

## Severe Tracheal Dislocation Secondary to Neck Abscess, Successfully Treated by Urgent Percutaneous Drainage

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### Abstract

Abscesses and cellulitis represent the leading causes for emergency department visits and hospital admissions for intravenous drug addicts' patients. Since these patients frequently use the neck for vascular access, neck abscesses are also commonly developed causing serious airway problems.

A 28-year old Intravenous Drug Addict (IVDA) Caucasian male patient, presented to the casualty Department due to progressive neck swelling and pain after self-administered, unsterile, deep-cervical intravenous injection of heroin. Emergency contrast computed tomography scan revealed a large abscess causing significant dislocation of the trachea. The patient was urgently treated by percutaneous neck abscess drainage, via an 8Fr catheter, under ultrasound guidance

Emergency computed tomography scan of the affected area and ultrasound scan of the major vascular supply are helpful in designing the therapeutic approach in terms of percutaneous drainage or surgery in cases of neck abscess that may cause airway obstruction in intravenous drug addicts. Percutaneous drainage under ultrasound guidance represents an effective treatment option relieving the life threatening trachea dislocation and eliminating the need for surgical intervention.

**Keywords:** Neck Abscess; Tracheal dislocation; Intravenous drug addict

### Introduction

Abscesses and cellulitis represent the leading causes for emergency department visits and hospital admissions for Intravenous Drug Addicts' (IVDA) patients. Since these patients frequently use the neck for vascular access, neck abscesses are also commonly developed causing serious airway problems.

### Case Report

A 28-year old IVDA Caucasian male patient with a past medical history positive for hepatitis B and hepatitis C virus infection, presented to the casualty Department due to progressive neck swelling and pain after self-administered, unsterile, deep-cervical intravenous injection of heroin.

He was febrile (T=39.1°C), with progressive difficulty in breathing. Oxygen saturation (SPO<sub>2</sub>) was 91 on air, Respiratory frequency 19/min, no arterial blood gas analysis was taken and the patient presented a characteristic respiratory wheezing. Physical examination revealed an area of induration, tenderness and erythema over the anterior aspect of the right neck. Blood analysis revealed leukocytosis (WBC= 28×10<sup>9</sup>/L) and elevated C-reactive protein (CRP=165 mg/l). Neck Ultrasound Scan (US) disclosed a large abscess anteriorly to the right lobe of the thyroid gland, without any evidence of pseudo-aneurysm or any other vascular damage (Figure 1a and 1b). A contrast enhanced Computed Tomography (CT)-scan revealed a 7.2 cm abscess over the anterior aspect of the neck, right to the midline, slightly infiltrating of the right sternocleidomastoid muscle, causing significant tracheal dislocation (Figure 2). No foreign bodies were found.

The patient was urgently treated by percutaneous neck abscess drainage, via an 8Fr catheter, under ultrasound guidance. (Figure 3a) Approximately 140 mL of purulent fluid was drained and the patient was started on broad spectrum antibiotics (3<sup>rd</sup> generation Cephalosporin and Metronidazole), intravenously. After the procedure the patient was transferred to the ward for possible surgical exploration if needed.

Cultivation revealed *Streptococcus sp.* susceptible to Vancomycin, and the administration of antibiotics was changed accordingly. On second postoperative day the patient was able to drink and eat and his clinical condition was progressively improved. The drain tube was withdrawn on the 5<sup>th</sup> day, there were no systemic signs of sepsis and the patient was discharged 24 hours later without any need for further surgical intervention and one month since the procedure he remains in an excellent general condition (Figure 3b).

### Discussion

Abscesses and cellulitis constitute the leading cause for emergency department visits and hospital admissions for IVDA patients [1,2].

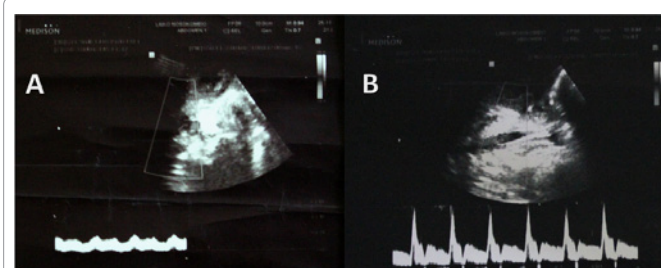


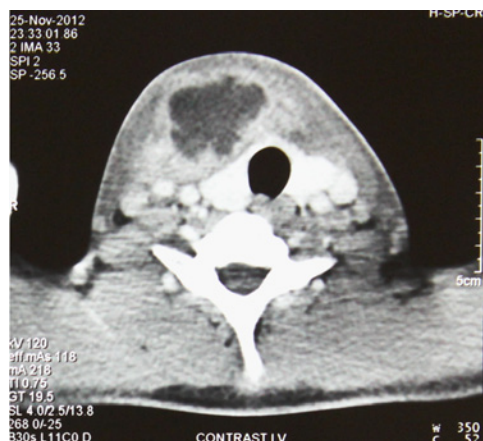
Figure 1: US of jugular vein and carotid artery revealing normal blood flow.

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**Figure 2:** Contrast CT scan revealing a large abscess over the anterior aspect of the neck causing significant translocation of the trachea.



**Figure 3:** a) Tenderness, erythema and swelling of the neck and the 8Fr drain tube in place. b) Remission of symptoms during follow-up of the patient with remaining lesions of the drain and the site of injection.

Soft tissue and cutaneous complications in IVDA patients are well documented [1-4] and they are mainly related to foreign body presence, such as a broken needle or inadequate sterilization of the needles.

A common characteristic of these patients is that they frequently use the neck for vascular access, and therefore neck abscesses are also commonly developed [2]. The point of neck injection is referred as the “pocket shot” because it lies between the sternal and the clavicular heads of the sternocleidomastoid muscle. Patients usually present with neck swelling, tenderness, fever and difficulty in breathing, while clinical examination may reveal a palpable mass in the neck and the presence of a broken needle at the injection point [5].

Laboratory examination may reveal leukocytosis, elevated CRP and drop of the hematocrit in cases of co-existing large neck hematoma. Serological examinations should be routinely performed, due to high prevalence of hepatitis and HIV infection in this group of patients [2].

Other studies have indicated that skin and mouth flora, including *Staphylococcus aureus*, facultative gram-negative bacteria, and mixed anaerobic bacteria, are the most common microbiologic pathogens [6].

Simple X-ray films are routinely required to exclude the presence of a foreign body such as a broken needle [7]. Ultrasonography plays a major role diagnostically and therapeutically, usually disclosing a fluid collection of variable echogenicity. Contrast CT-scan discloses the extend of the abscess and the damage to the adjacent anatomical structures, while the presence of gas within the mass establishes the diagnosis of abscess formation [3]. It is also helpful designing the therapeutic approach in terms of percutaneous drainage or surgery.

## Conclusion

Although the development of neck abscess among IVDA patients is well documented in the literature, its co-existence with a life threatening tracheal dislocation (as the presented patient) is extremely rare. Since maintenance of an open airway is the primary concern in similar cases, urgent percutaneous drainage under ultrasound guidance should represent the first therapeutic option. The presented case suggests that the method is effective relieving the life threatening trachea dislocation and eliminating the need for surgical intervention. Surgical exploration should be reserved for patient with no improvement on their symptoms after few hours.

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