CASE REPORT

Case Report: Catheter-Related Interatrial Septum Endocarditis Caused by Candida Parapsilosis

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Introduction

Patients with end-stage chronic kidney disease without mature arteriovenous fistula frequently require central venous access for dialytic therapy. More than 15 percent of patients who receive these catheters have complications such as infection, arterial puncture, thrombosis and pneumothorax.[1] Infective endocarditis (IE) is a rare and serious complication with high morbidity and mortality. Right-sided endocarditis is uncommon due to low hemodynamic pressure, but patients using central venous catheters have an increased risk.[2] The correct therapeutic approach whenever there is no valvar involvement is not well defined. We report a case of interatrial septum endocarditis caused by candida sp., associated to the prolonged use of catheter.

Case Report

A 49-year-old chronic dialysis female patient, with tunneled catheter due to multiple episodes of arteriovenous fistula malfunction, was sent from the dialysis clinic to emergency department. She had presented with fever and chills during dialysis sessions in the previous week. She also had dyspnea, dry cough and nausea.

At admission, she had a central venous catheter placed at the right subclavian vein with flogistic signs. Cardiovascular examination was normal, without murmur. There was no other relevant information in the physical examination.

Keywords

Renal Insufficiency, Chronic; Catheter-Related Infections; Endocarditis, Bacterial; Candida.

Blood tests showed altered CBC (hemoglobin 9.6 mg/dL, leucocytes 3400 - 8.5% young forms) and positive inflammatory tests (C - reactive protein 26.2 mg/dL, reference level < 4 mg/dL). Cultures were positive for *candida parapsilosis*.

Chest X-ray showed no changes in lung parenchyma. A venous catheter was placed in the right atrium/inferior vena cava. There were no relevant alterations in the ECG. Transesophageal (TE) Echocardiogram (Figure 1) showed normal left and right ventricle and left atrium. The right atrium had a catheter inside, and a mobile image of 1.5 x 1.2 cm within the inferior vena cava, close to the catheter tip adhered to interatrial septum.

Since there was no valvar involvement, the heart team decided not to submit the patient to heart surgery. Antibiotic therapy was started with Amphotericin B and changed to Fluconazole after a fungal susceptibility test was performed. Control echocardiography after two weeks showed regression of the vegetation size. The patient was discharged with a prescription for oral Fluconazole 800 mg for dialysis days (three times a week). After three months, the patient was asymptomatic and control TE echocardiogram (Figure 2) did not show vegetation. Thus, antifungal treatment was suspended.

Discussion

IE is significantly more common in hemodialysis patients than in the general population.[3] The use of a central venous catheter (either permanent or temporary) increases that risk.[4]

In patients on chronic HD, IE affects mainly native valves and only a small percentage of cases (20%) are seen in prosthetic valves.[4] It usually involves the left side of the heart, but patients using central

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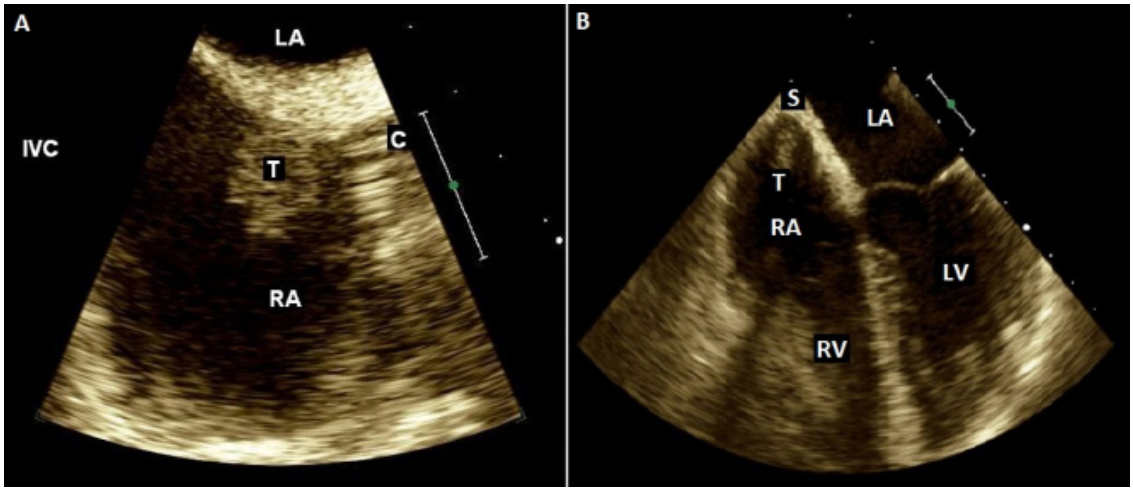

