Pediatric Nephrology (2019) 34:1033
https://doi.org/10.1007/s00467-018-4137-6

CLINICAL QUIZ

Spinal cord lesions in a pediatric patient with chronic kidney disease and review of literature: Questions

Harmanpreet Tiwana[1] · Himadri Patel[1] · Sheila Asghar[1] · Ashutosh Kumar[1] · Michael Freeman[1]

Received: 5 October 2018 / Accepted: 30 October 2018 / Published online: 15 November 2018

Case summary A 14-year-old female with no significant past medical history presented with a 2-week history of generalized abdominal pain followed by bi-frontal headaches with nausea, vomiting, and blurred vision. Significant findings on examination included elevated blood pressure of 220/100 and tenderness to palpation over entire abdomen without guarding or rigidity. Neurological examination was unrevealing. Funduscopic examination showed cotton wool spots and Elschnig's spots consistent with chronic and acute hypertension respectively. Initial laboratory studies demonstrated a creatinine of 1.74 which improved to 1.2–1.4 over the subsequent days. She was started on a continuous Nicardipine drip for initial therapy of her hypertension and was subsequently transitioned to a combination of amlodipine and carvedilol therapy. Her evaluation included a renal ultrasound which showed a right kidney which was 10.7 cm and a left kidney which was 8.6 cm in length with bilaterally decreased corticomedullary differentiation, computed tomography (CT) of the abdomen showed no evidence of renal artery stenosis, and an x-ray voiding cystourethrogram showed persistent grade 3 vesicoureteral reflux of the right renal collecting system and intermittent grade 3 reflux of the left renal collecting system. An echocardiogram demonstrated concentric left ventricular hypertrophy with a left ventricular mass index (LVMI) of 45.7. The day after presentation, she complained of intermittent numbness and tingling in her extremities with urinary retention and her neurologic examination revealed hyperreflexia with 5–6 beats bilateral ankle clonus. Magnetic resonance imaging (MRI) of the brain demonstrated subcortical white matter FLAIR hyperintensities, more pronounced in the bilateral parietal lobes and in bilateral anterior medulla oblongata (Fig. 1a). Additionally, hyperintensity was noted in the cervical segment of spinal cord along with long segment abnormality involving the ventral thoracic cord (Fig. 1b).

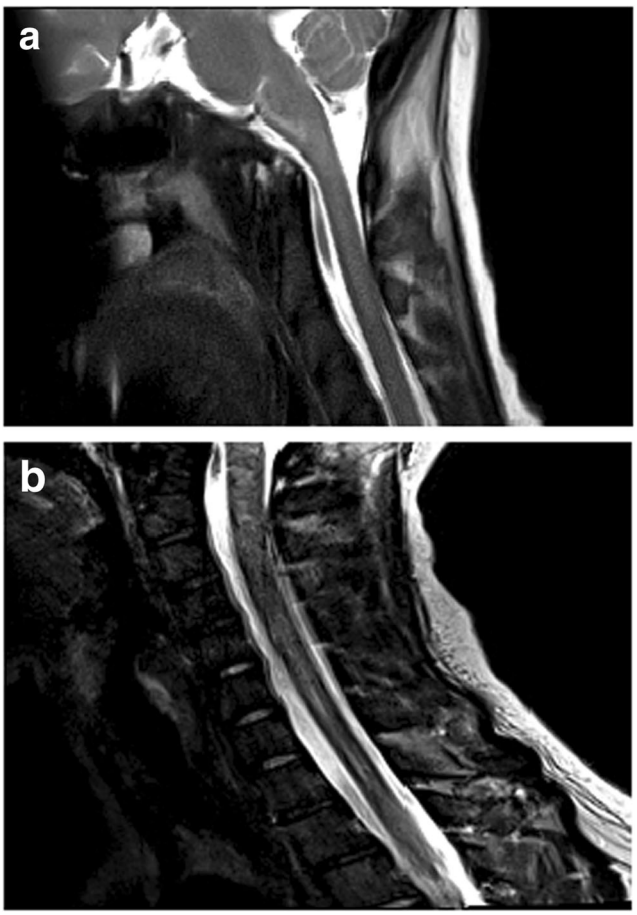

Fig. 1 **a** Magnetic resonance imaging (MRI) T2-weighted sagittal section of the cervical spine showing hyperintensity of the anterior medulla. **b** MRI T2-weighted sagittal section of the cervical spine showing hyperintensity of the cervical and thoracic cord

Question

1. What would be the differential diagnosis based on clinical examination and MRI findings?
2. What would be the next step in evaluation?
3. What is the prognosis?

The answers to these questions can be found at https://doi.org/10.1007/s00467-018-4138-5.

✉ Harmanpreet Tiwana
htiwana@pennstatehealth.psu.edu

[1] Penn State Milton S. Hershey Medical Center, 500 University Drive, Hershey, PA 17033, USA

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.