

Case Report

Entrapment of guidewire during central venous catheterization

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Received: 19 May 2016

Accepted: 10 June 2016

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ABSTRACT

Central venous catheterization (CVC) is common in the setting of ICU for various reasons like monitoring of CVP, fluid administration and vasopressor or drug infusions. Guidewires are routinely used in the Seldinger technique during central venous catheter placement CVC placement is not innocuous as numerous complications may occur, with varying frequency and severity.

Keywords: Guidewire, Internal jugular vein, Ultrasound

INTRODUCTION

Central venous catheterization (CVC) is common in the setting of ICU for various reasons like monitoring of CVP, fluid administration and vasopressor or drug infusions. Guidewires are routinely used in the Seldinger technique during central venous catheter placement CVC placement is not innocuous as numerous complications may occur, with varying frequency and severity.¹

Arrhythmias, arterial puncture, pneumothorax, etc., are quite a common scenario and are obvious. Complications involving guidewire insertion like looping, knotting, vascular perforation, fragmentation and embolization are not readily appreciated.² They describe a case of entrapment of guide wire probably in the sternocleidomastoid muscle. The incidence of such complication is not well described and lacks literature in the Indian setting.

CASE REPORT

A 45 year old gentleman presented in emergency with history of fever and altered sensorium and hypotension. He was a known case of chronic liver disease since one years and was on regular medications and follow up. On arterial blood gas analysis: his partial pressure of oxygen was 88 millimeters of mercury, pH-7.345, partial pressure

of carbon di oxide-28 millimeters of mercury, room air oxygen saturation was 93% and bicarbonate was 18.

His chest X ray was normal and ultrasonography abdomen was done which revealed coarse echotexture of liver with minimal ascites. Other physical examination findings were within normal limit.

In view of his hemodynamic instability and metabolic acidosis he was shifted to intensive care unit and central venous catheterization was planned. After ensuring appropriate coagulation parameters right internal jugular vein was selected for cannulation.

A seven French percutaneous triple lumen Seldinger type 16 centimeter length catheter was used. Under all aseptic precautions right internal jugular vein was cannulated with 18-gauge needle followed by introducer needle which punctured the vein on first attempt. After aspiration of blood, guidewire was introduced. The catheter was the introduced over the guidewire after appropriate dilatation.

However attempts to remove the guide wire failed with gentle traction. The catheter was then removed and ultrasonography was done which revealed J loop stuck beyond the vein in the soft tissues (Figure 1). Knotting was not evident.

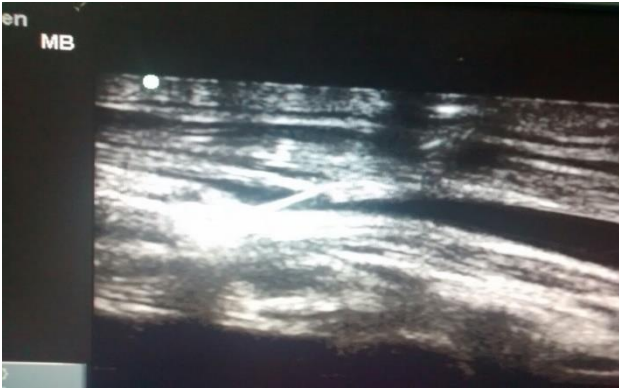


Figure 1: Ultrasound showing guidewire passing through vein and stick in the muscle.

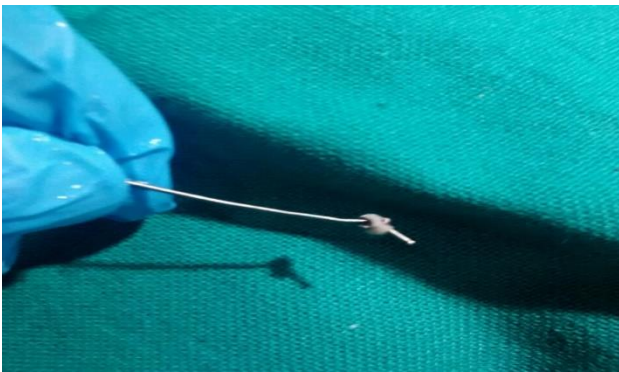


Figure 2: Guidewire after it was successfully removed.

A repeat attempt was made and the guidewire came out with gentle traction. To the surprise there was a small knot noted at the J tip (Figure 2). Local pressure was applied for ten minutes. A chest X-ray was done to confirm any fragmentation of the guidewire and USG was done to exclude haematoma.

DISCUSSION

Complications of CVC insertion can be avoided or managed adequately provided the placing specialist is aware and is on the lookout for the complications. Insertion of a catheter by a physician, who has performed 50 or more catheterizations, is half as likely to result in mechanical complications.³ A direct relation is there between the number of attempts of insertions and mechanical complications.⁴

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Tarun S, Nimaiyar H. Entrapment of guidewire during central venous catheterization. *Int J Res Med Sci* 2016;4:3080-1.