**Nasogastric Tube in the Inferior Vena Cava: A Case Report**

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# Abstract

We report a case of an 4fr. Nasogastric tube removed from IVC following an emergency right hemicolectomy and presumed repair of ureteric injury with an NGT scaffold which later found to be in the IVC and no apparent ureteric injury. Patient was explored and nasogastric tube was retrieved surgically. Patient had uneventful postoperative course.

**Key Words**: Foreign Body, Nasogastric Tube, Inferior Vena Cava

# Introduction

Foreign bodies and their fragments have been reported to migrate or embolize to distant sites after entry into the body (1). Intravascular foreign body emboli are a very rare sequela of penetrating injuries, although it was first reported in 1834 (2).

# Case Report

A 38 years old lady referred to our hospital 2 months after she underwent exploratory laparatomy and right hemicolectomy with ileo-transverse anastomosis for generalized peritonitis with cecal perforation. With intra operative diagnosis of right ureteric injury, repair was attempted using 4Fr. NGT as a scaffold, with a plan to remove tube with a cystoscope later. Patient had a smooth post-operative course and was appointed for cystoscope removal of NGT, but tube couldn’t be found. Patient was further investigated with IVU and showed normal study. Contrast enhanced CT (FIG.1) showed a radio-dense tubular FB in the IVC. Echocardiography showed normal study except for echogenic material in the right atrium. She had a normal white cell count, liver and renal function tests.


Fig. 1 CT scan showing radio dense tubular foreign body in the IVC.

With this patient was taken to OR, explored through an upper midline incision. Adhsinolysis done, followed by extended kocherization to expose the IVC. FB palpated inside inferior vena cava, held with a side vascular clamp, small Venotomy done, FB, a 4Fr NGT, held and removed slowly. There was no associated thrombus. Venotomy site repaired with prolene. Patient had uneventful postoperative course and discharged on 5th post-op day.

# Discussion

Foreign body entering major vessels may embolize or migrate. It is reported that 79% of peripheral foreign bodies entering major vessels may embolize. The proposed hypothesis is that the foreign body penetrates one wall of the vein without penetrating the other and remains intraluminal. This foreign body then migrates, either by blood flow or gravity, to a distant point [1]. Retrograde venous foreign body embolism, defined as the passage of a foreign body against the blood flow in the vascular system, represents an exceptional event [2]. Two cases in which a foreign body embolized from the right heart into the IVC and subsequently lodged in the renal vein and the hepatic vein. Migration of a foreign body from the periphery to the right side of the heart has been documented in various literatures. There are reports of asymptomatic foreign body migrations to the heart from the vascular system after trauma which were diagnosed years later during a routine chest roentgenogram [3]. Up to 70% of these patients could be asymptomatic.

It is important to determine the exact location of the foreign bodies to choose an appropriate surgical strategy. At the present time, echocardiography and CT scan are mandatory to reach a correct diagnosis and an exact localization of the foreign body. Chest X-rays in different projections may be helpful. In our case, the CT scan showed a foreign body in the Inferior vena cava, with its tip coiled in the right atrium. And we think the FB entered the IVC through the right gonadal vein upon the index surgery, inadvertently. Removal is advisable if the foreign body causes an obstruction of a major venous effluent or is wandering, posing either a risk of embolization to the pulmonary vasculature, bacterial endocarditis, ‘myocardial irritation’ or erosion [2]. The literature reports the morbidity of retained projectiles (delayed migration, partial organ infarction, septicemia and thromboembolism) to be ∼25%, although removal with the aid of modern techniques is safe and has few complications (1–2%) [4].

Non-operative management is advocated if the foreign body is smooth and not contaminated, but the foreign body should be closely observed. In contrast, if a sharp foreign body has entered the vascular system, it frequently causes complications [2]. The physical nature of a foreign body and the potential of a foreign body lodged in the venous system to embolize are the basis for its removal. The first choice of treatment for a wandering foreign body, if possible, should always be interventional radiology. In our case, surgical intervention was preferred over an interventional procedure because we don’t have the expertise as well as instruments.

Different surgical approaches may be employed to retrieve the foreign body depending upon its location. Selective management in reference to removal of an intravascular foreign body should be adopted.

# Conclusion

A foreign body inside the vascular system is a very rare clinical occurence. Careful planning, an appropriate strategy, optimal use of newer diagnostic techniques and above all meticulous surgery are necessary to handle such difficult situations without causing further damage to the patient.

# Declaration

## Acknowledgement

Not Applicable

## Authors’ Contribution

Solomon involved in pre-operative preparation, operation, post op follow-up and wrote this article. Nebyou supervised the surgery and checked the article. Dawit assisted the surgery and followed the patient post operatively.

## Conflict of Interest

The authors declared that there are no conflicts of interest to disclose.

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## Consent for Publication

Written consent was obtained from the individual patient.

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