

report a case of IE associated with silent PDA. We think that cystic fibrosis is a coincidence since it is obvious that the incidence of IE has not been increased in patients with cystic fibrosis. Estimated prevalence of silent PDA's were found as 0.5-1% in normal population, but IE associated with silent PDAs were reported in only few patients before the present case (7, 8). On the other hand residual shunts, which are usually inaudible or associated with nonspecific systolic murmur, are not uncommon in patients who underwent transcatheter closure of PDA. Latson and his associates (10) reported that patients with silent PDA after device occlusion are not at a higher risk for developing endocarditis.

Although the natural history of a small patent arterial duct with a negligible left to right shunt is not known with certainty, this and previous reports may indicate that silent PDA has a risk of developing IE. In cases of unexplained fever and bacteremia, endarteritis with a pre-existing silent PDA should be considered and investigated by 2-dimensional and color Doppler echocardiography. But, it cannot be recommended that antibiotic prophylaxis or closure of every silent PDA routinely unless exact incidence of IE will be cleared out by long-term prospective studies in patients with silent PDA.

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Surgical removal of a migrated guidewire: a safe method

Intravenöz kılavuz telin cerrahi olarak çıkarılması; güvenli bir yöntem

Hakan Aydın, Bülent Koçer, Demet Albayrak*, Koray Dural

Department of Thoracic and Cardiovascular Surgery and * Department of Anesthesiology and Reanimation,
Ankara Numune Training and Research Hospital, Ankara, Turkey

Introduction

The potential complications of percutaneous venous catheterizations are various and include pneumothorax, subclavian and carotid artery puncture, hematoma, air embolism, catheter malposition, catheter fragment embolization, venous thrombosis, infection and problems of guidewires (1). The rate of broken intravascular catheters has been estimated to be 0.1%, but no definitive data are available for other types of foreign objects such as stents, coils and broken or intact guidewires (2). Serious complication rate associated with foreign bodies in vascular system has been reported to be as high as 71%, and with a high mortality rate ranging between 24-60% (3). Importantly, these patients with intravascular objects are candidates for serious complications such as arrhythmias, perforation, thrombosis, and infection, which may be fatal in some instances. Foreign bodies left accidentally in intravascular compartments during invasive procedures have been reported in various publications. An intravascular foreign body is commonly an iatrogenic complication that occurs during arterial or venous catheterization including interventional procedures, and the foreign body could be either a catheter fragment, a coil or a guidewire. The danger of septic-thrombotic complications and risk of vascular perforation, makes urgent removal of the object by any technique mandatory.

We report a case of an accidental iatrogenic J-wire migration into vena cava during subclavian vein catheter insertion for central venous pressure monitoring in a woman and its unusual, safe and easy way of surgical removal. The guidewire was located in the venous route from the superior vena cava to the beginning of the right common iliac vein. The following report includes a different technique for removing foreign objects like guidewires without invasive radiological intervention.

Case report

A 57-year-old woman in the postoperative period of an abdominal surgery for colorectal cancer followed in surgical intensive care unit, underwent an attempt of subclavian vein catheter insertion by Seldinger technique, ended in inadvertently misplaced guidewire in the venous system. Immediate surgical exploration of subcutaneous tissue at the insertion site by general surgeons revealed no result. After cardiovascular surgery consultation, vascular evaluation was done beginning with routine X-ray. After serial X-rays, we saw that the straight tip was just at the caudal end of the vena cava, and the j-tip part of the catheter was located in right common iliac vein, where the wire was positioned in a route from superior vena cava through right atrium down to iliac vein (Fig. 1).

Because of the fact that the j-wire was intraluminal, anticoagulation with low molecular weight heparin was given. Absence of angiography



Figure 1. Guidewire in inferior vena cava, directed to the right iliac vein



Figure 2. Removal of guidewire through a small incision on left femoral vein using a Fogarty catheter

laboratory in our hospital and risk of transfer of such a patient directed us to a surgical way of removal. Because of previous abdominal surgery, reoperation for transabdominal way, and more invasively median sternotomy were thought to be too aggressive for this patient. To solve the problem, we thought about using a Fogarty catheter transfemorally in order to remove the guidewire from the common femoral vein by using a small incision at groin.

For this reason, we decided to remove the wire by using Fogarty catheter, and we succeeded to remove it on the second attempt (Fig.2). It was seen that thrombus formation around the guidewire has begun despite a short period of time interval (45 minutes) between the insertion procedure of the catheter and the surgical removal. Postoperatively, we continued low molecular weight heparin for 10 days with no complication related to the venous system and the late postoperative course was uneventful.

Discussion

Recent reports suggest that both the nature of intravascular foreign objects and new tools with sophisticated techniques available to retrieve them, have changed substantially in the past decade. In early 1980s, percutaneous removal techniques using Dormia basket was introduced, but today the Nitinol gooseneck snare loops are more widely used for this exclusive application (3). Despite these advanced percutaneous techniques, all of them require a catheter laboratory and an experienced interventional radiologist. As it is well known, in all hospitals over the country, similar techniques are used in patients, who need central venous catheterization, but only some of them have interventional radiology facility. We advise this method only in suitable cases and in patients with no chance of transport.

Even though surgical intervention of any kind ranging from direct removal from the target vessel to less invasive surgical techniques seems to be harmful, it is sometimes inevitable because of absence of an angiography laboratory, as in our hospital (4). Also as in our case, transfer of an intensive care patient itself carries a significant risk for comorbidities, because of their critical clinical status.

Because of high complication rate when they are left in situ, removal of intravascular foreign objects, either percutaneously or surgically, is justified by many authors (5, 6). Even though most centers use percutaneous systems for intravascular foreign body retrieval, it is sometimes impossible because of technical inadequacy of radiology departments and general status of the patient. Another modification of this method may also be used under fluoroscopy by filling the balloon of the catheter by radio-opaque liquid for guidewires located in all levels of the venous system. This type of minimally invasive surgical intervention may be a safe, easy, and cheap alternative in some selected critically ill patients, especially where percutaneous removal is not possible.

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