



POVIDONE-IODINE INDUCED BURNS RARE ADVERSE DRUG REACTION -A CASE REPORT

Obstetrics & Gynaecology

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ABSTRACT

Introduction -Povidone-iodine (PVP-I) is a widely used antiseptic known for its broad-spectrum antimicrobial activity. It is commonly applied in preoperative skin preparation, wound care, and infection control. However, despite its efficacy, povidone-iodine can occasionally cause chemical burns, particularly in patients with sensitive skin, prolonged exposure, or improper application. Povidone-iodine-induced burns typically manifest as erythema, blistering, and skin necrosis, resembling thermal or chemical burns. These reactions may be due to its cytotoxic effects, prolonged occlusion, or hypersensitivity. Certain risk factors, such as compromised skin integrity, neonates, elderly patients, and individuals with iodine allergies, increase susceptibility to such burns. The burn is usually seen immediately after the procedure or on the next day, and typically heals with minimum scarring within 3–4 weeks with conservative treatment. **Conclusion** -Prompt recognition and management of povidone-iodine burns are crucial to prevent complications such as scarring, secondary infections, and delayed wound healing.

KEYWORDS

(PVP-I) Polyvinylpyrrolidone-iodine

INTRODUCTION

Povidone-iodine, commonly known by the brand name Betadine, is a widely used antiseptic valued for its broad antimicrobial spectrum and rapid action. It is frequently employed in surgical skin preparation and wound management. However, despite its general safety, there have been rare instances of chemical burns associated with its use.

Povidone-iodine-induced burns, or irritant contact dermatitis, typically occur when the solution is not allowed to dry completely, pools in dependent areas, or is covered by an occlusive dressing, leading to irritation, maceration, pressure, and friction. An unexpected chemical burn results not only in psychological trauma to the patient and physician but also in prolongation of hospitalisation and in possible disruption of the doctor–patient relationship.

PVP-I (Polyvinylpyrrolidone-iodine) solution is used worldwide as a surgical paint because of its potent germicidal activity.¹ In most of the reported cases of ICD secondary to PVP-I, the clinical presentation resembled chemical burns, showing clearly marginated infiltrative erythema often accompanied by bullae, vesicles and erosions.² Symptoms of Povidone-Iodine Burn: Redness, pain, or irritation Blistering or peeling skin Burning sensation Skin discoloration (dark brown or black in severe cases).

Preventative measures include ensuring the solution dries completely before draping, preventing pooling, and avoiding occlusion. Treatment typically involves supportive care, similar to that for partial-thickness burns, and may include antimicrobial prophylaxis with topical agents and dressings that promote healing. The burn is usually seen immediately after the procedure or on the next day, and typically heals with minimum scarring within 3–4 weeks with conservative treatment.

Case Report

In this case report a 32-year-old woman who underwent laparoscopic right ovarian cystectomy as one day procedure involving application of the topical antiseptic 10% povidone-iodine solution. Antibiotic prophylaxis with intravenous cefoxitin (1 gram) was administered preoperatively. On the day of surgery 6-8 hours later, the patient was complaint of burning, pain, itching, marked redness, and blistering extending from her midback to buttocks. Brown color patches appear on her back and buttocks also was evident on day 1.



(Image 1) On day 1 (Brown Color Patches Appear on her Back and Buttocks)



(Image 2) On day 2 (Partial-thickness Chemical Burn)

On day 2 brown patches convert into blisters with peeling of skin which was diagnosed as Partial-thickness chemical burn.

The patient had neither significant personal or family history of dermatologic diseases nor prior history of exposure or sensitization to PVP-I. Wound cultures were negative for bacteria and viruses. Patient was managed by conservative management. Symptomatic management done and discharge given to patient with regular follow up in OPD. Burn lesion typically healed in 3-4 week of conservative management with minimal scarring.

Review of Literature

Review of the literature yielded 13 other cases of povidone-iodine-induced burn. This under recognized adverse effect of povidone-iodine application typically occurs when the povidone-iodine has not been allowed to dry or has been trapped under the body of a patient in a pooled dependent position.

Dickinson and Bailey reported four burns in three patients beneath the cuffs of pneumatic tourniquets using alcohol based 10% Povidone-iodine. In all cases, the burns were seen when the tourniquet was removed. All burns were of partial thickness and healed within 4 weeks, leaving minimal scarring.³ Nahlieli et al. reported three cases of chemical burns with 10% Povidone-iodine. □ Chemical burns as a result of impregnation of the tourniquet padding with the chemical agents used for skin preparation have been previously reported and are rare. ³They can cause blistering, as in our case, which resolves within a few weeks, or progress to full-thickness injuries that can take several months to heal.

CONCLUSION

This article explores the causes, risk factors, clinical presentation, and treatment strategies for povidone-iodine burn. Preventative measures include ensuring the solution dries completely before draping, preventing pooling, and avoiding occlusion. Clinicians should be aware of this potential adverse reaction to implement appropriate precautions.

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