

Images in Nephrology (Section Editor: G. H. Neild)

Purple urine bag syndrome

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A 44-year-old man with Down's syndrome and neurogenic bladder which required a suprapubic catheter presented with fever and change in his urine color for one day. Physical examination revealed a temperature of 38.3°C, blood pressure of 60/30 mmHg, pulse rate of 120/min and urine with purple discoloration in the urine catheter and bag (Figure 1). A urine dipstick test indicated the presence of leukocytes, positive nitrate and a pH value of 8.5. The patient was resuscitated with intravenous crystalloid fluid and empiric antibiotics (vancomycin and piperacillin/tazobactam) were started. The patient's urine culture subsequently grew *Enterococcus faecalis*. His antibiotic was changed to levofloxacin as per sensitivity analysis. The patient responded well to treatment as his fever subsided and improved and his urine color gradually returned to yellow.

Purple urine bag syndrome (PUBS) is a rare condition characterized by purple discoloration of urine in a urine catheter and bag typically seen in patients with chronic debilitation with a history of long-term indwelling urinary catheter [1]. The pathogenesis of this discoloration is associated with tryptophan's metabolism as intestinal bacteria metabolize tryptophan to indole and later converted to indican by the liver. Indican, in turn, is excreted and broken down in the urine into indirubin (red) and indigo (blue) in an alkaline environment by sulfatase or phosphatase-containing bacteria, such as *Providencia stuartii*, *Providencia rettgeri*, *Proteus mirabilis*, *Klebsiella pneumoniae*, *Escherichia coli*, *Enterococcus* spp., etc. [2]

PUBS is generally a benign process but it provides a clue to the presence of an underlying urinary tract infection. The discoloration usually gradually disappears after antibiotic treatment and good urologic sanitation, as seen in our patient [1, 3].

Conflict of interest statement. None declared.

References

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Fig. 1. Purple discoloration of urine in the urine catheter and bag.

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