Posterior Reversible Encephalopathy Syndrome in a Kidney Transplant Recipient

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Case Presentation

23-year old male - Living Donor Kidney Transplant

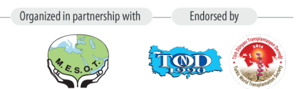
- **Primary disease: RPGN**

- **ESKD on KRT - Hemodialysis**, four years prior to kidney transplantation
    - During his time on hemodialysis persistently elevated BP
    - Requring >3 antihypertensive medications
    - Poor compliance
    - **During the last year on HD, prior to KTx,** on irbesartan, amlodipine, hydralazine, metoprolol, moxonidine, minoxidil **and with improved compliance his BP remained stable at 120/80 mmHg.**

- **Living donor**: Mother

- **Induction therapy**: rATG

- **Maintenance therapy**: Tacrolimus, MMF, Prednisone



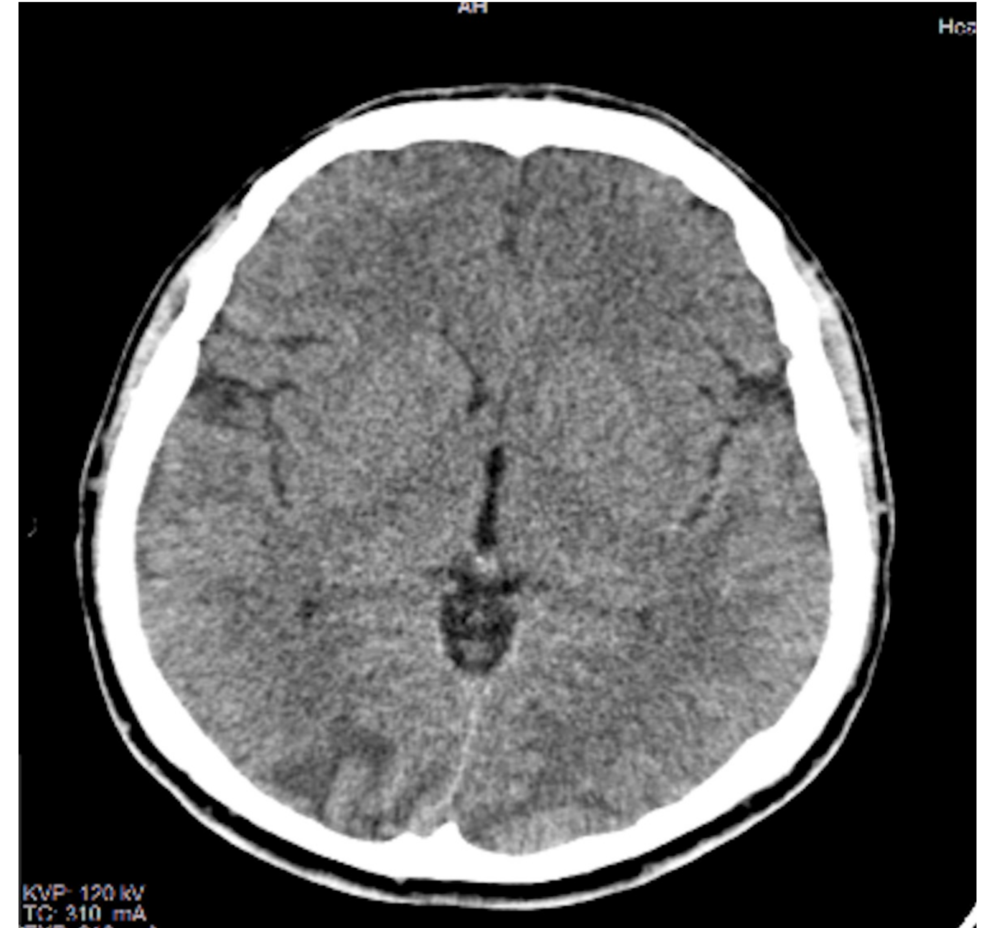
Case Presentation

- Open surgery and early post-op period were uneventful
- Graft functioned immediately. **Urine output was established and renal function started stabilizing.**
- On PCA pump that was removed on POD 2.
- **On POD 3,** he developed acute abdominal pain. During these episodes, he developed high blood pressure as well, up to 170/100 mmHg. Imaging exams were normal and the pain was eventually attributed to transient, opiod-related bowel dysfunction.
- **On POD 4** the patient was stable and BP was within normal range.
- **On POD 5** the patient developed preceeding *visual disturbances and headaches*, followed by *altered consciousnes* and *generalized tonic-clonic seizures*. IV lorazepam was immediately administered and he was transferred to the ICU.
- At the time, renal function (creatinine - 1.35 mg/dL) and blood pressure (PA - 120/70 mmHg) were stable.
- Tacrolimus trough levels - 8.6 ng/dL.
- Neurology consult recommended a head CT that revelead findings suggestive of PRES.

Imaging Findings

Post-ictal period

- 2-3 min following the seizures his vitals were:
  - BP - 150/90 mmHg
  - HR - 110 bpm
  - RR - 17 breaths/min
  - O2 Sats - 97%
  - Temp - 36.6 oC
- **ABG** - pH - 7.35, bicarb - 22 mmol/L, glucose - norm, lact - 6 mmol/L
- Head CT revealed **<u>cortical and subcortical hypoattenuating areas</u>** in *posterior parietal* and *occipital* regions.
- He was started on maintenance therapy with Levetiracetam and blood pressure therapy was optimized. Tacrolimus target levels - 7-8 ng/mL.



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Key Takeaways

- PRES is a reversible, but serious and uncommon complication in kidney transplantation.

- KTx patients do not necessarily need to have toxic serum levels of CNIs or elevated BP at the time of diagnosis to develop PRES.

- Nevertheless, rigorous monitoring of CNI levels and blood pressure is paramount.

- A high index of clinical suspicion and prompt management of the condition, usually lead to favorable outcomes, full neurological recovery and no sequelae.