

Life Saving Emergency Tracheostomy in Supervasmol Poisoning - A Clinical Experience!

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Abstract

Super vasmol 33 is a Hair dye also known as ParaPhenylenediamine (PPD) is a Common house hold Poison used as a suicidal agent because of its low cost and easy availability in the market. There are Many case reports of Paraphenylenediamine (PPD) poison used for deliberate self harm by adults and Accidental ingestion by children. We report a case of a 20 year old female who intentionally consumed Super vasmol poison, and presented to our casualty within 6 hours of ingestion with Angioedema of face And Severe Respiratory Distress. Timely Tracheostomy after failed intubation proved to be a life saving Procedure in our patient.

Keywords: Super Vasmol Poison; Emergency Tracheostomy.

Introduction

Super vasmol also known as Paraphenylenediamine (PPD) is an aromatic amine which is used in variety of industrial products and by hair dye companies. The constituents of this hair dye are PPD, sodium lauryl Sulphate, EDTA, cestostearyl alcohol, resorcinol, propylene glycol, liquid paraffin, herbal extracts, Preservatives [1]. A rising trend of super vasmol poison ingestion both accidental and as a means of Deliberate self harm has been reported in India [2].

Paraphenylenediamine poisoning is reported globally, More so in developing countries. The first artificial dye was synthesized in the laboratory in 1856 [3].

In 1990 the number one leading Cause of poisoning in Morocco was found to be PPD [4] which caused Contact dermatitis in susceptible individuals, but its ingestion lead to Acute Angioedema of face and neck, Rhabdomyolysis and Acute Renal Failure [5,7].

Case Report

A 20 year old female was brought by her parents to casualty with complaints of Swelling over the face and inability to speak for 3 hours duration. On general examination patient was conscious but Unable to speak because of edema of the face and neck. Pulse 84/min regular, BP 110/70mmHg, RR16/min, SpO₂ 92% on room air. Examination of oral cavity showed limited mouth opening and Edema of tongue. Neck examination revealed cervico facial swelling. Detailed history revealed that the Patient had orally consumed super vasmol hair dye as an act of suicide 7 hours prior to Reporting to casualty. 30 minutes after admission in the casualty the patient developed Severe Stridor And started to desaturate, SpO₂ dropped to less than 60%, patient was immediately shifted to emergency Operating room where oral intubation could not be attempted in view of the cervico facial and oral edema. Blind nasal intubation was tried which resulted in failure to intubate, flexible video laryngoscopy guided intubation was also attempted which showed edema



Fig. 1: Patient at the time of presentation to casualty, failure of flexible video laryngoscopy, intra operative tracheostomy and immediate post operative period



Fig. 2: Post operative follow up and ENT OPD review for video direct laryngoscopy



Fig. 3: Patient after post tracheostomy stoma closure

of epiglottis, false cords and true vocal cords, and the attempted intubation resulted in failure. Immediately a life saving Emergency tracheostomy was performed on this patient, portex tracheostomy tube 7 size was used to secure the airway and with ventilatory support the patient was shifted to intensive care unit. Initial blood parameters showed Hb -12.3gm%, wbc 9,600 cells/cumm, platlet-2.3lakh, serum urea-28mg/dl, serum creatinine 0.6mg/dl. Sodium 139, potassium 4.1 chloride 99 mmol/L. 18 hrs after admission the patients urine examination revealed proteinuria, haemoglobinuria and hemosiderinuria. CREATININE KINASE was 440 U/L. Liver function test was WNL. Patient was given symptomatic treatment and adequate i.v hydration, intake and output was monitored. On the 5 th day of admission, patient's blood and urine examination was WNL, facial edema reduced significantly, patient was discharged after 10 days with fullers metal tracheostomy tube insitu, and follow up in Psychiatry and ENT department.

