

# Managing a chronic wound in a heroin user



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Heroin is the most common illicit drug used intravenously. This article examines the 'skin popping' that occurs when using the drug, as well as the subsequent ulceration and scarring. Treatment and assessment is vital in order to increase compliance and wound healing in cases where heroin abuse is present.

### Page points

1. Heroin 'skin popping' may produce abscesses, with subsequent ulceration and scarring
2. Before it is sold, heroin is 'cut' with other substances, such as quinine, mannitol, baking soda, strychnine, caffeine and cocaine
3. Wound assessment and dressings for patients with a heroin-induced lesion are similar to those used for any patient with a chronic lesion

## INTRODUCTION

Heroin is the most common illicit drug used intravenously. Some 70% of drug users in Italy are heroin addicted<sup>[1]</sup>. Intravenous heroin users are at risk of developing venous ulcers as a result of the contamination from injecting, the sclerosing effect of adulterants and the trauma to the venous and lymphatic systems.

Before it is sold, heroin is 'cut' with other substances, such as quinine, mannitol, baking soda, strychnine, caffeine and cocaine. These substances may increase the effect of heroin or simply act as a filler. Adulterants may produce vasospasm, intimal damage, thrombus and particulate embolisation. Quinine may produce an abscess at the injection site and promote growth of anaerobic organisms<sup>[2]</sup>.

Illicit drugs are dissolved prior to injection, often in lemon juice, and are then heated until all of the powder dissolves. The resulting solution is filtered and injected. The acidic nature of the solution contributes to the sclerosis of the veins that have been in contact with the needle. Some users may initially inject into accessible veins and then progress to subcutaneous injection — the use or maintenance of granulation tissue is usually a final resort<sup>[3]</sup>.

When users inject directly through the skin's surface ('skin popping'), the drug is absorbed subcutaneously, leading to abscess formation, infection and scarring, which presents as small circles on the skin<sup>[4]</sup>. Also, the use of unclean equipment and needle sharing can lead to abscess formation<sup>[5]</sup>. Skin popping may lead to the development of chronic wounds.

## CASE PRESENTATION

This case study centres on a 43-year-old man with a five-month history of forearm ulcers resulting from heroin injection who presented at the Pronta Assistenza low-threshold facility for drug users. He has been an intravenous drug user for 20 years and has been on a methadone maintenance programme. He admitted to practising skin popping on his left forearm.

### Wound assesment

On the 1 September, 2011, a clinical examination revealed a skin ulcer measuring 6 x 2cm with a depth of 2mm [Figure 1]. The wound was painless, the wound bed was completely necrotic, there was low exudate production, (Wound Bed Preparation (WBP) score of D1)<sup>[6]</sup>, odour was absent and there was erythema on the peri-ulcer skin.

### Treatment

Treatment comprised two dressing changes a week, one on the facility (see below) and one at home. Non-compliance with treatment regimens is a commonly encountered problem in injecting drug users<sup>[7]</sup>. Self-management of injection-related wounds is common between intravenous drug users and include certain behaviors that may be potentially harmful<sup>[8]</sup>. In the author's experience, patients who are educated about the wound and its care avoid harmful behaviour and are more likely to adhere to a therapeutic regimen.

The patient removed his dressings after two or three days at home and applied iodopovidone gel and vaseline gauze. Iodopovidone gel is effective against a wide spectrum of organisms, prevents ingress of pathogens into wounds, acts as a barrier to cross-infection and also prevents

the progression from localised to overt infection<sup>[9]</sup>. Moreover, it inhibits biofilms<sup>[10]</sup> and is inexpensive for the patient. The treatment continued as below:

- **1 September, 2011 (first treatment) — a hydrogel was applied to the wound bed with a hydrocolloid and cotton gauze secondary dressing. Autolytic debridement is highly selective in dissolving non-viable tissue without damaging the surrounding skin. Autolysis uses the body's own enzymes and moisture to rehydrate, soften and finally liquefy hard eschar. This technique requires the wound to be kept moist with occlusive or semi-occlusive dressings<sup>[11]</sup>**
- **Second/third treatments (8 September and 15 September, 2011) — the wound bed contained only fibrinous tissue and no eschar; there was low exudate production; (WBP score C1) (6); odour was absent; and there was erythema on the peri-ulcer skin. The dressing selected involved autolytic debridement with a hydrocolloid<sup>[12]</sup> and a cotton gauze secondary dressing secured with a bandage**
- **Fourth treatment (22 September, 2011) — the following signs of infection were present: change in wound bed colour and crepitus, and an increase in exudate<sup>[12]</sup> [Figure 2]. The dressing used on the wound bed was a silver Hydrofiber® (ConvaTec) with vaseline gauze used as a secondary dressing. These were held secure with a bandage. Although a moist wound environment is necessary for optimal wound healing, overproduction of exudate may adversely affect healing. Silver is effective against a wide spectrum of organisms<sup>[10]</sup> and Hydrofiber absorbs liquid, such as exudate, to form a gel. When placed under pressure, the gel changes shape, but retains the fluid. Materials that form uniform cohesive gels are generally more likely to stay intact during use and may reduce the risk of peri-ulcer maceration<sup>[13]</sup>**
- **Fifth/sixth treatments (30 September and 7 October, 2011) — there were no more signs of infection. Vaseline gauze and cotton gauze were used as secondary dressings, secured with a bandage. The moist wound environment was necessary for optimal wound healing<sup>[13]</sup>**
- **Patient discharge (10 October, 2011) — the patient was discharged and instructed to continue the vaseline gauze dressing at home. Follow-up was every two weeks**

- **Follow-up stopped as wound was fully healed (2 December, 2011) — [Figure 3].**

## CONCLUSION

Intravenous drug users access the author's facility for the dressing of acute and chronic wounds. Subcutaneous abscess is the most common complication in people who perform skin popping, which can lead to local ulceration. Wound assessment and dressings for patients with a heroin-induced lesion are similar to those used for any patient with a chronic lesion<sup>[2]</sup>. It is important that patients are taught about their wound and its care to increase compliance and aid wound healing.

## CONFLICT OF INTEREST

The author has no conflict of interest to declare.

## AUTHOR DETAILS

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Figure 1. Heroin skin popping. Chronic wound at first presentation.



Figure 2. Four weeks after first presentation, there were signs of infection.



Figure 3. The wound two months after first presentation.

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