Direct percutaneous coronary intervention for NSTEMI in a patient with seropositive Wegener’s granulomatosis

Akute Koronarintervention bei einem Patienten mit Nicht-ST-Hebungsinfarkt im Rahmen einer c-ANCA positiven Wegener’schen Granulomatose


Schlüsselwörter  Wegener’sche Granulomatose – Myokardinfarkt – Koronariitis – PTCA – immunsuppressive Therapie

Summary  A case of a 49-year-old man who presented with symptoms of generalized classical Wegener’s granulomatosis with the exceptional complication of acute non-ST-elevation myocardial infarction (NSTEMI) is reported. Coronary arteriography revealed an extensive arteriitis with multilocal stenosis of the left anterior descending coronary artery. The culprit lesion was treated by stent implantation with success while immunosuppressive treatment with cyclophosphamide and prednisolone was continued. Using arteriography, 4 months later we found normal coronary arteries without manifestation of vasculitis. Within 8 months of medical treatment complete remission was achieved and therapy was changed to low-dose methotrexate once a week. Meanwhile medical treatment has been stopped entirely. The patient is in good clinical condition. This case indicates that the adverse event of coronary vasculitis in any patient suffering from primary or secondary vasculitis can occur. Clinically significant myocardial ischemia can occur and can even lead to myocardial infarction.

Key words  Wegener’s granulomatosis – myocardial infarction – coronary vasculitis – PCI – immunosuppressive treatment
Introduction

Wegener’s granulomatosis (WG) is a necrotizing granulomatous inflammation of the small and medium vessels with a predominant affection of the upper and lower respiratory tracts and the kidneys. Clinically significant cardiac involvement in WG is rare. In reviews [7], about 6% of the patients with WG had developed pericarditis, whereas cardiac muscle and vessel involvement were much rarer clinically, occurring in less than 2% of the cases. Acute myocardial infarction is an exceptional complication of WG. We report a case of coronary vasculitis with consecutive non-ST-elevation myocardial infarction (NSTEMI). The literature about other cases with this rare cardiac complication is reviewed and the courses are discussed.

Case report

A 49-year-old male patient (height 168 cm, weight 50 kg) was admitted to our hospital because of a dramatic decline in his general state of health. For the previous three months he had suffered from a sinusitis refractory to antibiotics and an ongoing dry cough. The patient complained about repeating fever and a loss of weight of 7 kg during the last several weeks. Moreover shortly before the admission to hospital an episcleritis of both eyes had occurred. On physical examination the patient appeared acutely ill with pale skin. The heart rhythm was regular, no murmur was noticed, heart rate was 119 bpm and blood pressure 130/85 mm Hg. Auscultation of the lung fields revealed normal breath sounds. Neither lymphadenopathy nor hepatomegaly or splenomegaly were present. No neurological abnormalities were observed.

Blood tests at this point resulted in a hemoglobin 11 g/dl, white blood count 16200/μl and a platelet count 516 000/μl. The erythrocyte sedimentation rate (ESR) had increased to 72 mm/h and the C-reactive protein (CRP) up to 197 mg/l. The c-ANCA/PR3 titer was positive at 1:80 (normal 1:10). We found creatinine, creatine kinase, MB-fraction, troponin t lactate dehydrogenase (LDH) and routine parameters of coagulation within normal limits. Urine testing revealed a slightly raised proteinuria of 163 mg/24 h (normal 120–131 mg). The ECG on admission showed sinus rhythm with normal voltage and AV-conduction time. The X-ray of the chest demonstrated no abnormalities. The mucosa of maxillary and frontal sinus was swollen by chronic inflammation.

The first transthoracic and transesophageal echocardiography showed normal left ventricular function. Heart chambers were normal in size; the aortic and mitral valves were competent and without stenosis. There was no pericardial effusion.

A biopsy of the maxillary sinus was taken on the second hospital day. The tissue showed “classic” lesions of WG including granuloma formation and a necrotizing vasculitis. The patient was immediately started on immunosuppressive therapy with cyclophosphamide (bolus 15 mg/kg i.v./3 weeks) as well as prednisolone (initially 60 mg/d). Three days after admission the patient suddenly complained of strong chest pain. An ECG performed at this time showed negative T-waves in the precordial leads. Moreover positive serum troponin was consistent with non-ST-elevation myocardial infarction (NSTEMI). The transthoracic echocardiogram now revealed an anteroseptal hypokinesia. With ongoing symptoms, cardiac catheterization revealed multilocal stenotic lesions of the left (LCA) and right coronary artery (RCA) (Fig. 1). A significant stenotic lesion in the distal part of the left anterior descending artery (LAD) caused limitation of flow. This localized narrowing was immediately treated with a coronary stent (Fig. 2). In addition to the current medication, 100 mg aspirin as well as 75 mg clopidogrel were given daily. The patient had complete relief of chest pain. His general state of health improved only slowly.

After two months of ongoing high serological parameters of activity (c-ANCA titer still at 1:70), bolus therapy was changed to oral cyclophosphamide according to FAUCI (2 mg/kg/d) combined with highly dosed steroid medication (1 mg/kg/d). After a