

Prolonged Fever in a Case of End Stage Renal Disease with Remained Guidewire

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Abstract

Catheter-related infection is one of the severe complications in hemodialysis patients with high morbidity and mortality. Transesophageal echocardiography is a suitable diagnostic method that helps diagnose catheter infections with relatively high accuracy. A 70-year-old woman on chronic dialysis through a catheter was admitted with a suspected catheter infection. In transesophageal echocardiography and fluoroscopy, an elongate guidewire was observed from the right atrium to the femoral veins left there since previous catheter insertion one year ago. The Guidewire was removed surgically, and the tricuspid valve was replaced with a mechanical valve because of infective endocarditis.

INTRODUCTION

Central venous catheters are introduced for short-term dialysis but occasionally used as permanent vascular access inpatient without alternative options. Hemodialysis (HD) patients presenting with fever have high bacteremia rates, especially in patients with dialysis catheters and bacteremia patients. Herein, we report a case of end-stage renal disease suspected of having a catheter infection but eventually diagnosed as endocarditis due to catheter insertion complications.

CASE PRESENTATION

A 70-year-old woman was admitted to the hospital with fever and chill from one week ago. She was undergoing hemodialysis via permacath for one year and was hospitalized three times a year with fever and catheter infection diagnosis. Transthoracic echocardiography revealed no pathologic finding except a shiny catheter tip in the right atrium without any visible particles. Blood culture was negative on several occasions. However, the laboratory findings showed

polymorphonuclear leucocytosis (WBC: 11500/ μ L, PMN: 87%), anemia (Hb: 6.7mg/dL) and elevated erythrocyte sedimentation rate (ESR: 105mm/h).

The patient was candidated to perform transesophageal echocardiography that revealed a catheter in cavo-atrial junction with no particle because of the persistent fever. A linear foreign object with a glossy appearance extending from the inferior vena cava into the right atrium cavity was seen with two semi-moving masses suggesting thrombosis or infected particle on a guidewire (Fig 1, movie 1 available online). There was another semi-mobile tissue texture mass (15x8mm) on the atrial side of the tricuspid valve with the suggestion of vegetation (Movie 2 available online) that caused severe valvular regurgitation.

In fluoroscopy, it was exciting to see that there was an elongate guidewire from the right atrium to the femoral veins that had been left there since the previous catheter insertion one year ago (Fig 2, Movie 3 available online). Despite three weeks of antibiotic treatment, the patient

continued to have a fever, and no changes in the masses size were observed in subsequent echocardiography.

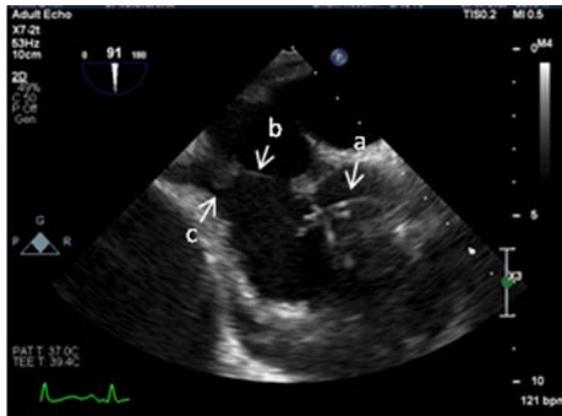


Figure 1. Transesophageal echocardiography (90° Bicaval view), a: Catheter, b: Guidewire, c: Thrombosis

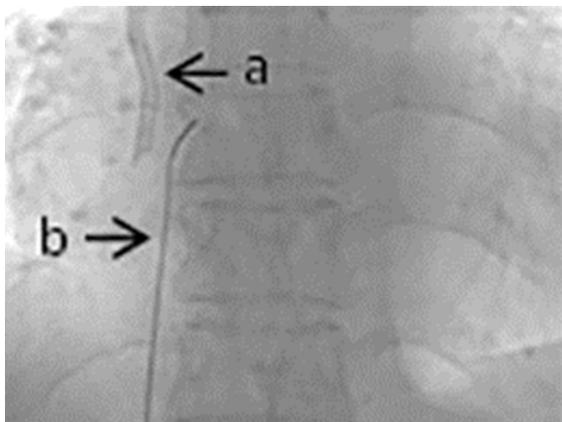


Figure 2. Fluoroscopy, a: Catheter, b: Guidewire



Figure 3. Removed Guidewire

The patient underwent surgery, Guidewire was removed (Fig 3), and the patient's tricuspid valve was replaced with a mechanical valve.

DISCUSSION

A lost guidewire is a rare, dangerous complication of catheter insertion. However, it is entirely preventable.

Some methods to prevent guidewire loss are recommended [1]. Checking the Guidewire before insertion, Holding the proximal end of the Guidewire during the procedure, ensure the proximal end of wire viewing before advancing the catheter, complete removal at the end of the process, and a control CXR after the procedure is very helpful [1]. In addition, immediate consulting with an expert interventionalist when you suspect a lost guidewire is very important. Angiographic snaring for guidewire retrieval is common [2]. Surgical removal is the last choice.

Infectious disease is one of the most common causes of death in hemodialysis (HD) patients [3]. The incidence of bacteremia is more significant in patients with a catheter than in those with fistula, and many presents with fever [4]. Clinical improvement within 24 hours following catheter removal is suggestive of catheter-related bloodstream infection. Routine catheter removal is not necessary for the absence of microbiological confirmation. About 5-10% of patients with IE have false-negative blood culture results. In our case, blood culture was negative, however because of prolonged fever of unknown origin, transesophageal echocardiographic documentation of vegetation [5], presence of Guidewire for a long time, and lack of antibiotic response, surgical removal was inevitable [6].

Conflict of Interests

The authors declare that they have no competing interests.

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