Title: An acute coronary syndrome reveals a takayasu's arteritis in a young female

Background: Takayasu's arteritis is an uncommon inflammatory disease with usually a good prognosis. However, sometimes the evolution can be fatal, essentially when coronary arteries are involved.

Case presentation: A 30 years old well being young woman, with no cardiovascular risk factors and no history of angina pectoris, is admitted for new onset of a sudden syncope. The patient is hemodynamicaly stable with blood pressure at 90/60mmHg and good pulse at upper limbs.

Her ECG shows a paroxysmal 3rd atrio-ventricular block, with myocardial infarction sequelae in the inferior territory. Biology finds high level of troponins, a C-reactive protein (CRP) at 48mg/L and erythrocyte sedimentation rate (ESR) at 102 mm the 1st hour. A coronarography is then performed, showing coronary ectasia with a very tight stenosis of the ostial left main coronary artery (LMCA), a tight stenosis of the middle left anterior descending coronary artery (LAD) and a thrombotic occlusion of the right coronary artery (RCA). The angioplasty of the RCA failed up and a coronary artery bypass graft (CABG) is indicated.

Regarding the significant coronary lesions, the absence of risk factors and the high level of CRP and ESR, a systemic vasculitis is suspected and further investigations are made. An echo-doppler and a CT-scan of supra-aortic trunks, upper limbs and legs vessels are made, finding out thickning and localised tight stenosis of upper limbs vessels. Even though neither the ACR criteria nor the Ishikawa's modified ones were fullfilled (2 criteria for ACR and only 3 minors for ishikawa's), the patient is diagnosed with TA and corticosteroids are started. Unfortunatly, the patient passed away suddenly at home few weeks later.

Discussion: Coronary arteries involvement in TA is associated with a poor prognosis and can be life threatening. Death is mainly due to heart failure and myocardial infarction, sudden cardiac death is rarely reported. Three main pathological features of coronary arteries are described in TA: stenosis or occlusion of the coronary ostia and the proximal segments of the coronary arteries; diffuse or focal coronary arteritis and coronary aneurysms. The optimal revascularization method for coronary involvement has not been determined yet. Indeed, revascularizations are often unsuccessful, particularly when the inflammatory disease is not under satisfactory control. Even though surgery should be scheduled only when the inflammatory status is medically controlled, treatment may not be deferred in patients with unstable angina. In the latter scenario, the use of drug-eluting stents has been advocated as a bridge to completion of anti-inflammatory therapy. Recent publications link the use of drug-eluting stents in patients with coronary heart disease to increased rates of arterial reocclusion and mortality, but selective use of drug-eluting stents limited to patients with an uncontrolled inflammatory TA awaiting revascularization may be a proper bridge until such control is obtained, thus possibly improving patency rates of future definite vascular interventions. For surgical revascularization, three main ways are described : coronary ostioplasty, transaortic coronary ostial endoarterectomy, and CABG. Nowadays, CABG is the most commonly adopted surgical intervention, ensuring the relief of symptoms and acceptable freedom from cardiovascular adverse events. The debate is still open on the best choice of conduits to be used. Saphenous vein grafts have the advantage of not being directly involved by the inflammatory process, but proximal anastomoses on the aorta can be challenging, due to thickening of the inflamed wall, and long-term patency can be compromised by progression of aortic disease.

Conclusion: There is a clear need to improve the outcomes of current therapeutic approaches to patients with TA involving coronary arteries. Medical, interventional and surgical approaches must act synergistically in order to ensure a stable and lasting remission of the disease.

