An uncommon complication of central venous catheter placement

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ABSTRACT

Introduction: The most commonly used inferior vena cava filters in the United States are the Greenfield filters. Case Report: We report a case of a 60-year-old man with enshranement of a Greenfield filter by a J-tip guide wire used to insert a central venous catheter from the femoral approach. Conclusion: We conclude that enshranement of the filter by the guide wire is a preventable complication.

Keywords: Greenfield filter, Enshraement, Central venous

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INTRODUCTION

Greenfield filters are commonly used for the treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE) in patients with contraindications to anticoagulation. We report a case of enshranement of a Greenfield filter by a J-tip guide wire used to insert a central venous catheter from the femoral approach.

CASE REPORT

A 60-year-old man with a history of diabetes mellitus, hypertension, morbid obesity and ventilator-associated pneumonia was admitted to a surgical intensive care unit for a subarachnoid hemorrhage after an assault. During placement of a right femoral catheter, the J-tip guide wire was advanced for approximately 55 cm. Subsequently, the J-tip guide wire could not be removed even with excessive force. When the patient presented to the physical examination was unremarkable except for a foreign body (guide wire) protruding from the patient’s right groin area. A radiograph showed the Greenfield filter in the proper position with the J-tip guide wire ensnared in the Greenfield filter (Figure 1). The J-tip guide wire was removed using fluoroscopic visualization with a filter sheath without any complications (Figure 2). An inferior vena cavogram showed no extravasation. The patient was discharged home two weeks later without any complications.

DISCUSSION

The most commonly used filter in the United States is the Greenfield filter. These filters work by allowing venous flow through the filter while capturing the emboli. Enshranement of the filter by the guide wire is a preventable complication that can happen from the jugular, subclavian and femoral approaches [1, 2].

Enshranement of the inferior vena cava (IVC) filter is noted clinically as the wire becoming “stuck” during
Treatment of this complication demands emergent consultation with interventional radiology. Techniques used to free the guide wire include using fluoroscopic visualization and placement of a vascular sheath and snares to work the guide wire free.

CONCLUSION

We present a case of ensnarement of Greenfield filter by J-tip guide wire which is a preventable complication of central venous catheter placement. It can be avoided by taking a detailed patient history and/or abdominal radiographs when placing central venous catheters.

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**Author Contributions**

L Ray Matthews – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Traveylan Walker – Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Kenneth L Wilson – Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Omar K Danner – Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

**Guarantor**

The corresponding author is the guarantor of submission.

**Conflict of Interest**

Authors declare no conflict of interest.

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**REFERENCES**

