# *Central Venous Catheter malposition: Case report and short review of the literature*

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## ABSTRACT

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Central venous catheters (CVC) are an extremely usefull tool in clinical medicine. Yet, its placement and use is not without complication. In the present paper, a case report of Central venous catheter malposition is presented.

## INTRODUCTION

Insertion of a (central venous catheter) CVC using the Seldinger technique has revolutionized medicine[1]. However, numerous complications are associated with central venous catheter placement: from failure to place the catheter to arrhythmia and cardiac arrest[2]. We present a case report of CVC malposition in a critically ill patient.

## CASE REPORT

A 35 year old male with history of drug abuse, Chronic Hepatitis C infection, Chronic *Mycobacterium tuberculosis* infection and Epilepsy was admitted intubated in the Intensive Care Unit for acute respiratory failure following a respiratory infection. A CVC is inserted in right subclavian vein on his admission. In his 9$^{th}$ day of hospitalisation, a programmed change of CVC was performed. Posterior approach to left jugular vein without imaging guidance was used for venous access without problems. Before removing the old CVC an coaxial X-Ray (CXR) exam was conducted, which reveal malposition of the new CVC into left axillary vein (Figure 1a and 1b). Eventhough the new CVC was functioning, a new change was performed a day after without problems.

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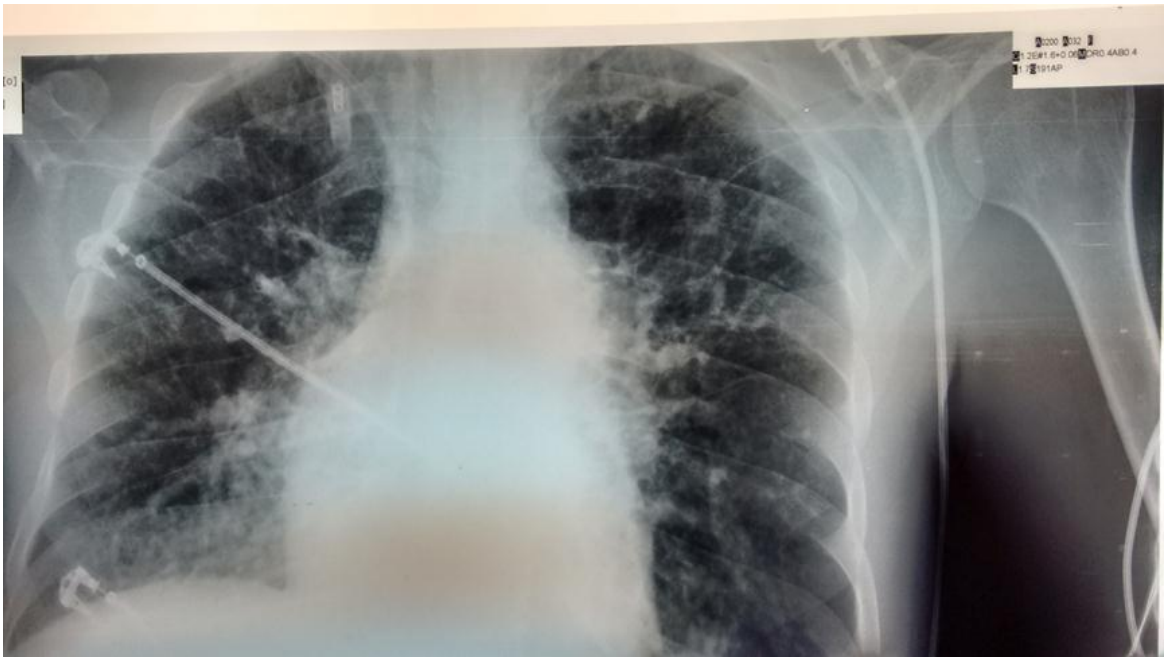
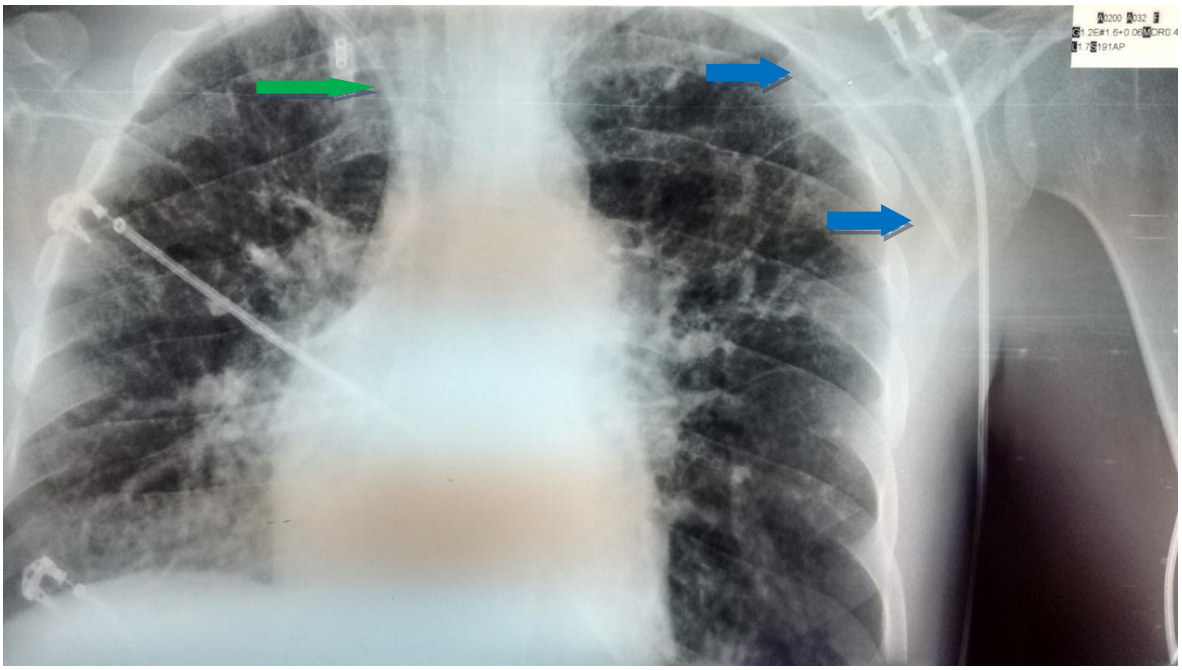
**Figure 1 (a, b).** CXR demonstrating the position of the new and the old CVC (arrows figure b).

a



b



*Green: old CVC, blue: new malpositioned CVC.*

## DISCUSSION

Rate utilisation of CVCs in ICU patients range from 13 to 91%[3]. Reported frequency of misplacement during insertion without image guidance ranges from 3.3% to 6.2%4. Methodological innaccuracy, anatomical variation and inter-operator avriability. Insertion via left jugular vein is reported to have the highest frequency (12%), followed by right subclavian (9.3%), left subclavian (7.3%) and right internal jugular (4.3%)[5]. Frequency of accidental azygos vein cannulation during venous access through internal jugular vein is 0.7-1.2%[6], yet in general data about the miplsplacement site frequency are scarce. With very few exceptions, the recommendation cases of intravascular CVC misplacement is to remove and relocate the catheter. Leaving the catheter in situ is related to high frequency of complications such as vesel perforation or thrombosis[7]. Proper selection of the vessel, insertion technique (preferably with ultrasound guidance) and control postprocedural imaging is essential for minizing the possibilty of misplacement.

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**Key words:** central venous catheter, malposition

**Author Disclosures:**

Authors Karakosta P, Aslanidis Th have no conflicts of interest or financial ties to disclose.

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