

Purple Urine Bag Syndrome Amelioration without Antibiotic Therapy

Sir,

A 58-year woman, who sustained an acute cerebral infarction with subsequent cerebral haemorrhage, was treated for difficulty in swallowing. Placement of a nasogastric tube was required. Urethral catheterisation was needed for more than 3 months, due to repeated lapses of consciousness and somnolence. The patient did not have constipation, with an average of three bowel movements per day. On 9 March 2023, urine collected had a 'grape purple' hue, without any sediment (Figure 1). The patient had no other symptoms such as fever, vomiting, diarrhoea, dysuria, frequent micturition, new-onset incontinence, malodorous urine or flank pain. Blood cultures were negative. Urinalysis showed alkaline pH, presence of proteinuria, haemoglobin, and leukocytes (+3 cells/uL); however, nitrites were negative. The urine culture was positive for several Gram-positive cocci, Gram-positive bacilli, and Gram-negative bacilli. It indicated that the urine sample was contaminated. Due to the absence of clinical symptoms, antibiotics were not administered and only urinary catheter and collection bag were replaced with new ones. After replacement, the colour of the urine returned to normal, with no evidence of bacteria on the urine culture.

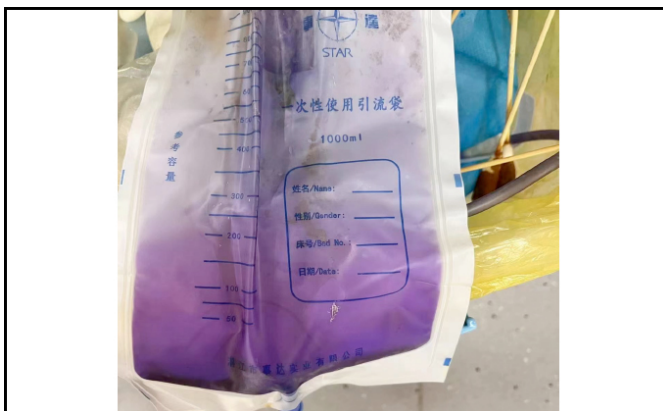


Figure 1: Urinary bag and catheter, showing collection of purple urine.

Purple urine bag syndrome (PUBS) is a rare urinary abnormality and postulated to result from increased tryptophan metabolism or the build-up of sulphatases.¹⁻³ Risk factors for PUBS include: prolonged immobilisation, old age, female gender, prolonged catheterisation, poor dietary status, intestinal emptying dysfunction, such as constipation, alkaline urine, long-term hospitalisation, use of a plastic catheter, and high bacterial load in the urine

catheter.⁴ The purple discoloration may result from the reaction of the metabolites of tryptophan or sulphatases with the catheter coating and urinary bag.⁵ This indicates that PUBS can be a benign process, and not necessarily be due to urinary tract infection. Thus, it does not require antibiotic therapy. Avoiding the use of antibiotics in cases of benign PUBS is important to lower the risk of antibiotic resistance in patients who are bedridden or require long-term hospitalisation.

COMPETING INTEREST:

The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

XY: Researched literature, conceived the study, and wrote the first draft of the manuscript

WB, TW: Reviewed the manuscript.

All authors approved the final version of the manuscript for publication.

REFERENCES

1. Al Montasir A, Al Mustaque A. Purple urine bag syndrome. *J Family Med Prim Care* 2013; **2(1)**:104-5. doi: 10.4103/2249-4863.109970.
2. Bogie AL, Sparkman A, Anderson M, Crittenden-Byers C, Barron M. Is there a difference in the contamination rates of urine samples obtained by bladder catheterization and clean-catch collection in preschool children? *Pediatr Emerg Care* 2021; **37(12)**:e788-e790. doi: 10.1097/PEC.0000000000002578.
3. Ito WE, Mai de Almeida SH. Purple urine bag syndrome. *Int Urogynecol J* 2019; **30**:157-8.
4. Rodriguez MO, Rodriguez MM, Diaz JJ, Garcia BP. Purple urine in Berdon Syndrome: A rare finding in the clinic laboratory. *Ann Clin Biochem* 2023; **60**:142-5. doi: 10.1177/00045632231152565.
5. Nandwani A, Jha PK, Gadde A, Jain M. Purple urine bag syndrome. *Indian J Nephrol* 2022; **32**:646-7. doi: 10.4103/ijn.ijn_226_21.

Xiao-qing Ye, Wei-hong Bi and Ting Wang

Department of Nephrology, The Third Hospital of Mianyang (Sichuan Mental Health Centre), Sichuan, China

Correspondence to: Dr. Xiao-qing Ye, Department of Nephrology, The Third of Hospital of Mianyang (Sichuan Mental Health Centre), Sichuan, China
E-mail: yexiaoqing2007@163.com

Received: June 21, 2023; Revised: July 03, 2023;

Accepted: July 11, 2023

DOI: <https://doi.org/10.29271/jcpsp.2024.02.248>

.....