Posterior reversible encephalopathy in an adult patient with poststreptococcal glomerulonephritis

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DESCRIPTION

A previously healthy 32-year-old man presented to the hospital with cough, sore throat, facial swelling and intermittent fever for 1 week. Initial physical examination revealed blood pressure of 160/98 mm Hg, erythematous throat, bilateral periorbital swelling, right basilar crackles and no neurological abnormalities. Laboratory tests were remarkable for leucocytosis (13 320 cell/mm^3), hyperkalaemia (5.2 mmoL/L), azotemia (Cr 2 mg/dL), haematuria (urine red blood cells of 50–100 cells/high power field) and proteinuria (urine protein/creatine ratio >7 g/gCr). Chest X-ray showed right lower lobe pneumonia with parapneumonic effusion. The patient was admitted for community-acquired pneumonia, non-oliguric acute kidney injury and nephritic syndrome. Later, antistreptolysin O was found to be elevated (1610 IU/mL) and the patient was diagnosed with poststreptococcal glomerulonephritis.

On day 2 of hospitalisation, he developed headache, blurred vision and confusion, followed by a tonic–clonic seizure. The blood pressure recorded before the seizure was 138/98 mm Hg. Brain CT showed decreased white matter attenuation of the bilateral parieto-occipital and frontoparietal lobes consistent with vasogenic oedema. Brain MRI (figure 1) findings were consistent with posterior reversible encephalopathy syndrome: hyperintensities in the bilateral posterior frontal, parietal and occipital lobes, as well as watershed regions. The patient was treated with moxifloxacin for a community-acquired pneumonia, pigtail catheter drainage for a large amount of right-side transudative pleural effusion, amlodipine for blood pressure control and phenytoin for seizure prophylaxis. The patient's blood pressure was kept below 150/90 mm Hg during his hospital stay. The patient recovered gradually and was discharged home without any neurological deficit after 7 days.

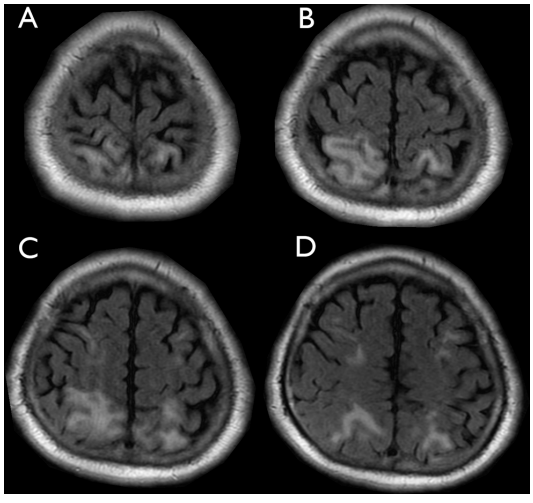

Figure 1 Brain MRI (A–D films) showing hyperintensities in the bilateral posterior frontal, parietal and occipital lobes, as well as watershed regions.

Learning points

- Awareness of posterior reversible encephalopathy syndrome (PRES) has recently increased worldwide. PRES is likely a consequence of an abnormal cerebral autoregulation, with hypertension or relative blood pressure increase, leading to a damage of the blood–brain barrier allowing leakage of blood and fluid into the brain parenchyma.[1–3] It predominantly affects the posterior cerebral circulation where the endothelium is believed to be less resistant to high blood pressure.
- PRES is associated with severe high blood pressure, autoimmune diseases, immunosuppressive medications, eclampsia and renal failure. Among these several factors, only around 10% of cases are not related with significant high blood pressure as in this case. Although poststreptococcal glomerulonephritis has been described previously as a very rare association with PRES in children,[3] to our knowledge this is the first published case with PRES clearly associated with a poststreptococcal syndrome in an adult.
- PRES should be part of the differential diagnosis in any patient with new onset of mental status change, blurred vision or seizures regardless of the blood pressure at symptom onset. Brain MRI is warranted to confirm the suspicion. Regardless of the aetiology, treatment consists of blood pressure control and aetiology-specific therapy.[1–3]

Contributors All the authors participated in the direct care of the case and identified the case. HAR, JW and CS wrote up the case with literature review. JH supervised the whole process and reviewed the final manuscript with all the authors.

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