

We Say “Reunite with Your Pure Heart” to our Patient who Will Undergo Kidney Transplantation

Shafa Shahbazova, Rashad Shahvaladov

Central Clinic Hospital, Department of Cardiology, Baku, Azerbaijan

ABSTRACT

Permanent hemodialysis catheters are regularly used in stage V chronic kidney disease patients undergoing hemodialysis, but their long stay in the body can result in infection, sepsis and thrombus formation in the right atrium. Hemodialysis catheter-related right atrial thrombus is a rare complication but can lead to serious complications. Intracardiac thrombus can be asymptomatic in hemodialysis patients, and it can manifest itself with fever, shortness of breath, chest pain, and even sudden death due to pulmonary embolism.

Keywords: Catheter-related right atrial thrombus, hybrid operation, kidney transplantation, hemodialysis

INTRODUCTION

Permanent hemodialysis catheters are commonly used in stage V chronic kidney disease (CKD) patients undergoing hemodialysis, but their long stay in the body can result in infection, sepsis, and thrombus formation in the right atrium [1]. Hemodialysis catheter-related right atrial thrombus is a rare complication that can lead to serious complications. Intracardiac thrombus can be asymptomatic in hemodialysis patients and manifest as fever, shortness of breath, chest pain, and even sudden death due to pulmonary embolism [2,3].

CASE PRESENTATION

A 34-year-old male patient with long-standing complaints of nausea, shortness of breath, and high blood pressure developed end-stage CKD due to glomerulonephritis. For 4 months, the patient has been undergoing hemodialysis through the right internal jugular catheter with the diagnosis of CKD stage V. On 16.11.2022, the patient applied to the hospital for a kidney transplant operation, and preparations for the operation were started. On that date, the patient was asked to consult a cardiologist before transplantation. Vitals were normal, cre-8.5, sinus tachycardia on electrocardiogram, left ventricle ejection fraction-55% on echo, and a hyperechogen mass of 38, 16 mm was observed inside the right atrium (thrombus?- TEE is recommended). It was decided to treat with Clexane 0.4 mL

2 subcutaneous preparation for 2 weeks. Because no reduction in the size of the mass was observed after the treatment, TEE was performed on 01.12.2022.

A hyperechogen, uneven 38 20 mm mass (thrombus? Derivation?) attached to the lateral wall with a wide leg between the inferior vena cava and superior vena cava was observed in the right atrium. Cardiac computed tomography (CT) is performed on the patient for differentiation, and a wide-based, irregular, hypodense, non-contrast, homogeneous intracardiac mass of 35.0, 20.0, 34.0 mm, bulging from the posteroinferior wall of the right atrium to the RA orifice is observed (the CT image is more in favor of a right atrial thrombus). The patient is advised to consult a cardiologist, and based on the opinion of the council, it is decided to perform both operations at the same time. On 15.12.2022, a hybrid operation-first “thrombus removal from the right atrium”, then “right sided laparoscopic donor nephrectomy” was performed and the removed kidney was successfully transplanted into the right retroperitoneal area. Because of pathohistological examination of the mass, it was confirmed to be a thrombus. After 1 week, the patient was sent home under outpatient observation (cre 1.36). The patient is continuously monitored by us. In the echo examination, no pathological changes were detected in the patient’s clinical complaints.



Address for Correspondence: Shafa Shahbazova MD, Central Clinic Hospital, Department of Cardiology, Baku, Azerbaijan

Phone: +99455 692 03 00 **E-mail:** shafashahbazova@yahoo.com **ORCID ID:** 0000-0002-6695-1584

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DISCUSSION

According to recent studies, right atrial thrombosis associated with permanent hemodialysis catheter is found in 8% of patients with CKD. The specificity of echo examination in the detection of thrombus is 86% and its sensitivity is 95% [4]. Right atrial thrombus is divided into two types. Type I is of deep venous thrombosis origin and is prone to thromboembolism. Type II thrombus is formed in the atrium with a foreign body such as a central venous catheter, is usually inactive, and has a lower risk of mortality [5].

In the patient we present, despite 2 weeks of anticoagulant therapy, the size did not shrink, leading to a rejection of the diagnosis of thrombus, and cardiac CT focused on a calcified thrombus mass. The absence of a malignant mass of the mentioned derivative did not prevent its removal by joint surgery. Histopathology confirmed that the mass was a thrombus.

Educational issues

1. Patients with indwelling hemodialysis catheters should undergo regular echo examination to prevent complications that may occur in the future (e.g ischemic stroke due to thromboembolism, pulmonary embolism).
2. Implementation of hybrid heart operations with transplantation in China possible.

Ethics

Informed Consent: Patient consent was obtained.

Authorship Contributions

Surgical and Medical Practices: S.S., R.S., Concept: S.S., R.S., Design: S.S., R.S., Data Collection or Processing: S.S., R.S., Analysis or Interpretation: S.S., R.S., Literature Search: S.S., R.S., Writing: S.S., R.S.

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