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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

Primary PCI with endothelial progenitor cell-capture stent in patient with skull base fracture and aspirin allergy

Pierwotna angioplastyka z użyciem stentu pokrytego przeciwciałem anty-CD34 u pacjentki ze złamaniem podstawy czaszki i uczuleniem na kwas acetylosalicylowy

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This report describes a 73 year-old female patient with ST-segment elevation myocardial infarction (STEMI) treated with primary percutaneous coronary intervention (PCI) in whom the prolonged use of dual antiplatelet therapy (DAT) as recommended by guidelines was contraindicated due to skull base fracture possibly requiring surgery, and confirmed aspirin allergy. The patient was treated in the Department of Orthopedic Surgery for the skull base fracture caused by a head trauma following syncope. Computed tomography (CT) showed transverse fracture of pyramid of left temporal bone (Fig. 1A). Patient had also moderate bleeding from the left ear and surgical procedure was considered. The cause of syncope had not been diagnosed. Two days after the trauma, she developed chest pain with ECG findings consistent with inferior STEMI. She was transferred for primary PCI in our institution. Her medical history revealed type 2 diabetes, hypertension and allergy to aspirin (severe skin rash and hypotension in the past). Echocardiography showed moderately reduced left ventricular ejection fraction of 40–45% and severe tricuspid regurgitation. Patient was transferred directly to cathlab. Coronary angiography showed normal left coronary artery and ostial occlusion of the right coronary artery (RCA) with anomalous origin from the left coronary sinus (Fig. 1B). Engaging of the RCA was difficult and required use of a left Amplatz catheter (AL2). Because of the conditions potentially limiting the prolonged use of DAT, PCI was performed with endothelial progenitor cell (EPC) capture BMS coated with anti-CD34 antibodies. Primary PCI was performed with final TIMI3 flow and ST-segment resolution (Fig. 1C). She received a loading dose of clopidogrel. During the PCI, the plasma glucose levels (450 mg/dL) required infusion of insulin. After PCI, the patient had bradycardia (20 bpm) and presyncope. The next day, acute renal failure with hyperkalemia developed, but resolved on medical treatment. 24-h ECG monitoring showed supraventricular arrthythmia with short episodes of atrial tachycardia with 2:1 or 3:1 AV block. Bleeding from left auditory canal stopped on day 5 and significant hearing loss in the left ear was diagnosed. Patient was discharged in good general condition. At the follow-up after six weeks, bradycardia 50 bpm with escape nodal rhythm and pauses up to 2,400 ms in 24-h ECG monitoring were observed. Sick sinus syndrome was diagnosed and a dual chamber pacemaker was implanted.

The choice of treatment strategy during primary PCI in this patient was based on the high risk of stent thrombosis (ST) associated with limited use of DAT and potential risk of bleeding in case of surgical procedure. Discontinuation of DAT is a major risk factor of ST, in particular in patients with STEMI and diabetes. Use of EPC-capture stent which showed in preclinical and clinical studies rapid endothelialisation of the struts and decreased prothrombotic potential even in the absence of DAT might be a safe option for such patients. There are reports of short (ten days) or even no DAT after implantation of EPC-capture stents in selected patients with acute coronary syndrome requiring immediate surgery for other conditions (e.g. trauma) with no ST in mid-term follow-up. We decided to use such a stent in this case as well. In addition, the procedure was complex due to the anatomy of the culprit vessel which increased the difficulty of the procedure (anomalous origin of RCA).

This case illustrates the difficulties in decision making during the treatment of a patient with STEMI and contraindications to DAT due to trauma and allergy. In such a patient, use of EPC-capture stents seems to be an optimal strategy to decrease the risk of stent thrombosis.

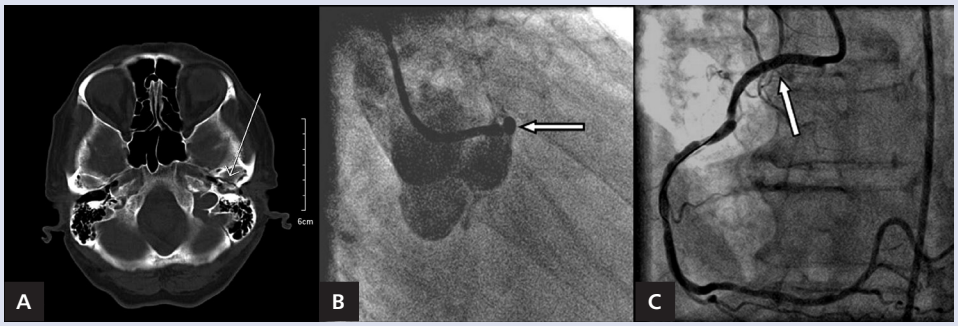

Figure 1. **A.** Head CT scan with transverse fracture of pyramid of left temporal bone; **B, C.** Images from coronarography and angioplasty; **B.** Anomalous origin of right coronary artery from left coronary sinus, catheterisation with Amplatz left catheter (AL2); **C.** After implantation of a 3.0 × 15 mm Genous stent (inflation at 16 atm.)

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