



Injecting drug use and skin lesions



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This is the fourth article in a series of case files from general practice that explore treatment issues around substance use and commonly encountered general practice presentations.

BACKGROUND

Many illicit drugs can be injected, with this mode of administration associated with a range of skin morbidities.

OBJECTIVE

This article illustrates a dermatological presentation associated with injecting drug use.

DISCUSSION

Track marks, injection site marks and skin abscesses are well known to be associated with injecting drug use. However, there are other dermatological manifestations that are less commonly known. Signs may be more subtle, particularly when drug use is recreational and patients do not fit commonly held stereotypes of injecting drug users.

Case history – Emma

Emma, 28 years of age, is a psychologist whom you first met when she was a university student in search of the oral contraceptive pill. You are aware that she has had a difficult relationship with her boyfriend, Brent, whom she met shortly after moving to the city to start university and with whom she now lives. Emma presents with a rash that has been present for about 3 months.

Emma remains on the same contraceptive pill and reports no new prescribed or over-the-counter medications. No one else in her circle of friends has the same rash and she has not recently travelled or experienced recent illness. She is a nonsmoker, consumes 2–3 beers on the weekend, has no pets and no previous rashes. Despite Emma reporting that her rash started as pink, raised, nonitchy lesions, there are clear excoriation marks. She thinks she is scratching while asleep and says that some lesions have been quite inflamed with pus, but generally have been dry. You can see more than 20 lesions that vary from raised open sores to crusted lesions on her limbs. She has tried insect bite creams, scabies treatments, Betadine, papaya cream, and aloe vera, as well as some corticosteroid cream her boyfriend had previously used for eczema.

Emma's parents, whom she visits once a month, run a petrol station in a small country town about 150 km away. She has been quite stressed in recent months as her mother has developed bowel cancer.

You think Emma may have developed folliculitis or furunculosis and that her scratching has spread the infection. Her recent stresses may have contributed by reducing her immunity. You take a swab from one of the lesions and suggest to Emma that she start a daily skin cleansing routine using chlorhexidine washes, nail scrubbing, and mupirocin ointment on the nasal mucosa and under her nails. You

stress the importance of not scratching.

Five weeks later, Emma thinks her skin has improved a little but the lesions are still present and you count at least 20 lesions on her limbs. She admits that she can't help picking at the lesions even though she knows it delays healing.

The swab is uninformative as it identified growth consistent with normal skin organisms. However, as topical measures have been relatively ineffective, you decide to treat Emma with dicloxacillin for 7 days to cover the usual causative organism, *Staphylococcus aureus*.¹

Emma's skin clearly improves but does not resolve, and over the next 6 months has frequent flare ups. On the advice of a dermatologist colleague you arrange for nasal swabs and try clindamycin, but the problem persists.

During a consultation, Emma admits that she has not told you everything. She has been occasionally injecting amphetamines and believes this to be part of the problem.

Amphetamine users sometimes experience the sensation of something crawling under their skin and may display compulsive skin picking behaviour.^{2,3} Repeated self inflicted skin trauma introduces skin organisms through the protective epidermal barrier and the vasoconstrictive effects of amphetamines delays healing.

Recognising compulsive behaviour in herself is of great concern to Emma. She fears that work colleagues will suspect drug use from her skin and she is conscious of wearing

long sleeves and pants as summer approaches. However, as a health professional, she has felt that her options for seeking help are limited because of confidentiality concerns.

What is achievable at this appointment?

Disclosure of illicit drug use is difficult for all patients as they risk judgement and rejection. For a health professional the risk is even greater as there are implications for work and long term career outcomes. Being open, nonjudgmental and establishing a continuing relationship with patients helps to create the necessary environment for trust. However, it is not surprising that even with the greatest empathy, patients are reluctant to tell us about illicit drug use. In this case, Emma needed time and positive experiences from consultations to disclose this information. You acknowledge to Emma that it must have been hard for her to tell you about her injecting drug use and confirm your commitment to confidentiality.