Figure 1 – *Transesophageal echocardiogram showing a mobile image (T) of 1.5 x 1.2 cm adhered to interatrial septum, close to the catheter (C) tip. IVC: inferior vena cava; LA: left atrium; RA: right atrium; RV: right ventricle; LV: left ventricle; S: septum.*

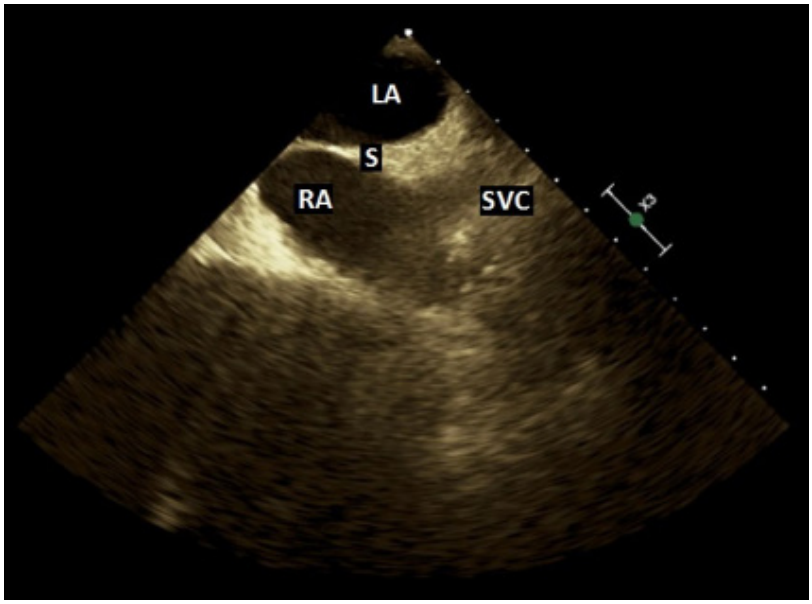

Figure 2 – *Control transesophageal echocardiogram performed three months after diagnosis showing complete regression of the thrombus. S: septum; LA: left atrium; RA: right atrium; SVC: superior vena cava.*

venous catheters have increased risk of developing right-sided IE due to mechanical injuries during guidewire insertion and forceful injection through the catheter.[2] Right-sided IE represents 5-10% of all IEs, and is classically related to intravenous drug use.[5] IE affecting the interatrial septum is even less common and has only been described in association to prosthetic devices, such as valves and patches.[6] As far as we know, this was the first case described of catheter-related interatrial endocarditis.

Common microorganisms causing IE in HD patients are staphylococcus aureus, enterococcus and streptococcus. Gram-negative species are rarely found, and fungal agents are even rarer.[5-7]

Our patient had no heart murmur and no embolic or immunologic signs of endocarditis, making the diagnosis challenging. Especially in dialytic patients with long term venous catheters, the diagnosis of right sided endocarditis requires a high rate of suspicion. It is imperative that patients with long term catheters have the catheter's tip placed correctly in the superior vena cava, confirmed by imaging, in order to avoid complications.

There is no specific guideline recommendation for the treatment of IE without valvar involvement, so we chose not to operate on the patient even in the presence of fungal infection. We maintained antifungal therapy for approximately 4 months, and the drug was suspended after confirming complete regression of the lesion with TE echocardiogram. Removal of the permanent catheter in this situation is highly recommended.[8]

Author contributions

Conception and design of the research: Araújo GN, Valle FH, Freitas DM, Lampa FM, Gus M, Rohde LE. Acquisition of data: Araújo GN, Valle FH, Freitas DM, Lampa FM. Analysis and interpretation of the data: Araújo GN, Valle FH, Freitas DM, Gus M. Writing of the manuscript: Araújo GN, Lampa FM, Gus M, Rohde LE. Critical revision of the manuscript for intellectual content: Gus M, Rohde LE.

Potential Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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Study Association

This study is not associated with any thesis or dissertation work.

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