

Percutaneous retrieval of an intracardiac catheter fragment using a snare-loop catheter

İntrakardiyak kateter parçasının "snare-loop" kateter kullanılarak perkütan yolla çıkarılması

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Intravascular and intracardiac embolization of catheter fragments is a severe and rare complication of indwelling intravenous catheters. Mortality from arrhythmia-related cardiac arrest, septic and thromboembolic complications, and risk of perforation of the heart argue for an immediate extraction of the broken catheter.

A long (16 cm length) fragment of a fractured central venous catheter was embolized into the venous system and the right atrium in an 8-month-old boy with Hirschsprung disease who had undergone colostomy closure operation. While the initial X-ray showed the catheter fragment lying between the right antecubital region and the axilla (Fig. 1), cardiac catheterization at the second day revealed that the proximal tip of the catheter fragment was localized in the right subclavian vein and the distal tip was in the main right hepatic vein tracing through the superior vena cava, right atrium and inferior vena cava (Fig. 2). It was successfully removed by a percutaneous femoral vein approach using a snare-loop catheter (PFM Produkte für die Medizin AG, Köln, Germany) with a loop diameter of 10 mm (changing within the range between 10-15 mm) under fluoroscopy after being released into the superior vena cava by pulling the proximal tip of the catheter fragment with a pig-tail catheter (Fig. 3). No complications were observed.

We think that slow venous flow and negative inspiratory

pressure in the thoracic cavity may have gradually pulled the catheter fragment from the right brachial vein up into the right atrium and hepatic vein through the superior vena cava. We believe that percutaneous retrieval, which is a safe and reliable technique, should be considered as the treatment of choice for intracardiac or intravascular foreign bodies because it prevents the potential complications related with open surgical techniques that require cardiopulmonary bypass.

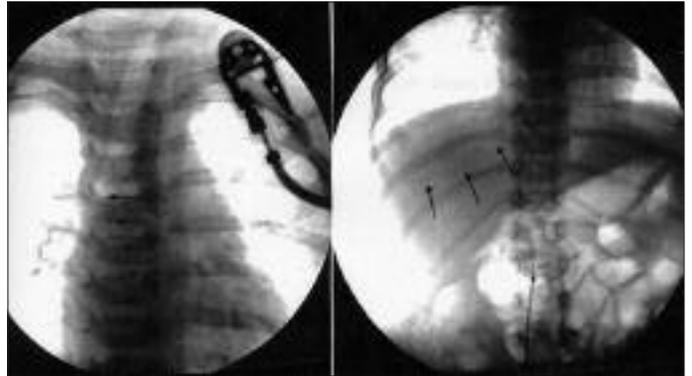


Figure 2 (a, b). Angiograms obtained during cardiac catheterization show the catheter fragment embolized up into the main right hepatic vein with its proximal tip in the right subclavian vein tracing through the superior vena cava, right atrium and inferior vena cava



Figure 1. Initial X-ray shows the catheter fragment lying between the right antecubital region and the axilla

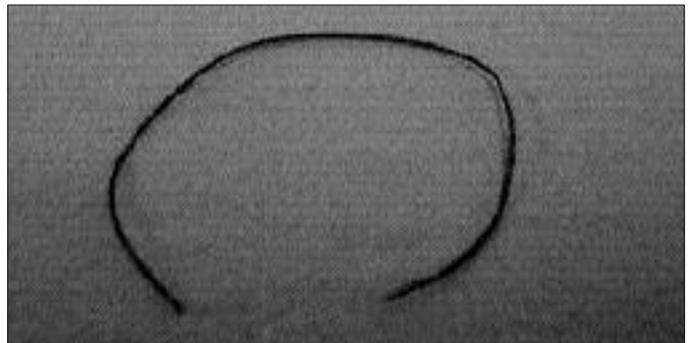


Figure 3. The 16 cm length catheter fragment, which was successfully retrieved by Snare-loop technique