Emma tells you she has been using stimulants on the weekends with Brent for 2–3 years. Initially they used oral amphetamines only, as she was concerned about a higher level of risk with injectable forms. Later, they also snorted both ampheta-

mines and cocaine. In the past 6 months Brent has been using injectable forms of amphetamine and cocaine. While Emma initially resisted injecting, she now does so on weekends with Brent. She is careful to ensure that she doesn't use the same veins so there is minimal scarring and always makes sure they both use new injecting equipment to avoid the risk of contamination from each other's equipment.

Emma displays none of the usual skin changes you expect to see at injection sites (Table 1). You praise her for being careful but agree that reducing the amphetamine and occasional cocaine use will be beneficial to her skin. Without the drug related sensation that stimulates the desire to pick at her skin and the vasoconstrictive effect of the drugs, her skin is likely to improve.

To assess Emma's tolerance to these stimulants you seek symptoms related to the withdrawal phase of amphetamine use as outlined in Table 2. Emma has difficulty concentrating, tiredness, anxiety, insomnia and emotionally lability. This is consistent with tolerance to amphetamines and a pattern of withdrawal upon cessation of use after the weekend.

Skin manifestation	Cause
Damaged veins	The most common site used initially is the medial vein in the antecubital fossa of the nondominant arm. Repeated local injections, scarring, the use of blunt needles and severe chemical irritation associated with additives found in some drugs result in damage. If veins become thrombosed over time, injecting drug users seek veins initially on the forearms and hands, and later on the feet, ankles, groin and even the large veins of the neck. Commonly there is increased pigmentation over veins that are frequently used
Tissue ischaemia	Some agents used for diluting (cutting) drugs to increase profits (eg. sugar, corn starch, cellulose, talc) may be insoluble and can result in embolic occlusion of arterioles and capillaries. Tissue ischaemia can stimulate an inflammatory reaction that produces granulomas. Injecting drug users may use filters (eg. cigarette filters, cotton wool) in an attempt to reduce contaminants, but filters also contain foreign materials that can cause similar reactions
Skin abscesses	These relate to the introduction of contaminants, unhygienic injection practices, frequently injecting the same site without allowing time for the skin to heal, injection into soft tissues outside the vein, or injecting through an infected area into a favourite vein

Table 2. Phases of amphetamine use⁴

Phase	Effect
Acute use (repeated acute called a 'run')	Stimulation of the central nervous system causes euphoria, confidence, a sense of great energy and wellbeing, improved use is cognitive and psychomotor performance, tachycardia and hypertension. Excessive use can result in tachyarrhythmia, hyperthermia, cerebral and myocardial infarction, haemorrhage, tremors, agitation, convulsions and psychosis
Early withdrawal ('crash phase')	This initial phase of withdrawal is characterised by feelings of depression, extreme lethargy, formication, headache, anxiety, insomnia, irritability, agitation, confusion and mood lability. The 'crash' starts as the stimulant effects subside, and lasts for hours to several days for cocaine and about 3 weeks for amphetamines
Prolonged withdrawal	This is followed by a more prolonged phase of withdrawal that may persist for 10 weeks or more and include depression (characterised by anhedonia), fatigue and hypersomnia, excessive appetite, irritability, agitation, and aggression

Emma says she wants to stop her amphetamine use but has doubts about her ability to do so. She confides that a week ago, at the insistence of her father who is not coping well with her mother's illness, Emma went to her parents' house for the weekend. She knew that this would prevent her regular weekend use of amphetamines with Brent but believed she could go without them. However, on Friday night after a stressful evening she returned to the city to collect amphetamines to help her cope better. This act scared her, as before this she felt she could control her drug use. Although Emma had suspected that the rash was related to her amphetamine injecting, she had been unable to cease its use in an attempt to control her rash. Emma had blamed her continued use on an inability to resist pressure from Brent, and more recently to help her cope with issues surrounding her mother's ill health.

