False-positive ‘cord sign’

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DESCRIPTION

A 26-year-old man with complex cyanotic congenital heart disease (Ostium secundum atrial septal defect with pulmonary and tricuspid atresia) presented with an acute onset of holocranial headache and vomiting. He had conjunctival plethora (figure 1A), central cyanosis and clubbing. Fundus showed no papilloedema. There were no focal neurological deficits. His haemoglobin and haematocrit were 17.5 g/dl and 58%, respectively. Chest roentenograph showed a ‘boot-shaped heart’ (figure 1B). Non-contrast CT scan of head showed hyperdense cortical vein, superior sagittal (figure 1C) and bilateral transverse sinuses (‘Cord sign’; figure 1D). Gadolinium-enhanced MR venogram revealed no thrombus (figure 1E). Headache subsided with adequate hydration and institution of analgesics (oral paracetamol 650 mg daily for 5 days). ‘Cord sign’ appears as the result of increased attenuation in either the dural sinuses or a vein filled with thrombus on unenhanced cranial CT scan.1 False-positive ‘cord sign’ may occur with elevated haematocrit (polycythemia, dehydration) as was noted in this patient.

Learning points

▸ ‘Cord sign’ refers to increased attenuation in either dural venous sinuses or a vein filled with thrombus on unenhanced cranial CT.

▸ Diagnostic utility of ‘Cord sign’ is hampered by false-positives as in clinical conditions associated with elevated haematocrit.

▸ ‘Cord sign’ positivity on CT has to be reconfirmed with gold-standard investigations like MR/CT venography whenever available.

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REFERENCE


Figure 1 (A) Clinical photograph depicting conjunctival plethora. (B) Chest roentenograph postero/anterior view showing ‘boot shaped heart. Non-contrast cranial CT scan showing (C) hyperdensities in cortical vein (arrow), superior sagittal and (D) bilateral transverse sinuses (arrow). (E) Gadolinium-enhanced MR venogram showing clogging of blood in venous sinuses without evidence of acute thrombus.