Mitral valve endocarditis: an uncommon cause of myocardial infarction

Embolic Myokardinfarkt bei Mitralklappenendokarditis: erfolgreiche perkutane Koronarintervention


Beim mehrfachen auswärtigen Untersuchungen wegen fiebriger Allgemeinsymptomatik wurde die Diagnose nicht gestellt, wohl weil nicht an eine subakute bakterielle Endokarditis gedacht wurde. Erst die lebensbedrohliche Komplikation einer Koronararterienembolie führte schließlich zur richtigen Diagnose. Dieser Fall erinnert eindrücklich daran, dass die Diagnosestellung einer Endokarditis schwierig sein kann und in erster Linie auf deren Einschluss in die Differentialdiagnose basiert. Darüber hinaus liefert er ein Beispiel für eine erfolgreiche Akutrekanalisation bei septisch-embolischem Koronararterienverschluss durch PTCA.

Schlüsselwörter Bakterielle Endokarditis – Koronararterielle Embolie – Perkutane transluminale Koronarangioplastie – Mitralklappensuffizienz – Mitralklappenersatz

Summary A 39 year old woman presented with acute anterior myocardial infarction. At coronary angiography the distal left anterior descending coronary artery (LAD) was occluded despite otherwise normal coronary arteries. The LAD was successfully recanalized using PTCA. Subsequently, a transesophageal echocardiogram revealed vegetations and a significant incompetence of the mitral valve. Blood cultures identified enterococcus faecalis. Despite intravenous antibiotic treatment guided by sensitivity testing, the patient ultimately required elective mitral valve replacement. During a prior outpatient diagnostic work-up of fever/malaise, the diagnosis of infective endocarditis was not made.

This case conveys two main messages: 1) because the history and physical sings of bacterial endocarditis can be subtle or non-specific, the first step to diagnose infective endocarditis is to include it in the differential diagnosis. 2) Percutaneous coronary intervention is an effective treatment of septic embolic occlusion of a major coronary artery.

Key words Bacterial endocarditis – coronary arterial embolism – percutaneous cardiac intervention – mitral incompetence – mitral valve replacement

CASE REPORT

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Introduction

One of the rare causes of myocardial infarction in the presence of normal coronary arteries is arterial embolism. In most cases coronary embolism is inferred from circumstantial evidence. Here we report an unusual presentation of myocardial infarction in a young woman without atherosclerotic coronary artery disease who presented with an occluded distal left anterior descending artery (LAD), which could later be attributed to arterial embolism in the setting of bacterial endocarditis. Although bacterial endocarditis is a generally well-recognized disease, its diagnosis can be challenging because of non-specific or subtle clinical symptoms and signs. Therefore it is important to consider this disease in the differential diagnosis.

Case report

A 39 year old woman visiting from eastern Europe presented with acute epigastric pain. The abdominal examination was unremarkable but the ECG showed ST-segment elevation in leads I and V2 to V5 consistent with acute anterior myocardial infarction. Cardiac troponin I was 6.5 μg/l (normal <0.5 μg/l). Immediate coronary angiography demonstrated an occluded distal LAD with otherwise normal coronary arteries (Fig. 1). The LAD was recanalized using percutaneous transluminal coronary angioplasty (PTCA). After the PTCA the patient’s symptoms subsided but the subsequent clinical course was remarkable with low-grade fever and increased markers of inflammation (WBC 22.80/nl, C-reactive protein 134.1 mg/l) which had increased from admission (WBC 16.40/nl, C-reactive protein 55.5 mg/l) despite successful treatment of the acute coronary syndrome. This prompted a repeat clinical evaluation of the patient which showed a holosystolic murmur suggestive of mitral valve incompetence. A detailed history revealed a weight loss of 6 kg over the preceding three months, secondary amenorrhea for two months and intermittent fever. An outpatient workup at different institutions was reported negative. Echocardiography confirmed the clinical diagnosis of mitral incompetence. Because of suspected bacterial endocarditis multiple blood cultures were taken immediately and transesophageal echocardiography was performed which confirmed the clinical diagnosis by demonstrating two vegetations on the posterior leaflet of the mitral valve. The aortic valve was intact. Abdominal ultrasound examination showed splenomegaly without other abnormalities. Urine analysis was unremarkable and there were no cutaneous stigmata of microembolization. While awaiting blood culture results, calculated antibiotic therapy was instituted. As the patient had no risk factors for staphylococcal endocarditis, the calculated therapy was chosen to cover bacteria from dental and intestinal/genitourinary foci. Therefore, ampicillin (12 g/day) and gentamicin (180 mg/day) were administered intravenously. Subsequently, enterococcus faecalis was identified in all blood cultures with an identical resistance pattern of all isolates. A thorough

Fig. 1 Occlusion of the distal LAD (arrow), in LAO projection