



G47 Use of Therapeutic Intravenous Catheters in Drug Addiction: A Series of Three Cases

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After attending this presentation, attendees will become aware of a potentially overlooked deadly method of intravenous drug use. This poster will provide the attendees with a review of the stigmata of clinical and histopathologic findings associated with illicit drug use using therapeutic intravenous catheters.

This presentation will impact the forensic science community by bringing attention to an easily overlooked method of intravenous drug abuse, especially in the hospital setting.

Numerous creative methods and behaviors for abusing prescription and illicit drugs have been detailed in the literature over the years, including the recent tendency to inject or snort crushed prescription medications that are designed for oral ingestion. Numerous articles and news stories have discussed deaths of debilitated people injected by lethal doses of medication or poisons by caretakers, often in hospital settings; however, there has been little discussion of the use of therapeutic intravenous catheter ports in the addicted population. This presentation will discuss two Medical Examiner (ME) cases and one hospital-based autopsy case in which this behavior was reported in the patient's history and/or was shown to contribute to the patient's demise.

Case Description: Case one was an ME case involving a 26-year-old female undergoing chemotherapy for recurrent Hodgkin's Lymphoma who died of acute morphine toxicity. A prescription for morphine sulfate was filled two days prior to her death with only 93 of 120 tablets remaining in the bottle. Investigators at the death scene were suspicious that she had accessed the port of her chemotherapy line for the purpose of injecting her oral medications. At autopsy, microscopic sections showed numerous intravascular and perivascular granulomata with polarizable foreign material, with additional foci of polarizable material found within the splenic and hepatic macrophages. Case two was an ME case involving a 47-year-old female with end stage renal disease secondary to Goodpasture's syndrome who died of acute cocaine toxicity. The investigation revealed she had a history of accessing her port for administering illicit substances. Postmortem toxicology revealed the presence of cocaine and its metabolite in her blood. Case one and two demonstrate the difficulty in managing drug addiction in the chronically ill and palliative care populations.

Case three was a hospital-based autopsy of a 38-year-old male with a history of polysubstance abuse who was admitted for multilevel epidural spinal abscess with cultures positive for *Staphylococcus aureus*. His condition was attributed to intravenous drug abuse. Treatment for his abscess required intravenous antibiotics, so an intravenous portacath was placed. During treatment in the hospital, he was encouraged to ambulate and often left the hospital floor on his own. Some of these excursions were followed by episodes of respiratory desaturation and decompensation leading to extensive workups to rule out a pulmonary thromboembolus. For this reason, clinicians obtained consent for a hospital-based autopsy. At autopsy, microscopic sections of the lungs revealed much polarizable crystalline material both in the lumens and within the walls of vessels accompanied by granulomatous inflammation with multinucleated giant cells. Some of the vessel walls were thickened due to myofibroblastic proliferation around the foreign material; changes consistent with his two-week stay in the hospital.

Summary: These three cases represent a method of intravenous drug abuse in an addicted population leading to death that is most likely underreported due to lack of recognition, especially when the death occurs in a hospital setting. Chronically ill and palliative care patients, particularly those with terminal illnesses, may not trigger an extensive investigation including autopsy since death may be easily ascribed to the natural disease process. Clinicians working with patients who have addiction problems should consider the increased potential of drug-related fatalities if these patients have in-dwelling intravenous catheters. A closer review of these types of cases is needed to properly assess the true incidence of this behavior.

Pulmonary Granuloma, Intravenous Catheter, Intravenous Drug Use