

# Purple urine bag syndrome

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## ABSTRACT

**KEYWORDS:** purple urine, *Escherichia coli*, proteus mirabilis, indwelling urinary catheters

**DOI:** 10.7861/clinmed.2023-0132

A 70-year-old woman with lung cancer and brain metastases presented to the outpatient department with urine discoloration. She was incidentally found to have purple-coloured urine in her urinary bag (Fig 1). The patient had abdominal pain but did not have burning micturition, vomiting or chills. She also denied unusual dietary changes or any recent changes to her medication regimen. A urine culture yielded significant mixed growth of *Escherichia coli* and *Proteus mirabilis*. She was treated with antibiotics as per the sensitivity reports. She was counselled regarding the benign nature of this discoloration. She was advised to have catheter care on a regular basis.

Purple urinary bag syndrome (PUBS) was first reported by Barlow and Dickson in 1978.<sup>1</sup> The microorganism most commonly associated with PUBS is *E coli*, followed by mixed bacterial growth.<sup>2</sup> It is usually seen in patients with long-term indwelling urinary catheters.<sup>3</sup> The pathogenesis is due to metabolism of tryptophan by bacteria in the gut to indole, which is later converted to indoxyl sulphate (indican) in the liver by hepatic conjugation. This is excreted and broken down in the urine by bacteria that have one or both of the enzymes phosphatase and sulfatase, which convert indican into indoxyl, which is then converted by oxidation in the urine to indirubin and indigo in an alkaline environment; the mixture of these two colours produces purple discoloration when it reacts with the plastic catheter bag.<sup>4</sup> The management of PUBS mostly relies on identifying the underlying cause and treating it. ■

## References

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**Fig 1.** Patient with indwelling urinary catheter with purple-coloured urine in urinary bag.

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