

## Indelible voters' ink causing partial thickness burn over the fingers

Sir,

A mark of election ink over one of the fingers is a mark of democratic values in India. Indelible election ink is used during elections in India and abroad to prevent duplication of voting. Usually, it is used over the left index fingernail and cuticle. India is having one of the largest electoral rolls in the world with multiple levels of elections. Hence, election ink is used in large quantity and very frequently.<sup>[1]</sup> Indelible election ink has been claimed to be skin safe and free of side effects in experimental studies.<sup>[2]</sup> However, we are reporting the first case of partial thickness burn over fingers due to application of indelible voter's ink during one of the elections.

A 30-year-old male presented to the emergency with complaints of pain, swelling, burning sensation and black staining of fingertips of both hands [Figures 1a and b]. The patient worked as a polling officer at a polling booth during an election. His duty was to apply indelible voter's ink on the fingers of the voters. Every time he used to apply ink on the finger of the voters, he inadvertently used to smear his fingers too, as the length of the applicator was short. At the end of the polling day, most of his fingertips were stained with ink. By late evening, the patient started having burning sensation over his fingertips. Next day he had swelling, pain and redness over all the fingers and a small blister. Patient reported to our emergency on 3<sup>rd</sup> day with erythema and swelling over the fingers and adjacent palm indicating 1<sup>st</sup> degree burn. There were small blisters over the right ring (4<sup>th</sup>), and middle (3<sup>rd</sup>) fingers indicating 2<sup>nd</sup> degree partial thickness burn [Figures 1a and b]. There was extensive staining of the fingers with ink. There was no history of allergy to any drug or known allergens.

The burn area was managed conservatively. On 10<sup>th</sup> day, the patient was asymptomatic. The pigmented keratin layer was peeling off with evidence of neo-epithelialisation. After 3 weeks, there was complete healing of the burn wound. There was no stain over the fingers except over the nails [Figures 2a and b].

This ink is used in many countries during elections.<sup>[1,3]</sup> For security reasons the election commission of India and the manufacturing firms do not divulge the detail of its ingredients. One of the manufacturing units mentions that it may be an irritant to the eyes and the mucous membranes and may cause skin burn.<sup>[4]</sup>

As per the available information, the indelible voters' ink contains 10-18% silver nitrate, some undisclosed chemicals, dyes and aromatic materials.<sup>[1,3]</sup> At this concentration, silver nitrate is supposed to be skin safe. If the ink is old then because of the evaporation of alcohol, the concentration may increase which may cause cutaneous burn. The repeated smearing of the fingers with the ink containing silver nitrate may cause burn.<sup>[5]</sup> Repeated contact of the chemical with skin might have produced exothermic chemical reaction leading to blister.

During pre-election training programme, the patient was not told about any reaction or burn due to election ink, hence, the patient did not take any precaution. This case indicates that the risk of burn exists with the use



**Figure 1a:** Indelible voter ink staining the palmar aspect of fingers of both the hands on 3<sup>rd</sup> post-burn day. There was a blister over distal interphalangeal joint of the middle finger of the right hand



**Figure 2a:** Palmar aspect of both hands at 3 weeks with healed lesions

of indelible ink; however, the medical literature is silent about it. With this experience, we recommend that the risk of chemical burn should be explained to the election duty officers during pre-election training, so that a direct contact with the ink could be avoided. To prevent smearing of fingers, the applicator should be long, and the election officers should use protective gloves as a routine practice.

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**Figure 1b:** Indelible voter ink staining the dorsal aspect of fingers of both the hands on 3<sup>rd</sup> post-burn day. There was a blister over ring finger of the right hand



**Figure 2b:** Dorsal aspect of both hands at 3 weeks

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