


COVID-19 pandemic delays diagnosis and treatment of patients with acute coronary syndrome

Epidemia COVID-19 opóźnia proces diagnostyczno-leczniczy chorych z ostrym zespołem wieńcowym

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Abstract

We would like to present a case study of a 77-year-old patient who came to the hospital two weeks after an episode of severe chest pain due to fear of infection with SARS-CoV-2 virus. As a result of the delay. The patient developed numerous complications of myocardial infarction.

Key words: acute coronary syndrome, myocardial infarction, complications of myocardial infarction, rupture of the free wall of the left ventricle, ventricular tachycardia, mitral regurgitation

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Introduction

Acute coronary syndromes are associated with the risk of various types of early and late complications that worsen patients' prognosis. One of the most dramatic and with the highest mortality rates are severe ventricular arrhythmias and mechanical complications of myocardial infarction. The use of early revascularization resulted in a significant decrease in complications in acute coronary syndromes (ACS) [1, 2]. Fearing SARS-CoV-2 (severe acute respiratory syndrome-related coronavirus 2) infection, more than half of patients with myocardial infarction do not come to the hospital or arrive late, which significantly increases the risk of complications [3].

Case report

A 77-year-old patient was referred to the Department of Cardiology from the district hospital in a stable condition

after suffering an episode of unstable ventricular tachycardia (VT) interrupted by electrical cardioversion. The patient reported chest pain that occurred two weeks before admission but did not go to the hospital at that time due to the coronavirus disease 2019 (COVID-19) pandemic. On admission, the patient was a feverish person with signs of pneumonia and negated the chest pain. The electrocardiogram (ECG) recorded a regular sinus rhythm of 80/min, disturbances in intraventricular conduction in the form of the right bundle branch block, and persistent ST-segment elevation in leads V2–V3. Laboratory tests showed a high concentration of inflammatory parameters and markers of myocardial necrosis without dynamic growth. Echocardiography showed akinesia of the inferior, inferolateral and lateral walls with a left ventricular ejection fraction of 45% and the presence of fluid in the pericardium with numerous streaks of fibrin up to 18 mm behind the lateral wall of the left ventricle (Figure 1). Based on the overall clinical picture, the patient was diagnosed with a previous myocardial

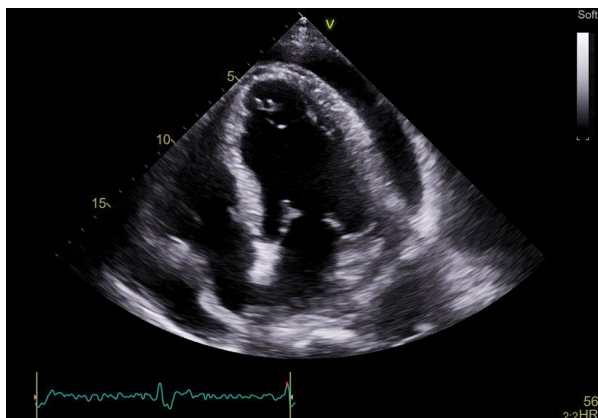


Figure 1. A significant amount of fluid in the pericardial sac as seen on a transthoracic echocardiographic examination



Figure 2. A branch that surrounds the left coronary artery closed in the middle segment

infarction and pneumonia, empirical antibiotic therapy was started, and the patient was not qualified for urgent coronary angiography. On the third day of hospitalization, he developed sustained ventricular tachycardia interrupted by an amiodarone infusion. The patient was qualified for coronary angiography, finding a closed circumferential branch, after a donation of two marginal branches, with a circumference showing from the collateral circulation, qualifying the patient for conservative treatment (Figure 2). After the procedure, recurrent ventricular tachycardias resistant to pharmacological treatment were observed; therefore, urgent ablation was performed to stop the arrhythmia. The control echocardiography showed fluid in the pericardial sac. Magnetic resonance imaging was performed, showing

