



Case Report

# Super vasmol poisoning with rhabdomyolysis and airway edema: A case report

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## Abstract

**Background:** Super vasmol hair dye poisoning is becoming more common among Urban Indians<sup>[1]</sup>. Paraphenylenediamine (PPD), which is present in hair dyes in concentrations ranging from 2 to 10%, is a common component. Cervical oedema, mucosal damage, respiratory distress, abrupt renal failure, rhabdomyolysis and cardiac infarction are among the major side effects of PPD. We describe the case of 25 years old male who was brought to ED after consumption of hair dye Super Vasmol and had rhabdomyolysis and airway oedema.

**Keywords :** Super vasmol poisoning; Paraphenylenediamine

## 1. Case Presentation

A 25-year-old male, with no significant past medical history presented to emergency department approximately 6 hours after deliberate ingestion of around 100 ml of Super Vasmol hair dye in his hostel room. On presentation, the patient complained of severe myalgia, abdominal pain and multiple episodes of vomiting. On arrival, patient was alert, conscious and oriented and hemodynamically stable. Oral examination revealed congested oral mucosa without visible ulceration or burns. Urinary Catheterization revealed 250 ml of cola colored urine, raising suspicion of rhabdomyolysis. Initial VBG showed Ph- 7.42, Pco<sub>2</sub>-35, HCO<sub>3</sub>-23. Serum lactate was 4.5 mmol/l, Hb was 16.2 gm%. ECG showed no significant changes. Serum creatinine was 1.0mg/dl. Serum creatinine phosphokinase (CPK) was markedly raised 232ng/ml. Liver function test showed elevated transaminases (AST- 742 U/L, ALT-101 U/L. Total bilirubin was 1.0 mg/dl. Serum alkaline phosphatase was 167 U/L. Urine analysis showed Protein +

**Citation:** Debapriya Ghosh, Pratyusha Akkaraju. Super vasmol poisoning with rhabdomyolysis and airway edema: A case report. Kauverian Med J. 2026;3(8):57–59.

Academic Editor: Dr. Venkita S. Suresh

ISSN: 2584-1572 (Online)



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**Fig (1):** Cola colored urine

## 2. Management

The patient was managed with aggressive intravenous hydration and admitted to the intensive care unit. Close airway monitoring was done in view of impending upper airway compromise. Clinical signs suggestive of vocal cord/laryngeal edema such as progressive neck swelling, muffled voice, stridor, dysphagia, drooling, and respiratory distress were monitored carefully. In view of worsening airway edema and risk of sudden airway obstruction, early elective endotracheal intubation was performed, followed by ventilatory support.

Aggressive intravenous hydration was initiated to prevent acute kidney injury secondary to rhabdomyolysis and myoglobinuria. Urine alkalinization with intravenous sodium bicarbonate was administered to reduce myoglobin-induced renal tubular injury. N-acetylcysteine (NAC) infusion was given for its antioxidant and possible cytoprotective effects. Electrolyte abnormalities, particularly hypokalemia, were corrected with potassium supplementation. Antihistamines and corticosteroids were administered to reduce airway edema and hypersensitivity reactions. Broad-spectrum antibiotics were started to prevent secondary infections.

Serial monitoring of renal function tests, liver function tests, urine output, electrolytes, creatine kinase levels, and respiratory status was performed throughout the hospital stay and patient was discharged subsequently on day 8 after admission.

## 3. Discussion

Paraphenylenediamine (PPD), a major constituent of Super Vasmol hair dye, is a well-recognized cause of poisoning in developing countries due to its easy availability and low cost. PPD toxicity is associated with significant morbidity and mortality because of its rapid progression to multiorgan involvement, particularly airway edema, rhabdomyolysis, acute kidney injury, myocarditis, and metabolic disturbances [\[2\]](#).

One of the earliest and most life-threatening manifestations is cervicofacial and laryngeal edema leading to vocal cord swelling and airway compromise. Patients may initially present with neck swelling, dysphagia, hoarseness of voice, stridor, drooling, and respiratory distress. Early recognition of these warning signs is crucial, as delayed airway intervention can result in sudden respiratory collapse [\[3\]](#).

In the present case, close airway monitoring and timely elective intubation played a vital role in preventing catastrophic airway obstruction. Rhabdomyolysis is another important complication of PPD poisoning, resulting from direct skeletal muscle toxicity. Muscle breakdown leads to marked elevation of creatine kinase levels and release of myoglobin, which can precipitate acute tubular necrosis and acute kidney injury [\[4\]](#).

Cola-colored urine is considered an important clinical clue suggestive of myoglobinuria. Aggressive intravenous hydration and urine alkalinization with sodium bicarbonate are considered essential supportive measures to reduce renal injury and enhance myoglobin excretion.

Although there is no specific antidote for PPD poisoning, early supportive management significantly improves outcomes. N-acetylcysteine (NAC) infusion has been used because of its antioxidant properties and potential role in reducing oxidative tissue injury. Corticosteroids and antihistamines may help reduce airway edema and inflammatory reactions [\[5\]](#).

Correction of electrolyte abnormalities, especially potassium disturbances, along with serial monitoring of renal function, liver enzymes, electrolytes, and respiratory status, is essential during the course of treatment.

#### 4. Conclusion

This case highlights the importance of early airway protection, aggressive hydration therapy, and vigilant monitoring in patients with Super vasmol ingestion. Rapid identification and aggressive management can significantly reduce morbidity and improve survival in PPD poisoning.

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