Acute ST-segment elevation myocardial infarction treated with delayed angioplasty in a patient with anomalous origin of the right coronary artery in the early phase after kidney transplantation

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Abstract

This case demonstrates a rare anomalous of origin of right coronary artery from the left sinus of Valsalva in patients who underwent kidney transplantation complicated by an acute ST elevation myocardial infarction treated with delay angioplasty.

Key words: acute coronary syndrome, kidney transplantation, coronary anomaly.

Case report

We report the case of a 67-year-old male patient with end-stage chronic renal disease (caused by amyloidosis), hypertension complicated by left ventricle hypertrophy, and chronic obstructive pulmonary disease, who underwent kidney transplantation (KTx). On the day following the KTx surgery the patient developed typical chest pain at rest. The ECG revealed ST elevation of the inferior and posterior wall and the patient was referred to a tertiary site with 24/7 catheterisation laboratory availability. Left coronary artery (LCA) angiography revealed no significant stenosis; however, repeated attempts to cannulate the right coronary artery (RCA) were unsuccessful (Figures 1 A, B).

Based on the following criteria: early post-surgery period, high risk of contrast-induced nephropathy (CIN), and a potential graft loss, the operator decided to terminate attempts to visualise RCA and instead to treat the patient medically. The patient was referred back to the surgical department, but within next 24 h the patient reported recurrence of symptoms of angina and blood test showed elevation of troponin I to 1.02 ng/ml. The ECG revealed persistent ST-segment elevation within the inferior and posterior wall (Figure 2), and echo examination showed inferior wall hypokinesis with slight reduction of the ejection fraction.

A repeated coronary angiography was performed in our cath lab and revealed occlusion of the proximal RCA (TIMI 0), with its anomalous origin from the left coronary sinus (below and opposite to the LCA origin) (Figure 3).

Successful percutaneous coronary intervention (PCI) with stent implantation and restoration of the flow in RCA was performed (TIMI 3) (Figure 4). During the procedure only 100 ml of contrast agent was injected.

During post-PCI slight elevation of serum creatinine level (to 1.4 mg%) was noted but did not meet CIN criteria. Further hospitalisation and 3 months of follow up was uneventful and kidney graft function was normal.

Discussion

This case demonstrates a rare anomalous origin of RCA from the left sinus of Valsalva in a patient who underwent kidney transplantation complicated by an acute ST elevation myocardial infarction. This ectopic RCA is considered to be an independent risk factor for adverse cardiovascular events, and this lesion is usually a challenge for cardiologists [1]. To exclude a malignant course of RCA between the aorta and pulmonary artery, patients should undergo scheduled multi-slice computed tomography [2]. The presence of renal graft should not preclude potentially beneficial primary an-

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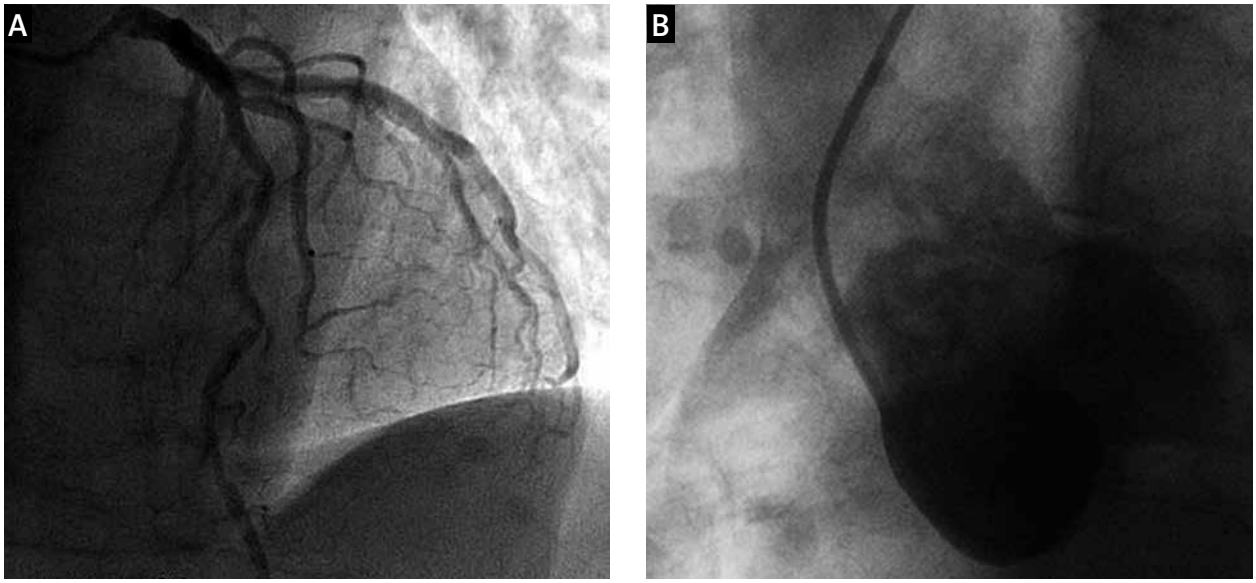

