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Skin infections in IV drug users

Skin and soft tissue bacterial infections are a common complication of intravenous drug use. This high rate is due to:

- Injection of drugs into the fatty layer under the skin (*skin popping*)
- Leakage of drugs out of veins during the injection (extravasation)
- Tissue death (necrosis) due to toxic materials in drugs
- Increased numbers of bacteria on the skin surface.

Clinical Features

Although skin infections usually present as areas of redness, warmth and tenderness (inflammation), the appearance in intravenous drug users is often atypical. This is because the skin, venous and lymphatic systems are damaged by the frequent penetration of the skin and consequent low-grade infection.

The results are:

- Swelling due to blocked lymphatic vessels ([lymphoedema](#))
- Swollen lymph glands
- Darkly pigmented skin of the affected area
- Scarring.

Fever may or may not be present but bloodstream infection (septicaemia) is uncommon, unless the individual is immune suppressed (e.g. HIV infection).

Infections usually affect the arms or legs as these are the sites used most frequently for injection. Unusual sites may be involved (eg. abdomen, back, groin, scrotum and neck) due to injections in the jugular (neck) or femoral (groin) veins.

Serious skin infections

Abscess



Cellulitis



Necrotising fasciitis



Types of Infection

Cellulitis

Cellulitis is usually caused by Group A [streptococci](#) or [Staphylococcus aureus](#).

Abscess

Abscesses are collections of pus. They are usually caused by infection with *Staphylococcus aureus* but in drug users they occasionally contain a mixture of aerobic bacteria (that require oxygen) and anaerobic bacteria (that do not require oxygen). These mixed abscesses often result in a foul odour.

Skin ulcers

Skin ulcers are common in intravenous drug users. They are generally shallow but have hardened edges. The ulcers are thought to arise from a combination of inflammation around foreign bodies (ie. material from injected drugs) and infection. They can heal with good wound care and oral antibiotics but occasionally require skin grafting.

Necrotising Fasciitis

Necrotising fasciitis is a rare but life-threatening complication of intravenous drug use. In drug users, it most frequently affects an injection site on the left arm. It presents as an area of cellulitis i.e. red, swollen, tender skin with a fever. However the affected area is exquisitely painful and tender and the patient is much sicker and may collapse in shock. There may be crepitus: this is a crackling, popping sensation under the skin due to gas in the soft tissues.

Necrotising fasciitis in drug users may be caused by a variety of bacteria including *Staphylococcus aureus*, aerobic and anaerobic streptococci, Gram-negative bacilli from the gut and other anaerobes.

Management involves immediate surgical exploration of the tissue to drain the pus and remove all the dead skin. Broad spectrum antibiotics such as amoxicillin with clavulanic acid or a combination of vancomycin or flucloxacillin and [metronidazole](#) and an aminoglycoside are required.

Necrotising fasciitis in intravenous drug users is less likely to result in death or amputation than in non-drug users. The better outcome may be because it affects less dangerous sites (ie. limbs versus buttocks and trunk) or because the patients are generally younger and are less likely to suffer from a predisposing illness such as diabetes.

Septic thrombophlebitis

Septic thrombophlebitis is an infected blood clot in a vein, which may be life-threatening. The effects of septic thrombophlebitis may include:

- Redness, swelling and tenderness of the skin overlying a vein
- Pus draining from the vein
- Septic clots in the blood vessels of the lungs (pulmonary emboli)
- Bloodstream infections (septicaemia)

Treatment is with intravenous antibiotics. These should be broad-spectrum until cultures confirm the causative organism(s). If possible, the affected vein should be tied off and removed surgically.

Miscellaneous Infections Much rarer infectious complications of intravenous drug use that have characteristic skin findings include:

- Botulism due to *Clostridium botulinum* toxin, with progressive cranial nerve paralysis
- Tetanus due to *Clostridium tetani*, resulting in seizures & muscle spasms
- Widespread [candida](#) infection
- Heart valve infection (endocarditis)
- [HIV infection](#) and AIDS
- Liver disease (hepatitis).

Related topics

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- [Streptococcal skin infections](#)
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