Purple urine inside collector bag: Benign and unusual phenomenon

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Mr. Editor:

Purple urine bag syndrome is a "benign" occurrence which does not require aggressive treatments¹. It is considered a result of a diet rich in amino acids, especially tryptophan, linked to slow intestinal transit and phosphate- and sulfatase-producing bacteria^{2,3}.

The manifestation of indole following a deamination of tryptophan promotes the formation of indoxyl sulfate inside the portal circulation. The latter is metabolized to indoxyl by the sulfatases and phosphatases produced by certain bacteria, i.e., *Pseudomonas aeruginosa*, *Morganella morganii*, *Escherichia coli*, *Proteus mirabilis*, *Proteus vulgaris*, *Klebsiella pneumoniae*, *Providencia stuartii*, *Providencia rettgeri*, etc.¹⁻³ Lastly, due to the interaction of alkaline urine with the plastic material of the urinary catheter or drainage bag (polyvinyl chloride), and according to the amount of oxygen, indigo (O₂ normal) and indirubin (O₂ low), together give the urine a purple coloring inside the drainage bag^{1,4} (Fig. 1). It is worth mentioning that when replacing the catheter or suprapubic puncture, the urine does not present the characteristic purple color. Some of the described risk factors are female, advanced age, constipation, a diet high in tryptophan, debilitating chronic diseases, alkaline urine, and institutionalization.

Other causes for a change in coloration in urine can be intake of colorants (methylene blue), Drummond syndrome or blue diaper syndrome, infection by *Pseudomonas* (green urine), as well as certain

Figure 1. Drainage bag where we can observe an intense purple coloration. The image was obtained incidentally during physical examination (PE) of a male patient, in his 5th decade of life, construction worker, who attended for an assessment due to functional constipation data. During the abdominal PE, the patient mentioned that he was wearing a suprapubic urinary catheter for a period of 2 months; the patient stated to have replaced the catheter every 28 days without fail. It is worth mentioning that the patient was afebrile and without symptoms, associated with a probable infection.

medications, i.e., indomethacin (bluish-green), amitriptyline (bluish-green), rifampicin (orange, red, or pink), propofol (green), and doxorubicin (red), to name a few⁵.

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Conflicts of interest

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Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments have been conducted on humans or animals for this research.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors declare that patient data do not appear in this article.

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