Figure 1. Left coronary artery angiography (**A**) and aortography without the origin of the right coronary artery (**B**)

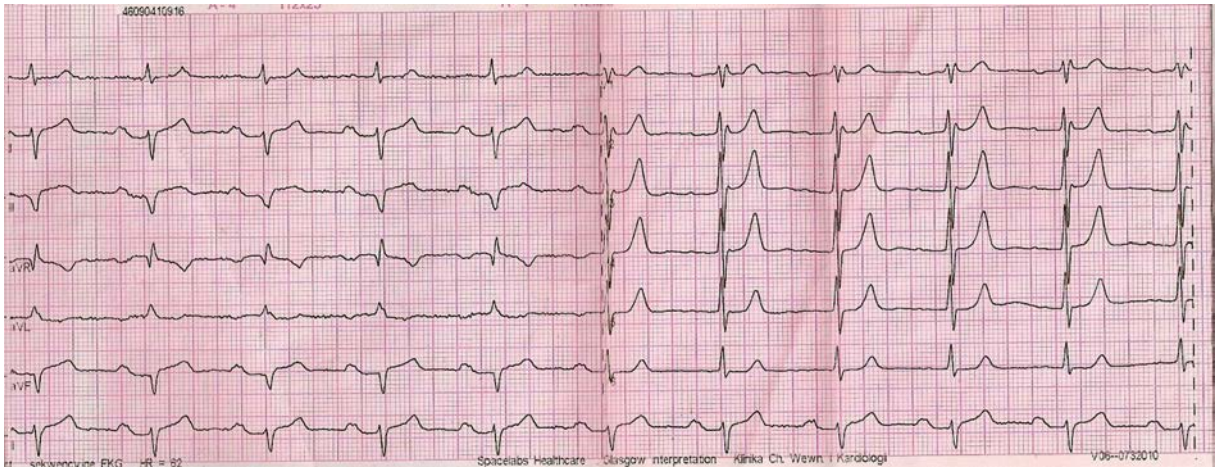

Figure 2. Electrocardiogram displaying ST segment elevation

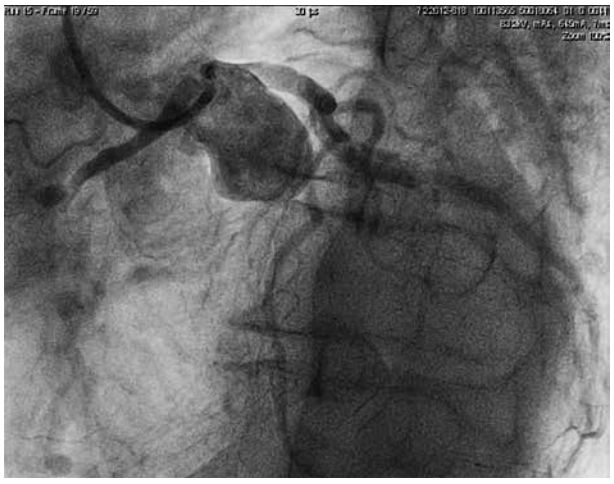

Figure 3. A repeated coronary angiography revealed occlusion of the proximal RCA (TIMI 0), with its anomalous origin from the left coronary sinus (below and opposite the LCA origin)

Figure 4. Right coronary artery after successful PCI with stent implantation and restoration of TIMI 3 flow

gioplasty interventions, especially in ST-elevation myocardial infarction patients [3].

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