

## A Case of Profound Soft Tissue Infection of Lower Limb Contained Maggots after IV Abuse of Iranian <Crack>

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### ABSTRACT

**Background:** Infections include soft tissue infections are notable reason for hospital admission among IDUs, owing to unsterile injection techniques and equipment, contamination of drugs with organisms, and poor hygiene. In present case report a patient with profound limb infection is introduced.

**Case:** A 32 years old man was transferred to the emergency department. He was IDU with Iranian <crack> for 3 years. Gangrenous deformity of left lower extremity below the knee was seen. Live maggots were moving around the limb freely. The patient underwent before knee amputation (BKA) to remove the infected tissues of the limb.

**Conclusion:** In order to evaluate and treat the serious infectious disease problems, drug abuse treatment programs will need to develop appropriate procedures. It is important that physicians, nurses, and other health care providers become better educated about drug abuse. Workers in drug abuse treatment should be well informed about infectious diseases and other complications of drug abuse.

**Keywords:** Crack, IDU, Iran, Soft Tissue Infection.

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### INTRODUCTION

The complications of recreational drug use are many and varied from complications of excessive use or withdrawal effects of such drugs as well as a number of associated medical conditions. The related health service workload is not inconsiderable [1]. Infectious diseases are commonly diagnosed and reported among drug abusers. Some infections result when "dirty" or non-sterile paraphernalia or drugs are used for injection (endocarditis, soft tissue infections); some occur when the equipment is shared and infected blood of others is directly inoculated (hepatitis B virus, human immunodeficiency virus [HIV] [2].

A survey revealed that drug users accounted for 0.16 % attendances to hospital; of which 47 % required admission. Sixty percent of the attendances were related to the effects of drugs (37 % related to an excess of drugs or overdoses and 23 % related to withdrawal from drugs), 21% to infections,

8% to trauma. Hospital and post-mortem surveys have suggested that between 31-58% admissions and 19% deaths of recreational drug users were related to associated infections [1].

IDU-related infections occur because of use of either non-sterile equipments (needles, syringes, spoons, cups etc.), or solutions. Both of these allow direct access of microorganisms to subcutaneous tissues, muscle or blood and result in either local or systemic infections [1].

Ulcerations can develop in drug users, especially due to intravenous administration. The drugs may cause a direct irritant effect on the skin, or repeated trauma and skin edema may impede wound healing, leading to ulcerations; Secondary infection can then develop [3].

Heroin addicts "cook" their drugs in a teaspoon or bottle cap over the flame of a match or cigarette lighter. The wad of cotton used to strain the solution as it is drawn into

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the syringe is unsterile, however; and counteracts any benefit that boiling the solution may have exerted [4]. Since drugs are often administered parenterally into the extremities, it is not surprising that many of the complications are located in the arms or legs [4].

Skin infections, manifesting as cellulites, abscesses, and impetigo, are common among IDUs. An estimated 22% to 65% of addicts experienced abscesses and cellulitis. The pathogenesis of skin infections is multifactorial, owing to unsterile injection techniques and equipment, contamination of drugs with organisms, and poor hygiene. Numerous organisms have been reported as the pathogen of skin infections, but the most common culprits are *S. aureus*, including community-acquired methicillin-resistant *S. aureus*, group A beta-hemolytic *Streptococcus* and other streptococci [3].

On the other hand drug abuse may pose impacts on body defense against microorganisms. The mechanisms by which opiate substances impair host immunity have been the subject of numerous studies to date and continue to be a priority research topic [5].

Infectious and chemical thrombophlebitis, abscesses, and cellulitis are all common venous insults. Diagnosis is based on presenting symptoms, physical examination, and laboratory data. Presentation usually includes fever, local erythema and induration, with pain and tenderness in the involved areas. Potentially life-threatening cutaneous infections seen in this population include fasciitis, myonecrosis, and gangrene. The presence of tissue crepitation, extensive cellulitis, regional lymphadenopathy, systemic toxicity, and severe pain are highly suggestive of deep infection [6].

A drug with street name < crack > has been used by Iranian addicts in recent years. Although its name may direct that it contains cocaine; however studies have shown that it contain heroine and related compounds [7, 8]. It is used mainly by IV injection. There is

false credence among laypersons that use of <crack> could lead to disintegration of limb tissues and change of them into true worms. Regardless of how this belief finds its way into minds, we report a case that is reminiscent of the belief, only in the outcome.

## CASE PRESENTATION

A 32 years old man was transferred to the emergency department of a teaching hospital in Tehran, Iran by law enforcement police. He was found in a constructing building, after report of vendor of the building.

