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(CASE REPORT)

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A rare case report on super Vasmol hair dye poisoning

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Abstract

Hair dye addiction is not uncommon in India, it has become a growing concern. One of the main toxic components in hair dye is paraphenylenediamine (PPD). Acute PPD poisoning typically presents with severe angioedema of the upper respiratory tract. The tongue often becomes swollen, hard, and sticks out. Systemic toxicity may lead to multi-organ involvement including rhabdomyolysis and acute renal failure (ARF), with PPD ingestion being a rare but recognized cause of ARF. Currently, there is no specific antidote for PPD poisoning and treatment remains largely supportive. We report cases of poisoning with Super-Vasmol- a common hair dye associated with right adrenal hemorrhage and hepatotoxicity. Our case showed improvement with hemodialysis and medical intervention.

Keywords: Right adrenal hemorrhage; Rhabdomyolysis; Acute kidney injury with anuria; Hypokalemia

1. Introduction

Super Vasmol is a widely used emulsion-based hair dye. Its main constituents include paraphenylenediamine (PPD), propylene glycol, resorcinol, sodium ethylenediaminetetra acetic acid (EDTA), along with preservatives and fragrances. Among these, Paraphenylenediamine (PPD) is the main chemical responsible for the harmful effects of the dye.[1] Common clinical manifestations of PPD poisoning include shock, muscle-swelling, oliguria, brown-colored urine, and uterine edema. Hypocalcemia may result from either the presence of sodium-EDTA or severe rhabdomyolysis.[2] The patient may experience seizures, which can be triggered by hypocalcemia or pigment-induced neurotoxicity. Management is primarily supportive, as there is currently no specific antidote for PPD poisoning. Treatment focuses on addressing symptoms and eliminating the toxic agent. This case highlights the importance of a thorough toxicological evaluation. Notably, due to its widespread availability and addictive mostly supportive therapy because there are no known specific antidotes for PPD. Hair dye treatment and symptoms are examined, and the significance of a comprehensive toxicological review has been demonstrated. One of the most popular ways to end one's life is through addiction.[3,4]

The most hazardous active component underneath the surface layer is PPD. Severe inflammatory edema, intravascular hemolysis, metabolic acidosis, liver damage, renal failure, hypocalcemia, seizures, cardiac failure, and death can all result from exposure to this preparation.[5]

2. Case report

A 25-year-old female was admitted to the hospital after consuming approximately 100 mL of Super Vasmol hair dye at home. Initially, she was treated for symptoms of rhabdomyolysis at another facility for 4 days, before being referred to our emergency department for further care.

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Upon her arrival, after evaluation, symptomatic treatment, add-on hemodialysis, and necessary tests were conducted. Subsequently, she was moved to the Medical Intensive Care Unit (MICU) for closer monitoring.

The patient exhibited swelling of her face, hands, and legs, as well as swollen lips and difficulty breathing (Figure2 and 3: SWELLING IN THE HAND). Her ABG findings were pH-7.312 and pCO2-54.5. On examination, her respiratory rate was 20 breaths per minute, her blood pressure measured 156/112 mmHg, her heart rate was 97 beats per minute, and her oxygen saturation (SpO_2) was 96% while receiving oxygen support. PRBC transfused given low hb level and peripheral smear showed leucocytosis predominantly neutrophils. The patient is a known case of seizure. Abnormal findings were noted during her heart and lung examinations.

On the next day in the hospital, she developed dark-colored urine, experienced reduced urine output, and exhibited worsening swelling in her legs (pedal edema). Along with this there was presence of blood in the sputum was there(Figure 1).

The doctor suggested: X-ray-There are patchy areas in the right lung and the middle part of the left lung that look like lung tissue has filled with fluid — this suggests possible infection or inflammation (consolidation).

Ultrasound (Abdomen and pelvis)-There are changes in the fat around both kidneys, with a bit of fluid and less movement during breathing — this may point to a kidney problem like acute injury or infection. A bright, round spot above the right kidney could be bleeding or a mass in the adrenal gland. There's also a small amount of fluid in both the lungs and the abdomen. Some debris has settled at the bottom of the bladder, which could mean an infection or inflammation.

