The Brazilian Journal of
INFECTIOUS DISEASES

www.elsevier.com/locate/bjid

Clinical image

Purple urine bag syndrome in an elderly subject

Olivier-Jacques Bocrie[a], *Elodie Bouchoir*[a], *Agnès Camus*[a], *Laura Popitean*[a], *Patrick Manckoundia*[a,b,*]

[a] *Department of Geriatrics and Internal Medicine, Hospital of Champmaillot, University Hospital, Dijon, France*
[b] *Inserm/U1093 Motricity-Plasticity, University of Burgundy, Dijon, France*

ARTICLE INFO

Article history:
Received 17 May 2012
Accepted 11 July 2012
Available online 8 November 2012

An 87-year-old woman was hospitalized for post-fall syndrome. Even though there was improvement in the post-fall syndrome, she had urinary retention, associated with fecaloma. Urinary catheterization showed acute urinary retention of 500 mL. Urine microscopy and culture showed a resistant *Escherichia coli* strain. Given the absence of both clinical signs (apart from urinary retention) and inflammatory syndrome, no antibiotic therapy was initiated. Six days after inserting the indwelling catheter, purple coloration of the urine bag and the catheter appeared, with no modifications of urine color (Fig. 1). Another urine microscopy and culture performed long after catheter withdrawal, showed disappearance of the *E. coli*. Purple urine bag syndrome (PUBS) remained.

PUBS is a rare phenomenon first described in 1978.[1] It can appear from a few hours to many days after catheterization.[2] PUBS mainly occurs in elderly women,[2] but cases in men and children have been described. Risk factors are urinary tract infection due to various pathogens, including *E. coli*; chronic constipation; use of laxatives; prolonged urinary catheterization; alkaline urine pH; tryptophan-rich foods; renal failure; and cognitive disorders.[3,4] Being bedridden, which is associated with risk of constipation, seems to be a triggering factor for PUBS.[2] After colonization by one or several bacteria, there are many biochemical reactions that start with tryptophan metabolism. Tryptophan is deaminated to form indole, which undergoes hepatic conjugation to form indoxyl sulphate. This is metabolized into indoxyl, indirubin, and indigo.[2] These urinary components interact with the polyvinyl chloride of the catheter and urine bag to cause the purple coloration. Concerning the PUBS treatment, some authors recommend a short

Fig. 1 – Photograph of the purple coloration of the indwelling catheter and urine bag.

* *Corresponding author at:* Service de Médecine Interne Gériatrie Hôpital de Champmaillot CHU, BP 87 909, 2, rue Jules Violle, F-21 079 Dijon Cedex, France.
E-mail address: patrick.manckoundia@chu-dijon.fr (P. Manckoundia).
1413-8670/$ – see front matter
http://dx.doi.org/10.1016/j.bjid.2012.07.006

antibiotic therapy, whereas other authors recommend a simple change of urine bag and catheter.[2–4] Although PUBS is rare, medical and paramedical teams must be aware that this phenomenon is not a serious complication of urinary tract disease.

Conflict of interest

All authors declare to have no conflict of interest.

Acknowledgements

The authors are grateful to Mr. Philip Bastable.

REFERENCES

1. Barlow GB, Dickson JAS. Purple urine bags. Lancet. 1978;311:220–1.
2. Lin CH, Huang HT, Chien CC, Tzeng DS, Lung FW. Purple urine bag syndrome in nursing homes: ten elderly case reports and a literature review. Clin Interv Aging. 2008;3: 729–34.
3. Mantani N, Ochiai H, Imanishi N, Kogure T, Terasawa K, Tamura J. A case-control study of purple urine bag syndrome in geriatric wards. J Infect Chemother. 2003;9: 53–7.
4. Ga H, Kojima T. Purple urine bag syndrome. JAMA. 2012;307:1912–3.