In history he had no complaint except crave for drug. The patient had addiction to opium from 5 years earlier. He had started use of <crack> since 3 years ago. He was injecting it via IV route in various parts of the body. He also noted a history of cigarette smoking 1 pack daily for 10 years. He became dispossessed since 5 years ago, after loss of her job as a salesman and divorce from his wife. No other medical condition or drug history was notable.

On arrival, the patient had Blood Pressure of 120/ 75 mmHg, Pulse Rate of 104 beats / min, Respiratory Rate of 18 per minutes, and oral temperature of 38.9°C. Physical examination was not remarkable except for poor hygiene, profound malnutrition and gangrenous deformity of left lower extremity below the knee, as it is shown in figures 1 and 2. Live maggots were moving around the limb freely.

Laboratory assessment revealed White Blood Cell count of 8200, Hemoglobin of 7.5mg / dl, MCV of 75.3 fl, and Platelet count of 443'000.

Maintenance treatment for relief of withdrawal syndrome and appropriate antibiotic were started. The patient underwent before knee amputation (BKA) to remove the infected tissue of the limb.

After few days tenderness and redness developed in his Shoulders, diagnosed cellulitis. It was treated with antibiotics and immobilization of the arms.

He was discharged from hospital after 17 days and was transferred to a governmental facility care for addicts.



Figure 1. gangrenous deformity of left lower extremity of the patient below the knee.



Figure 2. living maggot were really moving around the lesion.

## DISCUSSION

Many illicit drugs are injected intravenously, including heroin, cocaine, morphine, and amphetamines. The most common sites of injection are the antecubital fossae, followed by the arms and neck. After several years, intravenous drug users (IDUs) may resort to injection in the neck, foot, groin, toes, and fingers, after previous access points have been exhausted [3].

The most common causes for IDUs hospitalization, in decreasing order were infectious endocarditis (28.31%), soft tissue infection (16.98%), pneumonia (15.9%),

septic DVT (15.9%), non-septic DVT (7.55%) and miscellaneous (7.55%) [7]. Soft tissue infections have been reason for hospital admission of addicts in near 17% of studied patients in a teaching hospital in Iran, almost exclusively after heroin abuse [9].

The infectious complications typically seen in addicts include skin ulcers, septic thrombophlebitis, necrotizing fasciitis and myositis. Further complications of skin infections include splenic abscesses, candidiasis, wound botulism, and tetanus [5].

Depression and altered function of the immune system among IDU also appears to be important in contributing to the pathogenesis of a variety of infections. Studies of heroin addicts and individuals maintained on methadone have demonstrated changes in several immune parameters [5]. The spectrum and variety of infectious diseases encountered by IDU is indicative of the types of immune disorders experienced by this group. The high incidence of infections caused by staphylococci, streptococci and Gram-negative bacteria among IDU are not only indicative of infections from injection and interruption of the integument, but also of impairments in phagocytosis and killing by phagocytes. Similar infections are common among patients with congenital defects of phagocytes. Opiates inhibit phagocytosis, chemotaxis, respiratory burst and killing by PMNs and macrophages in humans and in animals [5].

Lifestyle, altered circadian rhythms, chronic physical and psychic stressors are known to activate the hypothalamic pituitary adrenal axis with resultant hypersecretion of cortisol. Excess cortisol has profound suppressive effects on immune function [6].

Nerve injury in IDUs may complicate limb infections. In IDUs nerves may be damaged by direct puncture, adjacent infection or scarring and from hypersensitivity reactions [4].

In presented case it can be deduced that skin infection has been started from injection site after contaminated injections and

progressed. Poor personal hygiene and self care have hindered seeking medical cares. Then an ideal location has been generated for deposition of flies' eggs, like condition seen in exposed dead bodies. The produced maggot was seen in site of infection during the patient's physical examination. The same phenomenon may be a basis for believes of laypersons about tissue disintegration and worm production among <crack> Addicts.

## CONCLUSION

In order to evaluate and treat the serious infectious disease problems, drug abuse treatment programs will need to develop appropriate procedures. Clients entering treatment (and periodically during treatment) will need adequate physical examinations, including genitourinary examinations, serologic and other laboratory screening for these infections, and follow-up appointments. Clinicians admitting clients will need suitable training, oversight, and backup to provide appropriate medical care. If the current drug abuse treatment program can provide only some of the necessary services, program directors will need to forge access to laboratory facilities, hospitals, and the public health sector [2].

With the aim of address some of these health care issues in drug abuse, it is important that physicians, nurses, and other health care providers become better educated about drug abuse and that drug abuse treatment workers become better informed

about infectious diseases and other complications of drug abuse [2].

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