Purple bag syndrome: A red flag?

**Josephine Catherine Weaver, Rajesh Kumar Rajakunjaram,
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ABSTRACT

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CASE REPORT

A 91-year-old male presented to the emergency department following a fall from a chair. He was unable to identify any significant symptoms preceding the fall. He sustained no significant injuries and basic physiological observations were within normal limits. Past medical history revealed he was known to have a long-term catheter (LTC) for benign prostate hyperplasia (BPH). The only notable finding on initial investigations was moderately elevated inflammatory markers. He was admitted under the medical team for further assessment. On re-examination his urine appeared to have a purple discoloration in the leg bag (Figure 1). His genital hygiene was poor. Microscopy, culture and sensitivity of the catheter urine sample grew heavy mixed bacterial growth.

The patient made a full recovery following empirical intravenous broad-spectrum antibiotics then focused oral antibiotics in accordance with the sensitivities. This was combined with replacement of the LTC under aseptic non-touch technique.

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Figure 1: A plain color photograph of the patient's leg collection bag for the urinary catheter, demonstrating the blue, red and combined purple colors.

DISCUSSION

Purple bag syndrome (PBS), also known as purple urine bag syndrome (PUBS), is a reasonably rare syndrome [1] of urinary tract infection associated with several bacterial pathogens [2, 3].

Providencia stuartii, *Providencia rettgeri*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Escherichia coli*, *Morganella morganii*, and *Pseudomonas aeruginosa* have all been linked to purple bag syndrome. It is believed that the purple color is created through a metabolic cascade that begins with tryptophan in food reacting with gut bacteria. Through the portal circulation and interaction with alkaline urine, there is production of the red indirubin and blue indigo pigments. The two react with the polyvinyl chloride of the catheter bag and produce the purple coloration [1–3].

CONCLUSION

Purple bag syndrome appears alarming. It can range from being an innocuous incidental finding to representing significant urinary tract infection and even a precursor to urosepsis. Clinical correlation must be made. Treatment however is no different to other catheter associated urinary tract infections—suitable antimicrobial therapy should be administered in accordance with relevant microbiology results and the catheter replaced.

Keywords: Urinary tract infection, Catheter, Purple bag syndrome, Purple urine bag syndrome

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Author Contributions

Josephine Catherine Weaver – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Rajesh Kumar Rajakunjaram – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

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Guarantor of Submission

The corresponding author is the guarantor of submission.

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Written informed consent was obtained from the patient for publication of this case report.

Conflict of Interest

Authors declare no conflict of interest.

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