



## Purple Poison- A Rare Encounter

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### Abstract

*Potassium permanganate appears as a purple coloured water soluble xenobiotic sold as crystals or tablets or as a 0.01% dilute solution. Potassium Permanganate is strong oxidiser and poisoning may result in local and systemic toxicity. Ingestion of potassium permanganate results in damage of upper gastrointestinal tract. Burns and ulceration of mouth, oesophagus and stomach occur due to its corrosive action. Emergency endoscopy is useful to assess severity of damage and also guide the management.*

**Keywords:** *Potassium permanganate, oxidiser, damage of upper GI tract, early endoscopy.*

### Introduction

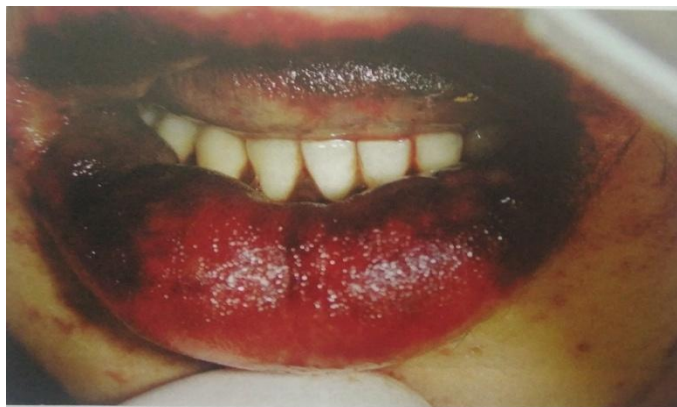
Potassium permanganate appears as a purple coloured water soluble xenobiotic sold as crystals or tablets or as a 0.01% dilute solution. Previously used as abortifacient, urethral irrigant, snakebite remedy and lavage fluid for alkaloid poisoning now currently being used in baths and wet bandages as a dermal antiseptic especially in eczema patients. Ingestion of potassium permanganate results in damage of upper gastrointestinal tract. Burns and ulceration of mouth, oesophagus and stomach occur due to its corrosive action. Emergency endoscopy is useful to assess severity of damage and also guide the management.



Fig 1. Potassium Permanganate crystals

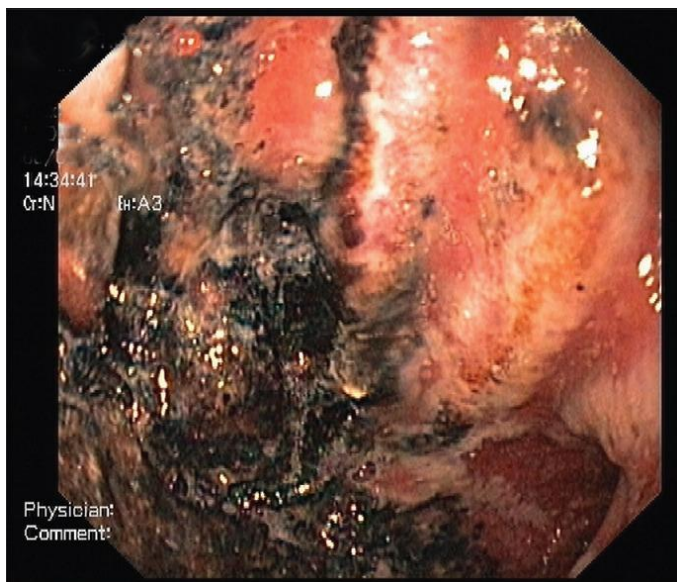
### Case Report

We are reporting a 32 year old depressed chemistry teacher who presented to emergency department after suicidal ingestion of potassium permanganate of about 2gm. On arrival, patient was conscious and coherent. Initial symptoms included nausea and vomiting. Blood pressure was 120/80mmhg, pulse rate – 85/min and afebrile. Physical examination showed brownish black coating over lips and tongue and ulcer at tip of tongue.



**Fig 2.** Brownish Black coating over the lips

Mild epigastric tenderness present and other systems were quite normal. Laboratory investigations were within normal limits. Upper gastrointestinal endoscopy was done and it revealed ulcer at tip of tongue and antral gastritis.



**Fig 3.** Antral Gastritis and coating of stomach with the poison

The patient is treated symptomatically and discharged on 7<sup>th</sup> day after psychiatric counselling. At the time of discharge, ulcer at tip of the tongue started to heal.



**Fig 4.** Healing seen after 3 weeks on repeat Endoscopy

### Discussion

Potassium Permanganate is strong oxidiser and poisoning may result in local and systemic toxicity. Upon contact with mucous membranes, it reacts with water to form manganese dioxide, potassium hydroxide and molecular oxygen. Local tissue injury – contact with nascent oxygen and caustic effect of KOH. Brown black staining – manganese dioxide. Systemic toxicity is due to free radicals generated due to absorbed permanganate ions.

### Conclusion

Potassium permanganate poisoning is not so commonly encountered. It majorly causes gastrointestinal symptoms although cardiovascular, hepatic, renal complications are also studied. EARLY ENDOSCOPY should be considered so as to know the extent of damage and also to know the prognosis of the patient.

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