Eosinophilia in a peritoneal dialysis patient: Questions

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Case presentation

A 3-year-, 5-month-old boy who is treated with chronic peritoneal dialysis was found to have severe eosinophilia.

At the age of 5 weeks, he underwent a medical work-up because of peripheral edema and was diagnosed with congenital nephrotic syndrome due to a homozygous mutation in the *NPHS1* gene (Finnish-type nephrotic syndrome). He was treated intravenously with albumin and enoxaparin subcutaneously until his kidney function deteriorated and he reached end-stage kidney disease. At the age of 2 years and 5 months, a Tenckhoff catheter was inserted and peritoneal dialysis started. He was treated with nightly intermittent peritoneal dialysis (NIPD) for a year, with reasonable somatic growth and adequate dialysis clearance and ultrafiltration. His peritoneal dialysate solutions were glucose based (Dianeal®, Baxter) with 1.5% dextrose and 2.5% dextrose alternately.

Ten months later, the residual renal function decreased and he required more ultrafiltration to maintain normal blood pressure. In addition, he was drinking more water than was recommended, and his parents were having difficulties restraining his drinking. Accordingly, a daily dwell of icodextrin (Extraneal®, Baxter) was added to his treatment regimen. His medications at that time were

darbepoetin, alfacalcidol, calcium carbonate, sevelamer, levothyroxine, cholecalciferol, ferrous sulfate, and sodium bicarbonate. Routine blood testing showed normocytic normochromic anemia [hemoglobin 10.6 (reference 11–14.5) g/dl], leukocytosis [leucocytes 24.9 (reference 4–12) $10^3/\mu\text{l}$] with normal neutrophils [3.3 (reference 1.5–8.5) $10^3/\mu\text{l}$] and lymphocyte [5.6 (reference 1.5–7) $10^3/\mu\text{l}$] levels, and a significant eosinophilia [14.8 (reference 0–0.5) $10^3/\mu\text{l}$, 59% of total leucocytes]. Peritoneal fluid was clear, with 5–15 leucocytes/ μl , on repeated examinations, with no signs of peritonitis or eosinophils in the peritoneal fluid and with negative cultures. There was no rash, abdominal pain or change in stool, a sample of which was negative for parasites.

Questions

1. What is the differential diagnosis for the eosinophilia?
2. What workup is needed for diagnosis?
3. What is the diagnosis in this patient, and what is the recommended management?

Compliance with ethical standards

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

The answers to these questions can be found at <https://doi.org/10.1007/s00467-017-3847-5>.

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