at first gradual and then with progressive deterioration and no relieving or aggravating factors. Three weeks later noted a confusional syndrome. At the ED on physical examination found her awake, disoriented, with apathy following simple orders, but unable to execute complex orders; decreased fluency of speech, but without naming errors. A right hemiparesis was apparent. No other neurological signs were found. She was hemodynamically stable and afebrile.

Brain CT scans (Fig A) revealed symmetrical thalamic and midbrain hypodensities associated with hyperdensity of Galen vein and straight sinus. MRI (Fig B) showed DCVT of Galen vein, rectus sinus, internal cerebral veins and right lateral sinus.

Anticoagulation with intravenous heparin was started.

Investigation was negative for thrombophilia, autoimune diseases or infections.

She was discharged 14 days later, after presenting a steady improvement, only with a slight decrease of speech fluency. Warfarin and discontinuation of oral contraceptives were advised.

DISCUSSION

The pathogenesis of venous infarct is related to vasogenic edema, parenchymal injury and dysfunction caused by disruption of the blood-brain barrier and rupture of veins[2].

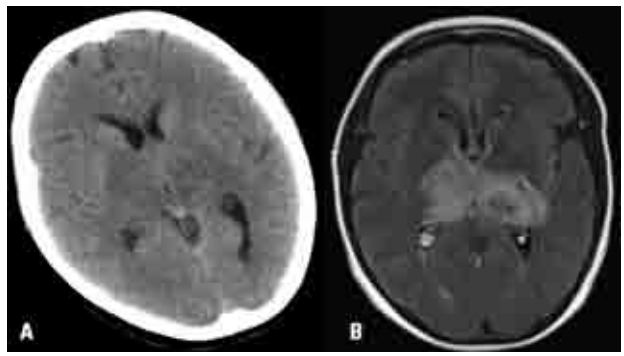

Figure. Capsular and thalamic simmetrical hypodensities on CT and MRI.

Clinical presentation is variable and may be acute, sub-acute or chronic. Headaches are the most frequent symptom. Focal neurological deficits, seizures and encephalopathy with loss of consciousness or coma are also part of the clinical spectrum[2].

Etiology is usually multifactorial and risk factors include pro-thrombotic conditions, anti-conception pill use, pregnancy, malignancies, infections among others[2].

DCVT is a rare disorder whose clinical features are nonspecific. DCVT causes symmetrical strokes, usually, affecting thalamus, basal ganglia and the surrounding white matter. Diagnosis is confirmed by abnormal signal of the venous sinus on MRI. Tomography is normal in 30% of the cases[1-3].

Standard treatment is heparin. Endovascular thrombolysis can be performed when there is clinical deterioration.

Prognosis is good, although worst in the DCVT and worse, if associated with infection of the central nervous system, malignant neoplasm, cerebral hemorrhage or Glasgow <9 on admission. The risk of recurrence is low. Anticoagulation should be maintained with warfarin for 3 to 6 months if there is a transient risk factor[2].

In this case the initially nonspecific symptoms were under-interpreted by the patient and her family. Further deterioration of consciousness and a typical neuroimaging of DVCT facilitated the diagnosis. Oral anti-conception was the risk factor. Early diagnosis and prompt treatment are essential to avoid devastating situations[4,5].

REFERENCES

1. Spearman MP, Jungreis CA, Wehner JJ, Gerszten PC, Welch WC. Endovascular thrombolysis in deep cerebral venous thrombosis. Am J Neuroradiol 1997;18:502-506.
2. Bousser MG, Ferro JM. Cerebral venous thrombosis: an update. Lancet Neurol 2007;6:162-170.
3. Herrmann KA, Sporer B, Yousry TA. Thrombosis of the internal cerebral vein associated with transient unilateral thalamic edema: a case report and review of the literature. Am J Neuroradiol 2004;25:1351-1355.
4. Rafique MZ, Bari V, Ashraf A, Ahmed MN. Cerebral deep venous thrombosis: case report and literature review. J Pak Med Assoc 2005;55: 399-400.
5. Lacour JC, Ducroq X, Anxionnat R, Taillandier L, Auque J, Weber M. Thrombosis of deep cerebral veins in form adults: clinical features and diagnostic approach. Rev Neurol 2000;156:851-857.

TROMBOSE VENOSA PROFUNDA CEREBRAL: UM DIAGNÓSTICO DESAFIANTE

[1]Internal Medicine Department; [2]Neurology Department, Braga, Portugal.

Correspondence: Arnaldo Pires - Av. de São Miguel 37 / 4° direito - 4710-489 Braga - Portugal. E-mail: arnpires@gmail.com

Received 19 November 2010. Received in final form 8 February 2011. Accepted 15 February 2011.