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Internal Medicine Flashcard

Purple urine bag syndrome

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1. Indication

An 86-year-old woman, with history of metastatic pancreatic cancer, presented with asthenia, abdominal pain and weight loss. Few days after hospitalization, purple urine were observed in the indwelling urinary catheter (Fig. 1). This catheter had been present for several weeks in this patient bedridden. Physical examination revealed fever (38.4 °C) and severe constipation favored by morphine treatment. Dipstick test showed alkaline urine (pH of 10) and leukocyturia but without hematuria. The urine culture showed 10^6 colony-forming units

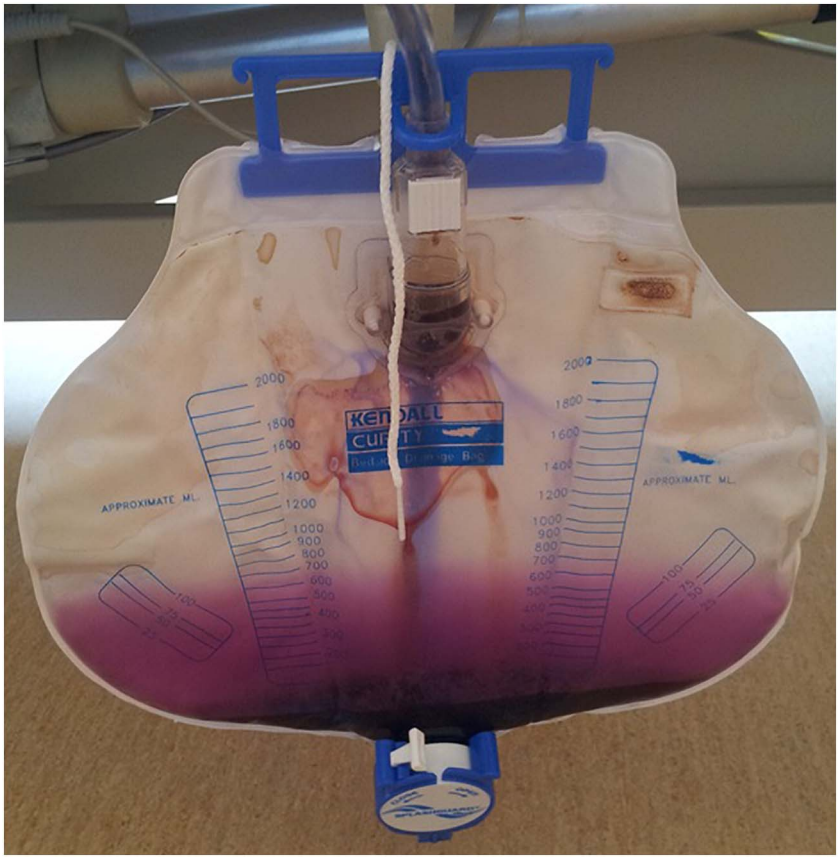

Fig. 1. Amazing urine color! (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

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per milliliter for *Klebsiella pneumoniae*. Four days after the introduction of antibiotherapy adapted to the germ and laxative, urine returned to normal.

2. What is the diagnosis?

2.1. Diagnosis

The “purple urine bag syndrome” is rare, asymptomatic and benign syndrome, secondary to the degradation of urinary derivate of tryptophan (indoxyl sulfat) in colored metabolites (indigo and indirubin) by various bacterial species, especially digestive (e.g., *Klebsiella pneumoniae*, *Escherichia coli*, *Proteus mirabilis*…), present in the urine. Then, these urinary pigments react with the constituents of urine bag (polyvinyl chloride) and give this purple coloration [1]. Identified risk factors of this syndrome are female gender (shorter urethra with more frequent bacterial colonization), indwelling urinary catheter, alkaline urine (necessary for bacteria secreting indoxyl sulfatase), important bacteriuria, constipation (increasing the proliferation of colonic bacteria), and chronic renal failure [2]. The management consists of antibiotic treatment guided by the antibiogram, treatment of constipation and, if possible, the removal of the urinary catheter.

Conflict of interest statement

No personal conflict of interest and no financial relationships with a commercial entity producing health-care related products and/or services relevant to this article.

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