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# Endosulfan and black urine

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This 21-year-old college student was admitted following alleged consumption of endosulfan 100 g along with alcohol 2 h earlier. He had had two episodes of generalized tonic clonic seizures which had been treated with lorazepam and phenytoin. At admission, he had tachycardia, tachypnoea and normal systemic examination. Fourteen hours after admission, his urobag revealed black urine (Figure 1). His investigations included haemoglobin 14.8 g/dL (10.5 g/dL on Day 3), creatinine 202 μmol/L, lactate dehydrogenase 5770 (120–220) U/L, creatine kinase 60220 (40–280) U/L, serum bilirubin 2.6 mg/dL, prothrombin time elevation of 3.2 s, activated partial thromboplastin time prolongation of 4 s and total leucocyte counts of $31 \times 10^9$/L with 91% neutrophilia. His urinary findings were albumin 2+, red blood cells (RBCs) 10–12/high power field, pus cells 1–2/hpf and positive urinary haeme and myoglobin detected by ammonium sulphate test. We did not have the facility for toxicological analysis of urine since phenolic metabolites (especially from organophosphates) can cause blackish discolouration of urine.

He improved with conservative management. Endosulfan is an organochlorine pesticide absorbed through ingestion, inhalation and skin contact and involves the solid organs mainly the central nervous system [1]. It has rapid absorption and slow redistribution from its lipophilic depots and antagonizes chloride transport in the gamma-aminobutyric acid receptor. Mortality rates according to a South Indian study were 28% [1]. Ingestion of >100 mL has been shown to be fatal [1]. Rhabdomyolysis is one of the commonest complications apart from hepatotoxicity, renal failure and hypotension. Intravascular haemolysis has been reported once in an Indian female, who had had a fatal course but the colour of urine was not reported [2]. Endosulfan metabolites are mainly excreted in urine and faeces. Urinary metabolites include α and β endosulfan isomers and products like -sulphate, -lactone, -diol and -ether [3]. Black urine is seen with alkaptonuria, melanuria and with use of α-methyldopa [4]. We report black urine for the first time in endosulfan poisoning, which could possibly be due to a combination of haeme, myoglobin and endosulfan diol metabolites.

**Fig. 1.** Urobag showing black urine with sediments.

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