Purple urine bag syndrome

Akira Hokama¹, Tetsuya Ohira¹, Atsushi Iraha², Tetsu Kinjo¹, Jiro Fujita²

A 52-year-old man presented with small bowel obstruction. He had had a right plastic ureteral catheter inserted through a nephrostomy due to ureteral stenosis caused by ileocolonic Crohn disease. A week later, his urine from the nephrostomy turned purple (figure 1). His blood pressure was 120/62 mm Hg; pulse rate, 72/min; respiratory rate, 15 breaths/min; and body temperature, 36.1°C. Complete blood count showed white blood cell count of 5700/mm³, hemoglobin levels of 11.1 g/dl, and platelet levels of 103 000/mm³. Urinalysis revealed a pH of 7.5, protein levels of 100 mg/dl, as well as 5 to 9 erythrocytes and more than 100 leukocytes per high power field. It was negative for sugar and positive for nitrates. Subsequent urine culture yielded Providencia stuartii and Pseudomonas aeruginosa (>10⁶ colonies/ml). Purple urine bag syndrome (PUBS) caused by a urinary tract infection was diagnosed. As an entero-ureteral fistula was identified at the site of ureteral stenosis, antibiotics were not administered. Urine color returned to normal after the replacement of the catheter and bag, and the surgery for bowel obstruction was performed.

PUBS is a rare disorder in which the plastic urinary catheter bag turns purple. It occurs in chronically catheterized and constipated elderly bedridden patients. The discoloration is caused by enzymatic degradation of urinary indoxyl sulfate to indigo (blue) and indirubin (red) in the plastic bag.¹ Several species including P. stuartii, Proteus mirabilis, Escherichia coli, and Klebsiella pneumoniae, which produce the indoxyl sulfatase and indoxyl phosphatase enzymes, have been associated with PUBS.¹²

OPEN ACCESS  This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShaReAlike 4.0 International License (CC BY-NC-SA 4.0), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material, provided the original work is properly cited, distributed under the same license, and used for non-commercial purposes only. For commercial use, please contact the journal office at pamw@mp.pl.

REFERENCES


Correspondence to:
Akira Hokama, MD, PhD, Department of Endoscopy, Graduate School of Medicine, University of the Ryukyus, Okinawa, Japan

Pol Arch Intern Med. 2019; 129 (2): 926
doi:10.20452/pamw.4394
Copyright by Medycyna Praktyczna, Kraków 2019

FIGURE 1 Purple urine in a plastic bag