Electrical storm as an unusual presentation of an infective endocarditis after transcatheter aortic valve implantation.

Authors:
T Romero-Delgado 1, A Escudero-Diaz 1, R Bottino 2, A Jeronimo-Baza 1, T Luque 1, C Ferrera 1, FJ Noriega 1, JJ Gomez De Diego 1, I Vilacosta 1, A Viana 1, 1Hospital Clinic San Carlos, Cardiovascular Institute - Madrid - Spain, 2Ospedale Monaldi, Cardiology - Napol - Italy,

Topic(s):
Acute Cardiac Care – CCU, Intensive, and Critical Cardiovascular Care

Citation:
Introduction: Prosthetic valve endocarditis is a rare but increasing complication of transcatheter aortic valve implantation. Complete atrioventricular (AV) block sometimes occurs in patients with infective endocarditis. We report a case of endocarditis after TAVI whose initial presentation was an electrical storm preceded by complete AV block.

Case report: A 63-year-old man presented to the Emergency Department with a 3-day history of shortness of breath, fever and multiple implantable cardioverter defibrillator (ICD) shocks. He had history of non-ischemic dilated cardiomyopathy with severe left ventricular systolic dysfunction and an ICD implantation in 2013 for primary prevention of sudden cardiac death. He also had a transcatheter aortic valve implanted 3 months prior to the present episode. Physical exam revealed evident signs of congestive heart failure, fever and conjunctival petechiae. Laboratory test showed leukocytosis (20.300/mm3) and neutrophilia (97%). The EKG at admission showed a complete atrioventricular block at 36 bpm (pannel A). The ICD interrogation revealed several ICD shocks due to polymorphic ventricular tachycardia (PVT) episodes preceded by complete AV block. An increase in the stimulation rate was needed to end the PVT episodes. The patient was directly admitted to the Acute Cardiac Care Unit (ACCU). He developed mixed cardiogenic and septic shock. Vasopressors infusion and intra-aortic balloon pump implantation was necessary. Infective endocarditis was immediately suspected. Thus, a transthoracic and transesophageal echocardiography (TOE) were performed. TOE images showed an echogenic mass occluding the aortic valve prosthesis (pannel B). Echocardiography features of the mass were compatible with infective vegetation. The mitro-aortic junction was thickened. Severe mitral regurgitation without other signs of endocarditis was also found (pannel C). Intravenous antibiotic therapy with daptomycin and fosfomycin was initiated and the patient was transferred to the operating theatre. Intraoperative findings revealed an enormous vegetation affecting both aortic and mitral valves, which were replaced with biological prosthetic valves. In addition, a small abscess was found in the mitro-aortic junction and surgically repaired. Methicillin-resistant Staphylococcus epidermidis was isolated in blood cultures and valve cultures. After five weeks of antibiotic therapy the patient was discharged asymptomatic and hemodynamically stable. Follow up echocardiography showed no infectious relapse.

Discussion: Prosthetic valve endocarditis is a rare but severe complication of TAVI. Disturbance of the cardiac conduction is an uncommon complication of infective endocarditis, usually associated with paravalular complications. Cardiac conduction abnormalities are associated with worse prognosis and higher mortality and, in such case, urgent surgery is required to repair the damage, because medical treatment alone is insufficient.
Abstract:

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