Emma demonstrates there is a continuum of drug dependence as she has some, but not

all, of the features of dependence as outlined in DSM-IV (Table 3).

Achieving control

It is clear that the management of Emma's skin problem is intimately linked to her ability

to reduce, if not cease her injecting of amphetamines and cocaine. Changing drug use behaviour is often a complex process, and it is important to empower Emma as the decision maker. Simply 'prescribing' ways of changing drug use behaviour is unlikely to be effective. You indicate to Emma that you can help her deal with the depression and anxiety symptoms she experiences following cessation of use, but suggest she may need to have further assistance to manage the inter-linked issues of cessation and her relationship with Brent. Drug use is also clearly an important part of her relationship with Brent and a decision to stop drug use will no doubt impact on this relationship. Emma agrees to see a clinical psychologist whom you recommend.

Antidepressants are often prescribed for withdrawal induced depression and have been shown to be effective for this purpose.⁴ However, their use is limited by the delayed onset of action and the potential for drug interaction if the patient relapses into drug use. Hypertension or the 'serotonin syndrome' can occur rarely (with the latter described when

Table 3. Criteria for substance dependence (DSM-IV-TR)⁷

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12 month period:

1. Tolerance, as defined by either of the following:
 - a. a need for markedly increased amounts of the substance to achieve intoxication or desired effect
 - b. markedly diminished effect with continued use of the same amount of the substance
2. Withdrawal, as manifested by either of the following:
 - a. characteristic withdrawal syndrome for the substance
 - b. same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms
3. The substance is often taken in larger amounts or over a longer period than was intended
4. There is a persistent desire or unsuccessful efforts to cut down or control substance use
5. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects
6. Important social, occupational, or recreational activities are given up or reduced because of substance use
7. The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance

SSRIs are combined with 'ecstasy' or MDMA, an amphetamine derivative).⁵ Other medications include sedatives (short term use of benzodiazepines and antipsychotics) for control of irritability. Use of benzodiazepines carry the risk of dependence but can be considered for short term use (over a period of 2 weeks) with regular monitoring.

Emma feels she is not functioning as well at work as she would like to. Her work colleagues and manager are supportive and understand it is a stressful time because of her mother's illness. At this time you can document that you have seen Emma at least 12 times in the past year, you have never observed her to be intoxicated and she has been reliable with her appointments. While this does not equate to capable work performance, it allows you to judge some functions that are important to work. Emma's drug use appears to be limited to weekends only and you therefore have no reason to consider her unfit for work. As Emma's general practitioner you set up the following structure:

- regular review at which you continue to document the status of withdrawal associated symptoms, and any use of prescribed and illicit drugs
- assessment of her health including the identification of any problems that might be associated with stimulant use or injecting, eg. hypertension can occur with amphetamine use, screening for blood borne viruses such as HIV, hepatitis B and C, cardiac auscultation for signs of endocarditis, routine preventive medicine such as attention to diet, exercise, Pap tests, immunisation for rubella, hepatitis B and tetanus
- encouragement and support, focussing on the gains she has made and review of mood and medications
- regular review of her skin condition with occasional treatment of exacerbations, and
- coordination of care with input from the clinical psychologist.

Over the next 4 months you see Emma regularly. During this period, Emma relapses back to injecting twice before finally ceasing. You reinforce her progress and improvements in her skin motivate her to resist stimulant use.

Emma's eventual cessation of drug use coincides with her decision to leave Brent.

Conclusion

General practitioners see patients in relation to many different problems. With these, drug and alcohol issues can often present. Unlike drug and alcohol specialist services, patients can visit a GP without the stigma of having an associated drug problem. General practitioners also see patients before they consider themselves to have a drug problem and establishing a trusting relationship means that GPs are often the first health professional that help is sought from. Cutaneous manifestations of injecting drug use are numerous, but signs can be subtle and an apparently unrelated dermatological disorder can become an entry point for treatment of a drug of dependence.

Conflict of interest: none declared.

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