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Case Report

Central Venous Pressure Catheter (CVP) Guide Wire Loss an Uncommon Complication of Very Common Procedure and its Percutaneous Removal- A Case Report

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ABSTRACT

A 50 years old male with a history of alcoholism was admitted to the Department of Surgery. He was diagnosed with acute abdomen secondary to ileal perforation. A laparotomy was carried out, and a Central venous pressure catheter (CVP) was inserted through the right femoral approach post-operatively. The procedure was complicated by CVP guide wire loss in the femoral vein, which was embolized in all the possible ways from the Inferior Vena cava to the left subclavian vein. The patient was subtly shifted to the cardiac catheterization lab to manage this unusual common procedure complication effectively. The 8 French sheaths through the right femoral vein were passed, and the snare of the guide wire from the same right femoral vein was done with the help of a JR catheter and endovascular snare. The patient was shifted back to the surgical ward in stable condition.

Keywords: Central venous pressure catheter, Ileal perforation, Laparotomy, Subclavian vein.

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INTRODUCTION

Central venous pressure catheter (CVP) is commonly performed in patients who require special care and in conditions like parenteral nutrition and administration of inotropic and many other conditions. Central venous pressure measured through the catheter remains the most widely used variable to guide fluid administration.[1] A Central venous pressure catheter is usually performed through a large vein like the internal jugular, subclavian, and femoral. As common with every invasive procedure, there is some complication associated with this procedure. Some of the common complications associated with CVP catheter insertion include infection, inadvertent arterial punc-ture of nearby arteries, improper catheter position, pneumothorax, hematoma, hemothorax, cardiac arrest (a systolic) of unknown aetiology, and inferior vena cava (IVC) trauma. Infection is the most common complication in the subclavian vein route, though arrhythmias and air embolism can also occur.[1] Intravascular loss of a guide wire is an extremely rare complication usually recognized immediately or some-times can be recognized with delay.[2-4] Guidewire loss has been reported to be associated with deep vein thrombosis.[5] Treatment choice for lost guide wire retrieval includes percutaneous or surgical removal.

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CASE REPORT

A fifty years old male presenting with a diagnosis of ileal perforation through the emergency department has a history of chronic alcoholism. Therefore, a surgical laparotomy and loop ileostomy was performed. Post-operatively, CVP was inserted through the right femoral vein to start parenteral fluids. However, the procedure of CVP catheter insertion was complicated by guide wire loss in the femoral vein, which further embolizes to the Inferior vena cava through the right atrium to the upper part of the thorax, which was confirmed by x-ray chest and fluoroscopy before removal (Figure-1).

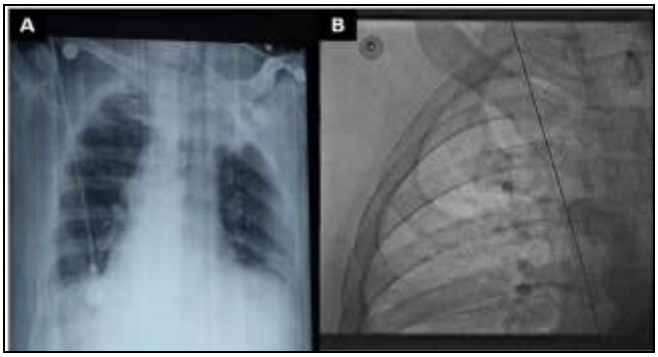

Figure-1: Central Venous catheter (CVP) Guidewire location on Chest X-Ray (A) and Fluoroscopy (B)

The patient was shifted to the cardiac catheterization lab for percutaneous removal, where 8 French

sheaths were inserted into the right femoral vein, and JR-4, 6 french diagnostic catheter and the endovascular snare were inserted through the sheath to the inferior vena cava. The guide wire was pulled through the same right femoral venous sheath (Figure-2). The patient was shifted back to the surgical department in stable condition.

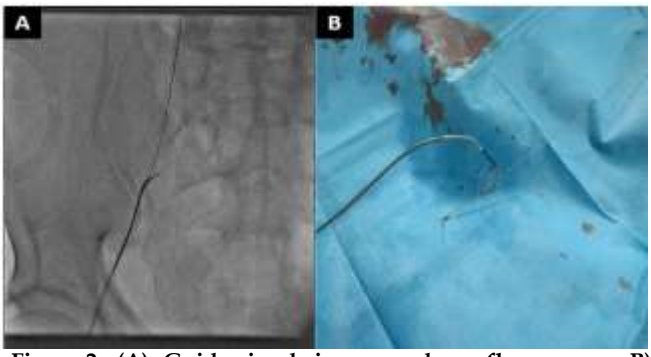

Figure-2: (A) Guidewire being snared on fluoroscopy, B) Whole Assembly including JR Catheter Endovascular Snare and Guide Wire

DISCUSSION

Central venous pressure catheter insertion is a common procedure performed in various departments for various indications. Its insertion requires advanced skills, close and expert supervision and attention to every procedure detail. Its complication occurs in 12% of cases and ranges from infection to pneumothorax and sudden cardiac arrest, depending on the insertion site.[4-6] CVP guide wire loss is an uncommon complication.[2-4] It is usually recognized early, but its delayed recognition may lead to deep vein thrombosis.[5] The exact incidence of this complication is unknown. It can be removed surgically or through a percutaneous route.[4,5] The guide wire loss can result in embolism, which can become fatal in 20% of cases.[7] Hence, it should be removed as soon as possible to prevent severe complications.[8] Each step during catheterization should be carried out with great caution. An operator must understand the procedure and be attentive during insertion. The wire should be inspected before insertion and removal after the procedure as it is very fragile and delicate. There should be no resistance during insertion.[9]

Central venous pressure catheter guide wire loss is an uncommon complication of a common procedure that, if unrecognized, may lead to devastating consequences. Here we report a CVP guide wire loss case that was successfully removed through a percutaneous route. A close and expert supervision of the procedure and detailed concentration of every step of the procedure can prevent this uncommon complication.

Conflict of Interest: None.

Author's Contribution

Following authors have made substantial contributions to the manuscript as under:

SA & NM: Drafting the manuscript, critical review, approval of the final version to be published.

MRH: Conception, data acquisition, drafting the manuscript, approval of the final version to be published.

GA & ZM: Critical review, drafting the manuscript, approval of the final version to be published.

KA: Drafting the manuscript, critical review, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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