

Clinical-Medical Image

## What does a Purple Discoloration of Urine Mean?

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**Figure 1:** Violet discoloration of the collection tube and urine bag in purple urine bag syndrome.

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A 74-year-old female patient was admitted to the intensive care unit for the management of complicated polytrauma accompanied by septic shock. Violet discoloration appeared on the 4th day after the insertion of a urinary catheter. Cytobacteriological and biochemical analysis of the urine showed normal results, with no isolated microorganisms in culture. The Purple Urine Bag Syndrome (PUBS) is an unusual and rare medical condition, first described in 1978 by Barlow and Dickson [1]. This syndrome primarily affects elderly bedridden women who suffer from constipation, have a permanent catheter in place and frequently have urinary tract infections, with an estimated prevalence of 11.7% [2,3]. As the name suggests, it is characterized by the violet hue that develops in the urinary catheter and/or the urine collection bag (Figure 1). The origin of the violet color is linked to the metabolism of tryptophan in the gastrointestinal tract (facilitated by constipation), leading to the synthesis of indole by intestinal microbiota. This compound is then absorbed and enters the portal circulation to reach the liver, where it is transformed into 3-hydroxy-indole and subsequently into indoxyl sulfate (indican). Indican is excreted in the urine, where, under the action of bacterial enzymes (sulfatase, phosphatase), it can be converted into indirubin (red) and indigo (blue). The combination of these two compounds in the urinary pouch results in the characteristic violet color [4]. PUBS does not always indicate the presence of a urinary tract infection.

**Keywords:** Purple urine bag syndrome; Urinary catheter

## Conflict of Interest

None of the authors have any conflict of interest to disclose.

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