Discussion

Suicidal tendencies and suicidal rates have drastically increased over the past few decades and the common available super vasmol hair dye has become one of the important house hold substance used as a means of poisoning [1]. In 1924 Nott documented the first case of PPD poison in the owner of a hair saloon [6]. Paraphenylenediamine (PPD) is

a derivative of paranitroaniline which on oxidation produces Bondrowski's base which is highly toxic, mutagenic and an allergen [7]. PPD is used along with ammonia and hydrogen peroxide in hair dyeing and also when added to henna it is used in tattooing for its darkening effects [9]. Onset of symptoms after ingestion of super vasmol poison is usually between 4-6 hours. The symptoms are considered to be dose related and patients after ingestion of large quantity (7-10 gm of super vasmol) have higher morbidity and mortality [7]. Patient presents most commonly with Angioedema of face and neck, and Respiratory Distress. Organ damage caused by super vasmol poison may be assessed by appropriate tests in case with rhabdomyolysis, kidney and liver involvement. The effect of resorcinol is associated with seizure, coma, methaemoglobinemia, acute tubular necrosis, arrhythmias, intra vascular haemolysis, gastritis, vertigo, tremors, myocarditis and arrhythmias. The characteristic triad mentioned in literature is ANGIO NEUROTIC OEDEMA of face and neck leading to stridor, RHABDOMYOLYSIS with chocolate coloured urine and ACUTE RENAL FAILURE could be a confirmative evidence of Paraphenyldiamine poison even in the absence of laboratory facilities and when history is lacking in case of emergency [9]. Cervico Facial Oedema was the most marked presentation in our patient, severe enough to cause Respiratory Distress. Timely management to secure the airway was under taken and emergency tracheostomy was performed as a life saving procedure for the patient, Anti histamine and steroids were used to treat the patient although there is no therapeutic trials as to their benefit. Forced diuresis and maintenance of high urine output was done to augment the patient's renal function which improved in the following days. There is no specific antidote for PPD poison [2]. Treatment is mainly symptomatic and supportive. Early clinical diagnosis and timely intervention in securing an open airway, maintenance of adequate hydration and oxygenation along with good urine output is the corner stone of successful management and outcome.

Conclusion

Super vasmol poison is rapidly emerging as a suicidal poison because of its easy availability and

Extensive use, hence awareness of its effects and side effects is important. The classical presentation of Cervico Facial Angioedema, severe Rhabdomyolysis and Acute Renal Failure warrants early diagnosis

And intervention to secure the airway and aggressive supportive is required to prevent organ failure.

Legislation is required to ensure that the hair dye is not freely available in the market.

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Conflict of Interest: Nil

References

1. Sonis S, Nagarik AP, Dinaker M, Adikey GK, Raman A systemic toxicity of paraphenylenediamine, Indian j med sci; 2009;63:164-166.
2. Yabe K. The effect of a P - phenylenediamine containing hair dye on the calcium mobilization in the chemically skinned skeletal muscle of the rat. Nihon HoigakuZasshi 1992;46:132-140.
3. Krishnaswamy Sampathkumar, SoorajYesudas. Hair dye poisoning and the developing world. Emerg Trauma Shock 2009 May-Aug;2(2):129-131.
4. Benslama A, Moutaouakkil S, Mjahed K, et al Mokina M, Lahbil D, et al. Intermediary syndrome in acute malathion poisoning . Presse Med 1998;27:713-715.
5. Mathur AK, Gupta BN, Narang S. Et al. Biochemical and histopathological changes following dermal exposure to paraphenylenediamine in guinea pigs JApplToxicol 1990;10:383-6.
6. Filali A, Semalali I, Ottaviano V, Furnari C, Corradini D, Soulaymani R. Aretrospective study of acute systemic poisoning of paraphenylene diamine. Afr J Tradit Complement Altern Med 2006;39:142-9.
7. Ashraf W, Dawling S, Farrow LJ. Systemic paraphenylenediamine (PPD) poisoning: A case report and review. Hum ExpToxicol 1994;13:167-170.
8. Bokutz M, Nasir N, Mahmood F, Sajid S. Hair dye poisoning and rhabdomyolysis J Pak Med Assoc 2015;65:425-426.
9. 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. Trop Doct 2010;40:100-103.