



## “Jogger’s Nephritis” After Pilgrimage

Dear Editor,

A 42-year-old lady, nondiabetic and normotensive, presented with complaints of painless, red-colored urine of 3 days duration. She had been on a pilgrimage to Tirumala. She had walked from her village, about 270 km away, with her family. After that, she took steps to Tirumala, another 16.9 km. There was no history of decreased urine output, dysuria, frothy urine, or pyuria. She had no history of non-steroidal anti-inflammatory drugs intake.

Clinical examination revealed blood pressure of 110/70 mm Hg, and systemic examination was normal except for tenderness of the lower limbs. A diagnostic algorithm was followed to exclude all causes of hematuria; urine examination showed the presence of trace albumin and 8–10/hpf red blood cells (RBCs). The RBCs were isomorphic, which was confirmed with phase contrast microscopy. Other investigations revealed the following: serum creatinine: 1.0 mg/dL; serum potassium: 4.8 meq/L; serum bilirubin: 0.4 mg/dL; lactate dehydrogenase: 105 IU/L; C3: 209.15 mg/dL; C4: 33.75 mg/dL; ASO titer: 83.57 IU/mL; serum myoglobin: 36 ng/mL; urine myoglobin: negative; and 24-hour urine protein: 328 mg. Ultrasound of the abdomen revealed right kidney: 9.3 × 4.1 cm and left kidney: 9.4 × 4.2 cm; no calculi, Doppler of renal arteries and veins did not reveal nutcracker syndrome. Her renal biopsy, including electron microscopy, was normal. After 96 hours of admission, the urine color changed from reddish brown to light red and pale yellow. The patient was discharged, and in the subsequent follow-up, there were no RBCs in the urine. It was hypothesized that the hematuria could be due to her long walk.

Hematuria in runners was first reported in the 18th century by Italian physician Bernardini Ramazzini,<sup>1</sup> who was later named “athletic pseudo-nephritis.”<sup>2</sup> The pathogenesis of hematuria is complex and multifactorial. The mechanisms proposed are as follows: (a) Renal vasoconstriction and ischemia due to preferential shunting of blood to the exercising muscles;<sup>3</sup> (b) “Foot strike hemolysis,” or trauma to the RBCs circulating through the sole;<sup>4</sup> (c) Long-distance running is known to cause trauma to the bladder, possibly

due to repeated impacts of the flaccid wall of the bladder against the bladder base.<sup>5</sup>

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

### Conflicts of interest

There are no conflicts of interest.

**Lia Sarah Anish<sup>1</sup>, Aishwarya P Lakshmi<sup>2</sup>,  
S Mathini<sup>1</sup>, R Ram<sup>1</sup>**

<sup>1</sup>Department of Nephrology, Sri Venkateswara Institute of Medical Sciences, Tirupati, Andhra Pradesh <sup>2</sup>Department of Nephrology, Saveetha Medical College, Kuthambakkam, Madras, Tamil Nadu, India

**Corresponding author:** R Ram, Department of Nephrology, Sri Venkateswara Institute of Medical Sciences, Tirupati, Andhra Pradesh, India. E-mail: ram\_5\_1999@yahoo.com

### References

1. Brieger GH. The diseases of runners: A view from the eighteenth century—A commentary. *Pharos Alpha Omega Alpha Honor Med Soc* 1980;43:29–32.
2. Gardner KD. Athletic pseudonephritis; alteration of urine sediment by athletic competition. *J Am Med Assoc* 1956;161:1613–7.
3. Jones GR, Newhouse I. Sport-related hematuria: A review. *Clin J Sport Med* 1997;7:119–25.
4. Miller BJ, Pate RR, Burgess W. Foot impact force and intravascular hemolysis during distance running. *Int J Sports Med* 1988;9:56–60.
5. Blacklock NJ. Bladder trauma in the long-distance runner: “10,000 metres haematuria”. *Br J Urol* 1977;49:129–32.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**How to cite this article:** Anish LS, Lakshmi AP, Mathini S, Ram R, “Jogger’s Nephritis” After Pilgrimage. *Indian J Nephrol*. doi: 10.25259/IJN\_480\_2024

**Received:** 20-08-2024; **Accepted:** 20-08-2024;  
**Online First:** 17-10-2024; **Published:** \*\*\*

**DOI:** 10.25259/IJN\_480\_2024

