

Anaphylactic Reaction To Paraphenylenediamine or Paratoluenediamine In Hair Dye and Pure Henna Tattoos

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Objective: Contact dermatitis to paraphenylenediamine (PPD) and paratoluenediamine (PTD) in black henna and black hair dye has been reported in multiple case reports. In addition, numerous cases of myocarditis, myocardial infarction, renal failure, and rhabdomyolysis related to PPD ingestion have been reported. However, there are only two reported cases of systemic anaphylaxis related to dermal contact with PPD or PTD between 1966 and 2007 (1,2). We present a case of PPD/PTD induced anaphylactic reaction presenting as syncope following sensitization from black hair dye and pure henna. **Case Report:** A 57 year old female brought to the emergency department with shortness of breath, throat tightness, drooling and feeling of doom after a syncopal episode at a hair salon. Patient was also found to be hypotensive, tachypneic and hypoxic but conversant. During the past 5 years the patient started using black hair dye and developed progressively worsening contact dermatitis for which she pre-medicated herself with diphenhydramine prior to use. On the day of presentation, the patient went to a hair salon and had not pre-medicated herself. Additional history revealed occasional exposure to pure henna over the past several years associated with mild localized itching. Patient had also been a teacher for henna tattoos in India 20 years previously.

Conclusion: It is proposed that small amounts of PPD in pure henna sensitized this individual, along with black hair dye, which culminated in an anaphylactic reaction to a high dye load on the day of presentation. The patient's condition improved with epinephrine, steroids, diphenhydramine and famotidine and was observed in the ICU overnight. Consultation by an allergist who felt that PPD or PTD could have induced the anaphylaxis was completed. Subsequently, the patient was challenged with a hair dye without PPD and PTD and had no local or systemic reaction. It is presumed that her reaction was due to either PPD or PTD in henna and black hair dye. **Reference:** 1. Goldberg BJ, et.al. Systemic anaphylaxis due to an oxidation product of p-phenylenediamine in a hair dye. *Ann Allergy* 1987;58:205-8. 2. Belton AL, et al. Fatal Anaphylactic Reaction to Hair Dye. *American Journal of Forensic Medicine & Pathology* 1997;8:290-2.