

Green urine in a postoperative patient

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DESCRIPTION

An 85-year-old man underwent reversal of loop ileostomy. The integrity of the anastomosis was tested by an injection of methylene blue into the bowel lumen. Postoperatively the patient voided 'green urine' and alarmed the nursing staff and junior duty doctor (figure 1). Routine microscopic examination and culture of urine revealed no abnormality. Liver function test and full blood count was also normal. This discolouration of urine resolved spontaneously in the next few days.

Methylene blue is commonly used to test the integrity of the gastrointestinal tract following anastomosis.¹ This substance is also used for diagnostic tests such as localisation of parathyroid adenoma during surgery and identification of fistula tracts, as a therapeutic agent for the treatment of methemoglobinemia or refractory hypotension and as a mild antimicrobial agent. This dye is converted into leucomethylene blue by gastrointestinal bacterial flora and mostly excreted in the urine.

The yellow colour of urine is attributed to the compound urochrome. When it combines with methylene blue, a harmless compound is formed which creates a green or greenish blue colour.² The intensity of the green colour in urine is the dose related. Some medications such as propofol, cimetidine, promethazine, metoclopramide, amitriptyline and indomethacin can also cause green urine. Careful history, physical

examination and awareness of this self-limiting condition are important to avoid anxiety and unnecessary investigations on such urine samples.

Learning points

- ▶ Methylene blue is commonly used for both diagnostic and therapeutic purposes.
- ▶ As it is mostly excreted by the kidney, it can cause discolouration to the urine.
- ▶ Patients and staff should be warned or be aware of this potential cause of self-limiting urine discolouration to avoid unnecessary anxiety and investigation.

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Competing interests None.

Patient consent Obtained.

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REFERENCES

- 1 Probst RL, Reinecke F, Geginat G. Methylene blue in the evaluation of gastrointestinal tract integrity: potential limitations. *Eur Surg Res* 2005;37:246–9.
- 2 Acock R, Kass D. Abnormal urine colour. *South Med J* 2012;105:43–7.



Figure 1 Sample of green urine with progressive colour change.



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