Doppler (right upper limb)-There's a clear, elongated area in the lower part of the forearm that likely represents a bruise or collection of blood (hematoma). The soft tissues in the right arm are swollen, but the veins look normal.

CT thorax: There are signs of fluid buildup and thickening in both lungs, especially around the lower parts, with patchy areas suggesting inflammation or infection. There is mild to moderate fluid around both lungs, causing parts of the lower lungs to collapse slightly, more on the left side. A dense, well-defined mass about 5.2x6 cm is seen above the right kidney, and the right adrenal gland is not clearly seen — this likely suggests bleeding in the adrenal gland (adrenal hemorrhage).

And other routine investigations including Kidney function tests (KFT), Liver function tests (LFT), Complete blood count (CBC), Coagulation Profile (CP) and CRP were performed. (Table 1,2,3,4,5)

Table 1 kidney function test

PARAMETERS	**D-1**	**D-2**	**D-3**	**D-4**	**D-5**	**D-6**	**D-7**	**D-8**	**D-9**	**D-10**	**D-11**	**REF. RANGE**
CREATININE (mg/dl)	4.92	4.17	---	4.54	2.88	4.18	2.6	3.6	4.34	2.87	2.25	**0.6-1.1**
UREA (mg/dl)	122	100	---	85.7	40	62.5	34.1	55	73.5	49.6	34.7	**15-40**
SODIUM (mmol/L)	141.7	143.8	---	139.9	136.1	136.	139.2	138.1	134.4	136.8	140.3	**135-148**
POTASSIUM (mmol/L)	5.13	4.46	---	3.61	3.27	3.13	3	4.01	2.89	2.88	4.34	**3.5-5.5**
CHLORIDE (mmol/L)	106.5	104.1	---	96.5	97.4	99.4	101.8	99.9	99.6	98.5	101.7	**98-107**
BICARBONATE (mmol/L)	18.9	20.2	---	23.3	23.8	21.8	24.4	24.5	23.1	23.9	26	**22-29**
BUN (mg/dl)	57	46.9	---	40.1	18.7	29.2	15.9	25.7	34.3	23.1	16.2	**6.0-20.0**

TOTAL PROTEIN (g/dl)	4.8	---	---	4.3	---	---	---	---	---	---	---	**6.4-8.3**
ALBUMIN (g/dl)	3.1	---	---	2.8	---	---	---	---	---	---	---	**3.97-4.94**
GLOBULIN (g/dl)	1.7	---	---	1.5	---	---	---	---	---	---	---	**2.0-3.5**
A/G RATIO (%)	1.82	---	---	1.87	---	---	---	---	---	---	---	**1.1-2.2**
CPK CREATINE KINASE	71502	41506	23774	22281	10866	---	3102	1458	772	413	326	**10 -120**

Table 2 Liver function test

PARAMETERS	**D-1**	**D-2**	**D-3**	**D-4**	**D-5**	**D-6**	**D-7**	**D-8**	**D-9**	**D-10**	**D-11**	**REF. RANGE**
SGOT(AST) U/L	1854	1072	---	---	---	----	---	---	---	---	---	**<32**
SGPT(ALT) U/L	243	205	---	---	---	----	---	---	---	---	---	**<33**
LDH (U/L	---	---	---	3014	2389	2063	1656	1387	1162	985	---	**<480**
TOTAL PROTEIN	---	---	---	----	---	40.5	---	---	---	----	---	**0-15**

Table 3 Complete blood count

PARAMETERS	**D-1**	**D-4**	**D-6**	**D-7**	**D-8**	**D-9**	**D-10**	**D-11**	**REF.RANGE**
HAEMOGLOBIN (gm/dl)	11.1	---	8.2	7.3	7.6	7.1	9.1	8.6	**11.5-15.0**
RBC (mil/cmm)	3.92	---	3	2.61	2.74	2.5	3.14	3.02	**3.8-4.8**
PCV (%)	33.9	---	24.5	21.8	22.9	21	26.6	26.3	**36-46**
TOTAL WBC COUNT (K/uL)	18.95	---	11.2	10.91	10.36	11.72	12.98	9.69	**4.0-10.0**
NEUTROPHIL (%)	92.9	---	82.3	81.3	89.7	79.5	78.6	67.8	**40-80**
LYMPHOCYTES (%)	4.1	---	9.3	11.6	7	13	12.9	22.5	**20-40**
Ab. NEUTROPHIL (K/uL)	17.6	---	9.2	8.87	9.29	9.32	10.21	6.57	**2.0-7**
Ab. LYMPHOCYTES(K/uL)	0.78	---	1.0	1.27	0.73	1.52	1.67	2.18	**1.0-3**
PLATELET COUNT (K/uL)	130	152	180	140	167	153	109	133	**150-400**

