

# Full neurologic recovery following prolonged in-hospital cardiac arrest with resuscitation

Całkowity powrót funkcji neurologicznych po długotrwałym wewnątrzszpitalnym zatrzymaniu czynności serca z resuscytacją

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We present an in-hospital cardiac arrest without prior hypothermia in which the patient made a complete neurologic recovery after 90 min of resuscitation. A 67-year-old woman presented herself to the emergency department with high risk unstable angina pectoris from where she was taken directly to the intensive care unit (ICU) due to changes in electrocardiography. Coronary angiography (CA) showed an occlusion of 99% of coronary bifurcation and additional stenoses of segments S6 (99%), S7 (50%), S9 (65%), S11 (99%) and S12 (90%) — a diagnosis which requires surgical intervention of coronary artery bypass grafting. Before and in the beginning of the CA procedure, the patient was in sinus tachycardia (110 bpm), which was a negative prognostic factor. 15 min after the beginning of CA, blood pressure started to fall, 5 min later — heart rate, and within the next 10 min cardiogenic shock with electromechanical dissociation had evolved. The patient was intubated and resuscitation according to the algorithm of asystole was started. Mean chest press rate was 130 times per minute. As a life-saving and time-sparing tactic, stenting of the bifurcation was chosen instead of bringing the patient to the cardio surgery unit. Stenting was conducted by making regular chest presses at the same time. Heart rhythm (HR) was returning sporadically only under the action of epinephrine, although disappearing as well. In general, there had been 20 ampoules of epinephrine (0.1%) administered. Additionally 10 mg of morphine solution had been administered intravenously. These resuscitative attempts (chest presses and injections of epinephrine) were continued for 90 min until the stents of segments S5, S6 and S11 were placed successfully and normal HR was restored. An intra-aortic balloon pump was placed with the function 1:1 for better maintenance of haemodynamic stability. After the return to the ICU, a clinical diagnosis of an anterior myocardial infarction without Q wave was established. Meanwhile, the patient was unconscious but reacted to the lavage with the pipe. A few hours later, she reacted to instructions and in the evening of the same day was successfully weaned from intubation. At the end of the first day, the administration of epinephrine was discontinued and infusions of nitroglycerin were started. Nine days later, a repeat stenting was performed (for S7, S12). During the in-hospital stay, a recurrent atrial fibrillation was registered, which was initially treated with electro impulse therapy and later on with amiodarone. The neurologist's consultation was not performed due to the patient's full neurologic recovery to the initial pre-arrest state. On the 25<sup>th</sup> day after hospital admission, the patient was discharged without any signs of neurological deficit. Figures 1–3 illustrate resuscitative attempts.

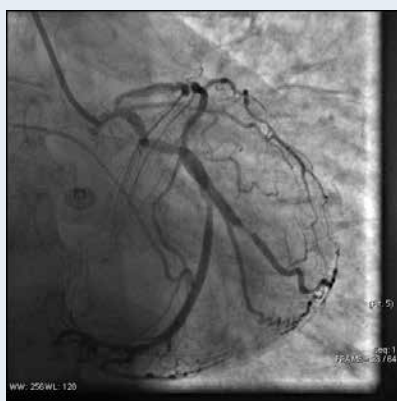


Figure 1. Coronary vessels before stenting

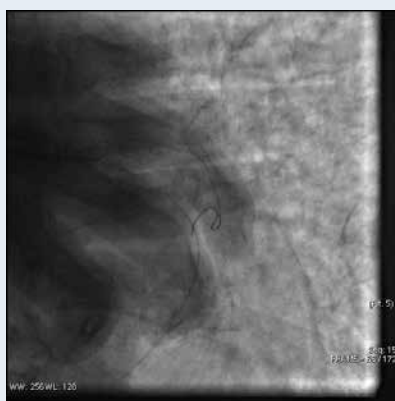


Figure 2. Heart massage



Figure 3. Successful stenting of bifurcation

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**Conflict of interest:** none declared