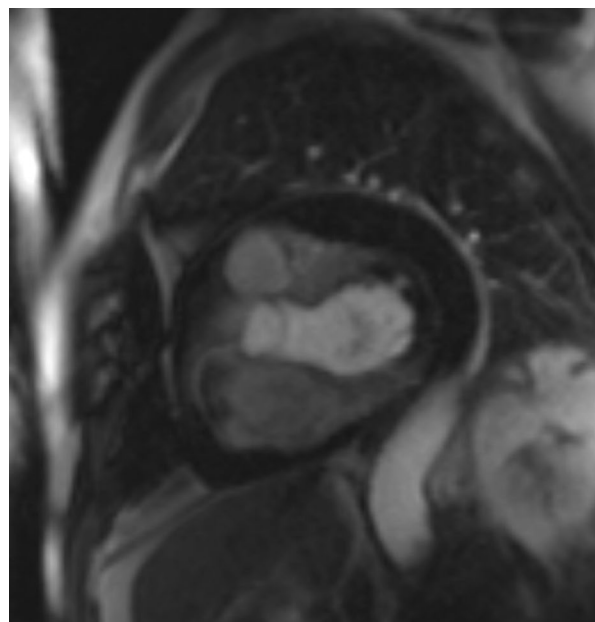


Figure 3. Magnetic resonance imaging with a slit-shaped, incomplete defect in the lateral wall of the left ventricle

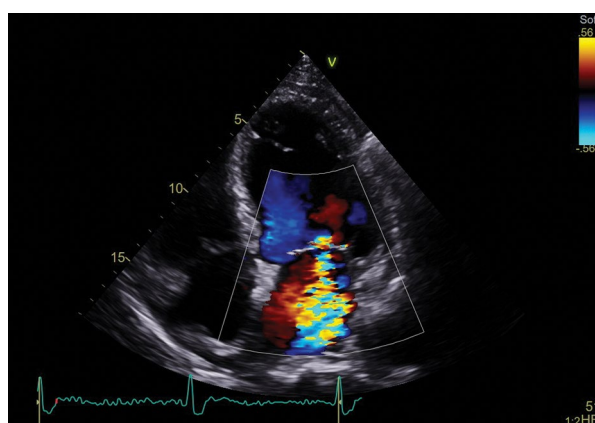


Figure 4. Severe functional mitral regurgitation

a fissured, incomplete defect in the lateral wall, filling with a contrast that might correspond to the perforation site, but no outflow of contrast to the pericardial sac was observed (Figure 3). Subsequent echocardiographic examinations showed a decreasing amount of fluid in the pericardial sacs. The stable patient was discharged home with an outpatient inspection in two weeks.

Follow-up

Follow-up echocardiography showed no haemodynamically significant amount of fluid in the pericardial sac but evidence of severe functional mitral regurgitation (Figure 4). The patient was consulted cardiosurgically and is currently awaiting mitral valve surgery.

Discussion

The reduced number of patients reporting myocardial infarction during the COVID-19 pandemic undoubtedly has a significant impact on the prognosis. An analysis carried out in Great Britain showed an increase in the total number of deaths during the pandemic, including deaths not related to SARS-CoV-2 infection [4]. Moreover, coronavirus infection may trigger acute coronary syndrome, similarly to the influenza virus, which may be associated with an even greater underestimation of the number of people who did not go to the hospital due to ACS [5].

Another factor that increases the risk of ACS complications is the lengthening of the time from the first contact with the health care system to revascularization. De Rosa et al. [6] analysed data from hospitalization of patients for myocardial infarction in Italy during the peak of the pandemic in March 2020. This study reported a 31.5% increase

in the time to revascularization compared to March 2019. The increase in cases of patients with non-ST-elevation myocardial infarction (NSTEMI) treated conservatively was also observed, as well as a twofold increase in the number of serious complications [6].

Many hypotheses have sought to explain the reduction in hospitalization due to ACS during the COVID-19 pandemic. Stay-at-home orders and fear of SARS-CoV-2 infection likely discourage patients from seeking help from the healthcare system. In addition, the change in the organization of work in hospitals, including the creation of places and departments for the treatment of COVID-19 patients, may contribute to reduced availability of rapid diagnostics and treatment of cardiovascular diseases.

Conflict of interest

The authors declare no conflict of interest.

Streszczenie

Przedstawiono przypadek 77-letniego chorego, który w obawie przed zakażeniem SARS-CoV-2 zwlekał 2 tygodnie ze zgłoszeniem się do szpitala po epizodzie silnego bólu w klatce piersiowej. W wyniku opóźnienia w procesie diagnostyczno-lecznym wystąpiły u niego liczne powikłania zawału serca.

Słowa kluczowe: ostry zespół wieńcowy, zawał serca, powikłania zawału serca, pęknięcie wolnej ściany lewej komory, częstoskurcz komorowy, niedomykalność mitralna

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