Table 4 Coagulation profile

PARAMETERS	**D-1**	**REF. RANGE**
PROTHROMBIN TIME PT (SECS)	17.6	**11.5-16.0**
INR	1.38	**0.8-1.2**

Table 5 CRP

PARAMETERS	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11	REF.RANGE
CRP	10.1	---	---	42.7	60.5	47.2	37.9	36.6	24.3	68.3	54.8	**<5**

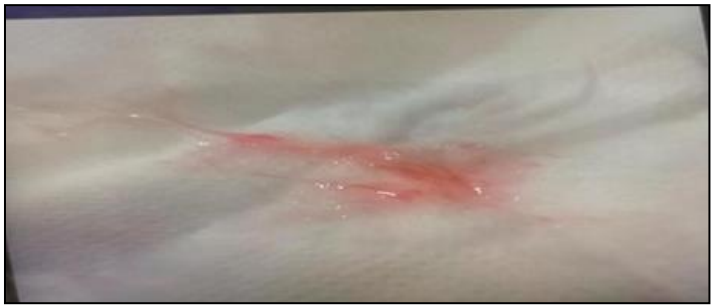

Figure 1 BLOOD IN SPUTUM

Figure 2 Swelling in the hand

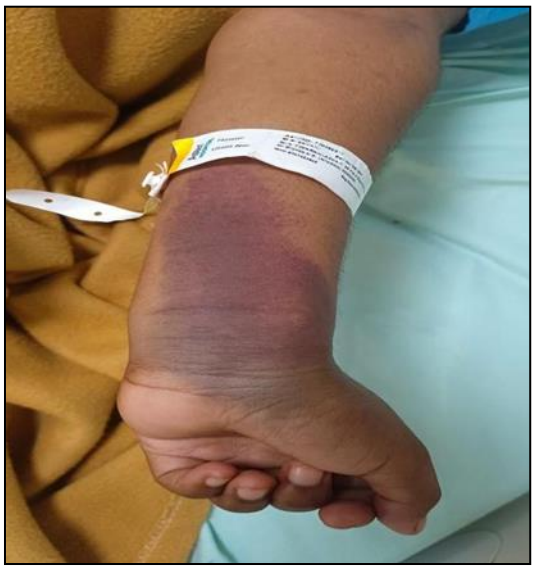

Figure 3 Swelling in the hand

3. Discussion

PPD (para-phenylenediamine) is widely known as a skin irritant and is easily absorbed through the skin. These amines are not found naturally; they are instead chemically produced by various industrial companies. The extent of kidney damage caused by hair dyes can vary, ranging from mild protein leakage to acute kidney injury (AKI), which is characterized by low urine output and typically occurs a few days after exposure. Research has shown that PPD poisoning significantly increases the risk of renal failure, with the relative risk estimated to be between 47.3% and 100%, especially in cases linked to dermatitis.

Our patient suffered from a severe illness that presented multiple symptoms and abnormal test results, and she developed acute kidney injury, resulting in no urine output (anuria). Additionally, she experienced pulmonary edema and Adrenal hemorrhage and Muscle breakdown (rhabdomyolysis) was present.

She faced several distressing symptoms, including shortness of breath, swelling in her face, hands, and legs, and hemoptysis. Her kidney function tests and blood results were abnormal, and her inflammation markers (CRP) were substantially elevated.

