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An Unusual Suicidal Attempt with Injection of Thinner into The Left Arm Presenting with Severe Soft Tissue Infection: A Case Report

CASE REPORT

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ABSTRACT

A thinner is an industrial solvent that is composed of some aromatic hydrocarbons. Acute or chronic intoxication is frequently seen among industrial workers who inhale solvent vapor and in teenager's abuse using thinner. Suicidal injection use of a thinner is very rare. An 18-year-old young boy presented to our department with pain and swelling in his left arm. His complaints had started three days after he attempted suicide with the injection of a paint thinner. High fever, extensive swelling, and local warming in the left arm from the shoulder to the over hand was observed on admission. His leukocyte count was 26820/mm^3 and CRP level was 194mg/L. Because his clinical picture mimicked severe soft tissue infection, antibiotic treatment was initiated. Abscess formation developed at the injection site on day eight, and surgical drainage was performed. Upon clinical and laboratory improvement, the patient was discharged on the 16th day of therapy. This case is presented here and highlights attempted suicide using a paint thinner injection.

Keywords: Paint thinner, suicidal injection, abscess, soft tissue infection

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INTRODUCTION

Paint thinners are industrial solvents and consist of some aromatic hydrocarbons such as toluene, xylene, and N-hexane. These materials are widely used in the production of plastics, varnish, paint, and glue as solvents in industrial areas (1, 2).Records of their misuse have been mentioned, particularly in young people living in metropolitan cities. It is known that toluene, xylene, and N-hexane have neurotoxic, nephrotoxic, myotoxic, and hepatotoxic effects (3). Acute orchronic intoxication is frequently seen among industrial workers who inhale solvent vapor and in teenager's abuse using thinner. Suicidal injection use is very rare but can be seen (4). This paper presents the case of a patient with severe soft tissue infection due to suicidal thinner injection.

CASE REPORT

An 18-year-old male was admitted to the Infectious Diseases Clinic with agitation, somnolence, severe pain, and swelling in his left arm. In his history, he had injected approximately 10 ml of a thinner by himself into his left upper arm three days before for attempting suicide because his girlfriend had refused him. On performing an examination, his appearance was sleepy and agitated. He had a high fever. Extensive swelling and local warming on the left arm from shoulder through the over hand was observed (Figure 1a). No sign of numbness, tingling, or paresthesia was present, and the sign of compartment syndrome was present. There was also no sign of systemic toxicity. The arterial and venous blood stream of the left arm was found to be normal by Doppler ultrasonography. A superficial ultrasonographic examination showed that noticeable thickness and swelling in the left arm skin and subcutaneous tissues were present. There was no sign of an abscess. His leukocyte count was 26820/mm^3 and CRP level was 194 mg/L. Other laboratory findings were within normal limits.

The clinical preliminary diagnosis was chemical inflammation and staphylococci soft tissue infection. Intravenous fluid infusion and antibiotic treatment (ampicillin–sulbactam) were immediately initiated. The patient's pain was relieved with analgesics. An antidepressant drug was administered by a psychiatrist. His fever resolved within two days, and the extensive edema begun gradually regressing with time. On the 4th day of therapy, alanine aminotransferase was increased with a low level (69 U/L). On the 8th day of admission, in physical his examination, the upper arm was rough and stiff. The ultrasonographic examination showed that an increased calibration over the left triceps and hypoechoic areas was detected in muscle plans. Surgical exploration was performed. The skin, subcutaneous tissues and fascial texture were opened. After the abscess was drained and washed with serum physiologic (Figure 1b), a Hemovac drain was applied and the wound was sutured. The drain was removed after two



Figure 1. An 18-year-old male injected approximately 10 mLof a thinner into his left upper arm three days ago. (a) Appearance of extensive erythema and swelling from the left shoulder to the wrist. (b) Intraoperative appearance of intense pus between the subcutaneous tissue and the fascia of muscles in the patient's left upper arm during surgery.

days. A histopathologic examination of the specimens taken from surgical sites revealed extensive necrotic suppuration and severe inflammatory reactions. Blood and abscess cultures were also negative. Upon clinical and laboratory improvement, the patient was discharged on the 16th day of therapy. Two weeks after discharge, there was no sign of infection and the patient had no problem.

DISCUSSION

Aromatic hydrocarbons usually lead toxicity by the way of chronic or acute inhalation. Acute or chronic toxicity due to hydrocarbons is well known in industrial areas as evidenced by occupational diseases among painters and related industrial workers (1, 3).The abuse of paint thinners is very common because of its low cost and easily availability (5).Few cases of thinner ingestion and chemical pneumonitis after the ingestion of a paint thinner have been also reported (6).

Events of unusual thinner injection shave been reported because of psychological reasons as seen in this presented case. The clinical picture varies from mild-to-intense inflammatory reactions tovastly different when aromatic hydrocarbons are parenterally taken into the body. Intense inflammatory reactions may progress to local necrosis and a chemical abscess. With the subcutaneous injection of paint thinners, inflammation, cellulitis, necrotizing fasciitis, compartment syndrome, liquefactive necrosis, and abscess formation (microbial or sterile) following cellulitis have been reported (2, 7, 8).Our presented case was characterized by fever, extensive inflammation, and edema in the left arm that resulted in abscess formation. The patient had a history of a single injection. Although blood and abscess cultures were negative, antimicrobial therapy covering staphylococci was administered because of unsafe injection use by the patient. The injection of a thinner in the antecubital region has been shown to cause electrophysiological axonal loss of the radial, ulnar, and median nerves (4). In our case, the injection site was the lateral side of the left arm and no motor or sensorial loss was observed.

CONCLUSION

Suicidal paint thinner use by way of inhalation, ingestion, or injection seems to be an increasing problem among both young people and adults in developing countries having a mental problem. It might be a potential threat to young adults in the near future. Currently, this case is very unusual, but health professionals should be aware of this kind of event.

Informed Consent: Written informed consent was obtained from patient who participated in this study.

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