

Percutaneous Retrieval of a Dislodged Guide Wire by Dormia Basket in a 98-year-old Patient, Still a Safe and Feasible Approach

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Since the first report of percutaneous retrieval of intravascular foreign body in 1964, it has been accepted as a favorite approach for intravascular foreign body removal. Various instruments such as snares, biopsy forceps, dormia basket or tip deflecting wires are available for this approach. Herein, we report percutaneous retrieval of a dislodged guide-wire by dormia basket. The Patient was a 98-year-old female who was admitted in the Intensive care unit due to confusional state. The physician incharge left the guide-wire in her subclavian vein during central venous catheter insertion. He realized his fault immediately, so he started anti-coagulation therapy and requested surgical consult. Because of the patient's high risk of surgery, the surgeon referred the patient to cardiologist for non-invasive guide wire removal. The guide wire was approached through femoral vein by a dormia basket (4/6 F) and it was removed without any difficulties or complications. Utilization of baskets for intravascular foreign body removal is frequently reported and has been successful with low complication rates; In addition, the low cost of the device makes it less of a burden to the patient and the hospital.

Key words: Dormia Basket, Intravascular Foreign Body, Percutaneous Retrieval

Introduction:

Non-invasive retrieval of intravascular foreign bodies has become a favorite approach for intravascular objects removal since the first report by Thomas et al in 1964.¹ Further efforts with various techniques reported high success rates and low complications. Herein, we report retrieval of a dislodged guide-wire which by dormia basket in a 98-year-old female.

Case Report

The patient was a 98-year-old female who was admitted in Intensive care unit (ICU) due to confusion. The on call internist decided to insert a central venous catheter (CVC) through subclavian approach by seldinger's technique for hemodynamic monitoring. After the procedure he noticed that the guide wire was left in the subclavian vein. Heparin, 5000 units per 6 hours started immediately,

chest X-ray was taken and surgical consult was requested. The surgeon referred the patient to the interventional cardiologist for non-invasive guide wire removal because of the patient's medical history, age and high risk of surgery. The patient had no arrhythmia or hemodynamic instability during the consult and decision making process and was transferred to cath-lab one day after guide wire dislodgement. A small incision was made at the right groin, arterial sheath (6 F) inserted in the femoral vein. Under direct fluoroscopy the dormia basket (4/6 F) inserted into the femoral vein and guided wire was grasped and its tip was descended to common iliac vein. (Fig. 1,2) Finally the basket and grasped guide wire were removed uneventfully. There were no complications during or after the guide wire removal procedure.

Discussion

Percutaneous retrieval of intravascular foreign bodies was first introduced in 1964 by Thomas et al, presenting non-surgical retrieval of a broken segment of steel spring guide from right atrium and inferior vena cava.¹ Today it is a frequently applied

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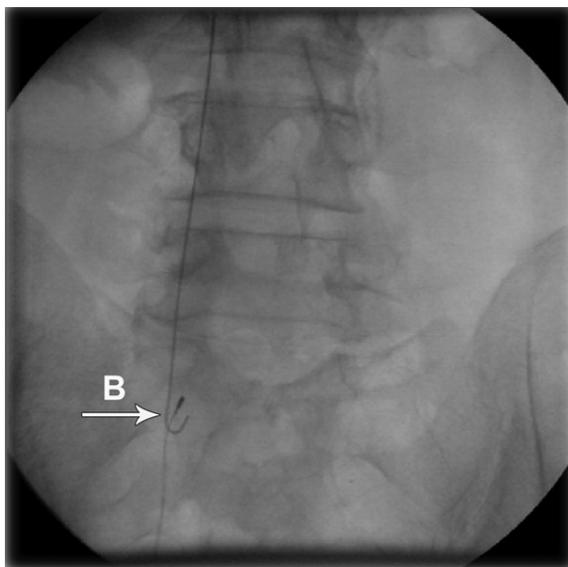


Figure1: Position of the guide-wire at the time of removal. A= guide wire tip

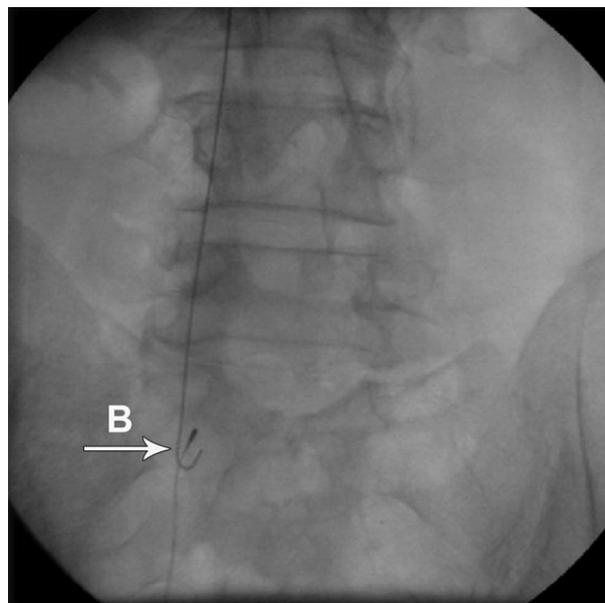


Figure2: Dormia basket grasping the guide wire's tip. B= basket grasped the guide wire's tip

technique since the gamut of intravascular foreign bodies (including coils, stents, vena cava filters, etc) has increased simultaneously with the rapid development of minimally invasive interventional procedures.² Nowadays,³ many devices such as snares, biopsy forceps, dormia basket or tip deflecting wires have been utilized as retrieval tools for various types of intravascular objects.³⁻⁶ Retrieval of foreign objects with the use of baskets or forceps was no longer the method of choice after introduction of the nitinol gooseneck micro snare.^{7,8} Several indications are available for intravascular foreign body removal since the complications vary depending on the type of foreign object. Infection is the most concerning complication of intravascular catheter fragments as bacterial contamination has been found in up to 52% of catheters in position for more than 48 hours.⁹ Thrombogenicity and distal ischemia represent the major concerns with embolized coils. Guide wires and vena cava filters can damage or embolize the vessel's wall, requiring their immediate removal.¹⁰ Patients with cardiopulmonary localization of foreign objects are

at risk of severe complications varying from cardiac arrhythmia to perforation of cardiac chambers.¹¹ The success rate of dislodged guide wires complete retrieval is about 90%,² and 71 to 100% for other intravascular foreign bodies.¹² The reasons for failure to retrieve include absence of free end, small fragments lodged deeply in the peripheral arterial branches and foreign objects anchored and entrapped deep into the vascular wall, lodged in a thrombosed vessel or escaped outside the vessel.¹³ Baskets offer a great chance of rotational capabilities and a wider diameter to grasp the foreign object with no increase in vascular wall injury. Its low profile (2/4 F) also makes it extremely easy to guide into desired position.² In addition, the low cost of the device makes it less of a burden to the patient.

Acknowledgments

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