Hepatitis with PPD intoxication has been reported in a few studies. Ishtiaq R.11 showed that the frequency of acute hepatitis in PPD intoxication is high (51%) with higher mortality, Sultan MO.12 Hepatitis marker (SGOT/SGPT) reported significantly higher in 75% of the patients compared to the result from a prospective study of PPD intoxication (40%).

The patient's liver function tests showed signs of hepatotoxicity due to the poisoning (Increased INR and ALT), She developed acute kidney injury (AKI) with anuria and a right adrenal hemorrhage. Unfortunately, there is no specific antidote available to reverse the effects of PPD poisoning. The main treatment goals are to prevent airway complications and further kidney damage due to rhabdomyolysis.

Her treatment included forced alkaline diuresis, electrolyte supplements, isotonic normal saline, hemodialysis, prophylactic antibiotics, antihypertensive medications, and other supportive care.

4. Conclusion

Serious health conditions like rhabdomyolysis, acute kidney injury (AKI), respiratory distress, and adrenal hemorrhage can result from Super Vasmol hair dye poisoning, which is mostly caused.

By paraphenylenediamine (PPD). After consuming the dye, a 25-year-old woman experienced severe toxicity, which resulted in pulmonary edema, anuria (no urine output), abnormal blood tests, and elevated inflammation markers. Although some studies have documented PPD-induced hepatitis.

PPD poisoning has no known cure, so supportive care—which includes hemodialysis, electrolyte correction, diuretics, and airway management—is the mainstay of treatment. The seriousness of PPD poisoning and the necessity of prompt medical attention to avoid fatal consequences are highlighted in this case.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

Authors have declared that there is no conflict of interest.

Statement of ethical approval

No need ethical approval for case report

Statement of informed consent

Written informed consent was obtained from the individual for the study.

References

[1] Bhargava P, Matthew P. Hair dye poisoning. J Assoc Physicians India. 2007;55:871–2.

[2] Huerta-Alardin AL, Varon J, Marik PE. Bench-to-bedside review: Rhabdomyolysis – An overview for clinicians. Crit Care. 2005;9:158–69. doi: 10.1186/cc2978.

[3] Chrispal A, Begum A, Ramya I, Zachariah A; Hair dye poisoning: an emerging problem in the tropics:an experience from a tertiary care hospital in South India. Tropical Doctor, 2010; 40(2): 100–103.

[4] Sahay M, Vani R, Vali S; Hair dye ingestion: an uncommon cause of acute kidney injury. Journal of Association of Physicians of India, 2009; 57(11):743–744.

[5] Sampathkumar K, Yesudas S. Hair dye poisoning and the developing world. J Emerg Trauma Shock 2009; 2:129–31.

[6] Filali A, Semlali I, Ottaviano V, Furnari C, Corradini D, Soulaymani R. A retrospective study of acute systemic poisoning of paraphenylenediamine (occidental takawt in Morocco) Afr J Tradit Complement Altern Med. 2006;39:142–9.

[7] El-Ansary EH, Ahmed ME, Clague HW. Systemic toxicity of paraphenylene diamine. Lancet. 1983;1:1341. doi: 10.1016/s0140-6736(83)92456-x.

[8] Hamdouk M. PPD Nephrotoxicity: [Sheffield] Sheffield Kidney Institute; 2001. Paraphenylenediamine (Hair Dye) Acute Systemic toxicity; pp. 34–47.

[9] Sampathkumar K, Yesudas S. Hair dye poisoning and the developing world. J Emerg Trauma Shock.2009;2:129–31. doi: 10.4103/0974-2700.50749.

[10] Sahay M, Vani R, Vali S. Hair dye ingestion – An uncommon cause of acute kidney injury. J Assoc Physicians India. 2009;57:743–4.

[11] Ishtiaq R, Shafiq S, Imran A, Ali QM, Khan R, Tariq H, Ishtiaq D. Frequency of acute hepatitis following acute paraphenylene diamine intoxication. Cureus. 2017 Apr 21;9(11).

[12] Sultan MO, Khan MI, Ali R, Farooque U, Hassan SA, Karimi S, Cheema O, Pillai B, Asghar F, Javed R. Paraphenylenediamine (Kala Pathar) poisoning at the national poison control center in Karachi: A prospective study. C ureus. 2020 May 29;12(5).