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Acute coronary syndrome in a patient with chronic heart failure, end-stage renal disease and right nephrostomy

Ostry zespół wieńcowy u chorego z przewlekłą niewydolnością serca, schyłkową niewydolnością nerek oraz nefrostomią prawostronną

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Abstract

A 68-year-old patient with chronic heart failure, end-stage renal disease and right nephrostomy resulting from long-term nephrolithiasis was admitted because of retrosternal pain with shortness of breath at rest. Due to end-stage renal disease, despite the characteristic clinical picture, he was initially qualified for conservative treatment. However, during diagnostics and after deterioration of the patient's condition, he underwent urgent coronarography. During the procedure, coronary intervention within the significantly narrowed coronary vessels was unsuccessful. After the procedure, the patient also started hemodialysis with good effect. The patient's condition improved and he was discharged home with a recommendation to continue dialysis and continue outpatient care.

Key words: chronic heart failure, acute coronary syndrome, end-stage renal disease, nephrolithiasis, right nephrostomy

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Introduction

Cardiovascular diseases lead to increased mortality in patients with end-stage renal failure, including those undergoing hemodialysis [1]. It is estimated that the risk of death in hemodialysis patients is 8% higher compared with the general population, and the risk of cardiovascular death increases to 43% [2].

The paper presents a patient with multiple comorbidities, requiring multidisciplinary care due to acute coronary syndrome.

Case report

A 68-year-old man with chronic heart failure, New York Heart Association (NYHA) class III, called an ambulance because of retrosternal pain radiating to his left arm and jaw, and dyspnea at rest. The medical history revealed a high burden of cardiovascular diseases — coronary artery disease with the Canadian Cardiovascular Society (CCS) angina class II, a recent inferior-wall myocardial infarction treated with right coronary artery (RCA) angioplasty with drug-eluting stent (DES) implantation (2014), two sudden cardiac arrests many years ago, chronic kidney disease (CKD) due to long-term of nephrolithiasis with right nephrostomy in 2016. The patient has never smoked.

Despite the characteristic clinical picture, due to concerns about the potential further deterioration of renal function, the patient was initially treated conservatively.

On admission, the patient was in fair general condition, stable, in good verbal-logical contact. He reported minor retrosternal pain and mild dyspnea at rest. Physical

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examination: tachycardia 110/min, no pathological murmurs, no clinically evident dyspnea, 92–96% saturation, arterial blood pressure within the normal range, crackles above the lungs up to the level of the shoulder blade angles on auscultation. The abdomen was soft, painless, without ascites. There was right nephrostomy with no signs of inflammation of the surrounding tissues. No peripheral edema. Daily diuresis was preserved, both from the urethra and nephrostomy. The following abnormal results were found in laboratory tests: elevated but stable levels of troponin, creatinine and urea, with the normal initial level of creatinine kinase, decreased glomerular filtration rate, mild normocytic anemia, low vitamin D level, and significantly elevated parathyroid hormone. The electrocardiogram (ECG) examination revealed nonspecific ST-segment changes comparable to those observed in ECG recorded during previous hospitalizations. Chest radiograph suggested an initial stage of pulmonary edema. Echocardiography showed enlarged left atrium, no segmental dysfunction of contractility, decreased global contractility, ejection fraction (EF) 20%, mild mitral and trigeminal regurgitation, moderate pulmonary hypertension.

On the first day after admission, the patient's condition deteriorated and his symptoms got worse. At the same time, a significant increase in the levels of cardiac enzymes was demonstrated. Renal parameters and daily diuresis were stable. The ECG showed an incomplete left bundle branch block and anteroseptal myocardial infarction with ST-segment depression.

During coronary angiography, an unsuccessful attempt was made to perform percutaneous coronary intervention of 90% stenosis posterior interventricular branch of the RCA (diffuse calcification, tortuous course).

On the second day after coronary angiography, the patient started renal replacement therapy. He was discharged after recovery and qualified for the implantation of a cardioverter-defibrillator.

Discussion

In the presented case, the treatment process required a number of risky decisions, which turned out to be right.

The coexistence of anemia with cardiovascular and renal diseases is both the cause and the effect of the patient's deteriorating condition. This phenomenon of mutually aggravating cardiovascular and renal disorders has been called the cardiovascular anemia syndrome [3, 4].

It should be noted how closely the renal dysfunction is related to chronic heart failure. The cooperation of both organs is related to many neurohormonal processes that determine the homeostasis of the body. Interaction between these processes has been called the cardio-renal syndrome — acute or chronic dysfunction of one organ may result in dysfunction of the other organ if optimal treatment is not implemented [3, 5].

Conflict of interest

The authors declare no conflict of interest.

Streszczenie

Pacjent w wieku 68 lat, z przewlekłą niewydolnością serca, schyłkową niewydolnością nerek oraz nefrostomią prawostronną w przebiegu wieloletniej kamicy nerkowej, został przyjęty do szpitala z powodu bólu zamostkowego z dusznością spoczynkową. Ze względu na schyłkową niewydolność nerek, mimo charakterystycznego obrazu klinicznego, zakwalifikowano go do leczenia zachowawczego. Jednak w toku diagnostyki oraz po pogorszeniu stanu chorego wykonano pilną koronarografię. Podczas zabiegu podjęto próbę interwencji wieńcowej w obrębie znamiennie zwężonych naczyń wieńcowych — bezskutecznie. Po zabiegu pacjent rozpoczął także hemodializy z dobrym efektem. W stanie poprawy został wypisany do domu z zaleceniem kontynuowania dializoterapii oraz dalszej opieki ambulatoryjnie.

Słowa kluczowe: przewlekła niewydolność serca, ostry zespół wieńcowy, schyłkowa niewydolność nerek, kamica nerkowa, nefrostomia prawostronna

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