

Neurosciences Quiz

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Notice: Authors are encouraged to submit quizzes for possible publication in the Journal. These may be in any field of Clinical Neurosciences, and should approximately follow the format used here. Please address any submissions to the Assistant Editor, Neurosciences Journal, Riyadh Armed Forces Hospital, PO Box 7897, Riyadh 11159, Kingdom of Saudi Arabia.
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A patient with recurrent deep vein thromboses and seizures

Case Presentation

A 48-year-old female patient presented to the Emergency room with recurrent grand mal seizures followed by left hemiparesis (upper limb 2/5; lower limb 3 – 4/5). She had a history of recurrent iliofemoral deep vein thrombosis (DVT), not related to pregnancy, once in 1984 with pulmonary embolism, and in 1988 and 2000. Complete blood count, erythrocyte sedimentation rate, C-reactive protein, kidney and liver function tests as well as baseline PT/PTT were all normal. An urgent CT brain followed by MRI and MRV of brain were performed (Figures 1-4).



Figure 1.

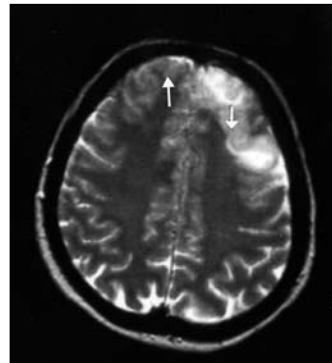


Figure 2.

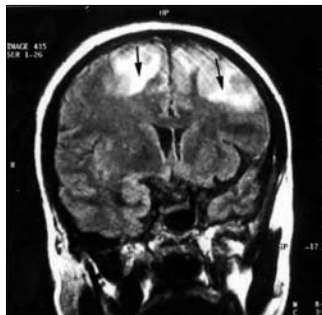


Figure 3.

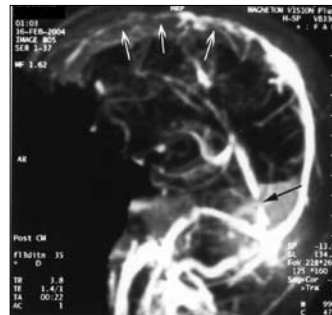


Figure 4.

Questions:

- What are the radiological findings?
- What is your radiological diagnosis?
- What is the final diagnosis?

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Answers

A. Findings:

- Figure 1:** Axial CT brain shows cortical hemorrhage with brain edema in both frontal lobes, more on the left, in keeping with hemorrhagic infarct.
- Figure 2:** Axial T2 brain MRI shows cortical high signal in both frontal lobes, more on the left.
- Figure 3:** Coronal FLAIR MRI brain shows high signal in the cortex of both frontal lobes more on the right.
- Figure 4:** MRV brain shows non-visualization of the anterior part of the superior sagittal sinus with a filling defect in the straight sinus.

B. Radiological diagnosis:

Hemorrhagic infarct secondary to venous sinus and cortical vein thrombosis.

The patient was immediately started on intravenous Heparin. A hypercoagulable state was suspected (antiphospholipid syndrome) due to history of previous recurrent DVTs despite the absence of family history of DVT or history of recurrent abortions or thrombocytopenia. Serum antinuclear antibodies, RF and Venereal Disease Research Laboratory were negative. A thrombophilia screen (anticardiolipin antibody, lupus anticoagulant, antithrombin III, protein C and S, serum homocysteine and activated protein C resistance) was performed: all the results were negative except positive anticardiolipin antibody.

C. Final diagnosis:

Antiphospholipid syndrome (without systemic lupus erythematosus) complicated by venous sinus and cortical vein thrombosis. The patient was started on warfarin (INR 2–3) and she clinically improved.

Discussion

Cerebral venous thrombosis (CVT) has an annual incidence in adults of 0.22/100,000, therefore approximately 5-10 patients with CVT are likely to be admitted each year to a tertiary care center. Clinically, it may present with isolated intracranial hypertension, focal or generalized seizures or focal deficit, or both, such as mono or hemiparesis or aphasia and cavernous sinus syndrome – oculomotor palsies (-,+), fifth cranial nerve pain or sensory loss (-,+), proptosis or chemosis. A CT brain may be normal or show intracerebral hemorrhages, infarcts or focal or diffuse brain edema. An MRI/MRV is usually required to confirm the diagnosis of CVT by showing any parenchymal lesions as well as the thrombus and the non-filling vessel. Predisposing conditions are women taking oral contraceptives, pregnancy and the puerperium, ear or sinus infections, cancer and hematological conditions such as an acquired prothrombotic states (antiphospholipid antibody syndrome). Treatment is with anticoagulation.

References

1. Bousser MG. Cerebral venous thrombosis. In: Fisher M, Bogousslavsky J, editors. Current Review of cerebrovascular disease. 3rd ed. Boston (MA): Butterworth Heinemann; 1999. p. 129-135.
2. Bousser MG, Russell RR. Cerebral venous thrombosis. In: Warlow CP, Van Gijn J, editors. Major Problems in Neurology. Vol. 33. London (UK): W. B. Saunders; 1997. p. 27-29, 104-126.