Case Report From the Field

Cervical Injection Drug Use: A Pain in the Neck

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Case Presentation

A 53-year-old man with HIV infection (CD4+ T-cell count of 99/μL), hepatitis C virus infection, and a history of injection drug use (IDU) presented to the emergency department with progressive neck swelling and pain after self-administered, unsterile, deep-cervical injections of heroin. He was afebrile and normotensive. Physical examination revealed an area of induration, erythema, and tenderness over the anterior aspect of the left neck. Computed tomography of the neck with intravenous (IV) contrast demonstrated a large, ring-enhancing fluid collection in the left neck and numerous thin, hyperdense, linear objects in the soft tissue of the neck bilaterally (Figure 1). These objects were consistent with needle fragments, which were best observed on 3-dimensional reconstruction (Figure 2).

Incision and drainage of the collection confirmed the presence of an abscess; cultures of the fluid grew methicillin-resistant *Staphylococcus aureus*. Removal of the needle fragments was not attempted because of their number and proximity to vascular structures. The patient had clinical resolution of the infection after a 2-week course of IV vancomycin administered at a partial hospitalization program that also provided multidisciplinary treatment for drug dependence.

Discussion

Long-term injection drug users frequently resort to using the neck for vascular access, referred to in street vernacular as a “pocket shot” because the location of injection is in the “pocket” between the sternal and clavicular heads of the sternocleidomastoid muscle.\(^1\)\(^3\) Such injections are technically more difficult and awkward than extremity injections and as a result may be associated with a higher likelihood of needle breakage than those made at other sites.\(^1\)\(^3\)

Retained needle fragments in this scenario remain an underreported complication that, despite having important implications on several levels, have received relatively little attention in the medical literature.\(^1\)\(^2\) For patients, sequelae can include cellulitis, abscess, mycotic aneurysm, septic thrombosis, central embolization, endocarditis, osteomyelitis, viral hepatitis infection, and HIV infection. Indeed, the prevalence of HIV infection in patients with retained needle needles is 77%, nearly triple that observed in injection drug users who do not administer injections in the cervical region.\(^3\) The relationship between the presence of retained needles and some of the aforementioned infections has not been well studied. In some instances, symptoms that develop in patients with cervical needle fragments may trigger the need for contact with health care systems and additional diagnostic evaluation. Therefore, the presence of needle fragments may be incidental and not causative of increased infection (eg, HIV) rates.

For examining clinicians, retained needle fragments in a patient pose the risk of exposure to bodily fluids and thus infection transmission when palpating the patient and even more so when performing procedures such as incision and drainage of abscesses.\(^1\)\(^3\) For pathologists, particularly urban-based forensic and hospital pathologists who perform numerous autopsies daily, the health risks are substantial given that cuts or needlestick injuries have been reported in one study to occur in 1 of 53 autopsies performed by experienced pathologists and 1 of 11 autopsies performed by resident physicians.\(^4\) Because many patients with re-

Figure 1. Sagittal computed tomogram with intravenous contrast demonstrating a 1.9 × 2.7 × 5.6 cm, ring-enhancing, left-neck fluid collection (white arrow) involving the sternocleidomastoid muscle and several hyperdense linear lesions (black arrows) in the soft tissue of the neck.
Figure 2. A 3-dimensional reconstruction of computed tomography images demonstrating numerous hyperdense cervical lesions consistent with needle fragments.

Tainted needle fragments may be asymptomatic, the risks they pose may not be initially apparent. Thus, this possibility should be considered for all patients with a history or signs of extensive IDU. Radiographic screening has been suggested in this cohort before initiating digital exploration, incision and drainage, or autopsy procedures.\textsuperscript{1,4} Similarly, screening for infected needle fragments should be considered when encountering unexplained bacteremia, fever, or focal tenderness among such patients.

In patients with associated deep infection or abscess, drainage and use of antibiotics are warranted; however, there is no consensus regarding the optimal management of retained needle fragments given the risk associated with removal of all but the most superficial needle fragments.\textsuperscript{2,3} Needle-fragment removal in asymptomatic individuals may prevent future complications, but this procedure is difficult, especially if performed in the emergency department setting.\textsuperscript{1,3}

Therefore, considering the risk of damage to adjacent structures and that approximately only 10\% of neck needle fragments result in delayed complications, observation rather than surgical removal has been recommended for asymptomatic patients.\textsuperscript{5}

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References


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