Chest pain- common presentation, uncommon cause!

A Rao[1], E Rodrigues[2]

[1] Cardio Thoracic Centre, Liverpool
[2] University Hospital Aintree, Liverpool

Dr A Rao, Specialist Registrar Cardiology, CTC Liverpool
Dr E Rodrigues, Consultant Cardiologist, University hospital Aintree

Introduction

Spontaneous coronary artery dissection (SCAD) is an infrequent cause of acute myocardial ischemia manifesting clinically as myocardial infarction, angina, cardiogenic shock and sudden cardiac death (Verma PK et al, 2004).
It should be considered in atypical patients with cardiac chest pain.

Case Report

A 34-year old woman presented to the accident and emergency department with an episode of central chest pain radiating to her arm at rest. The pain resolved with oxygen and buccal nitrate.
She had been under emotional stress but had no history of physical exertion or trauma. She had no significant past medical history and no cardiovascular risk factors

apart from being a smoker. She denied the use of recreational drugs and was not on the oral contraceptive pill. Tests for collagen vascular disease were negative. Systemic examination was essentially unremarkable.

Investigations

A12-lead electrocardiogram (ECG) showed non-specific T wave changes. She was admitted and treated for unstable angina with Aspirin, β blocker and low molecular weight heparin.
The following day she developed further chest pain associated with ST elevation in infero-lateral leads (Fig1.) and was thrombolysed with good resolution of ST segments.

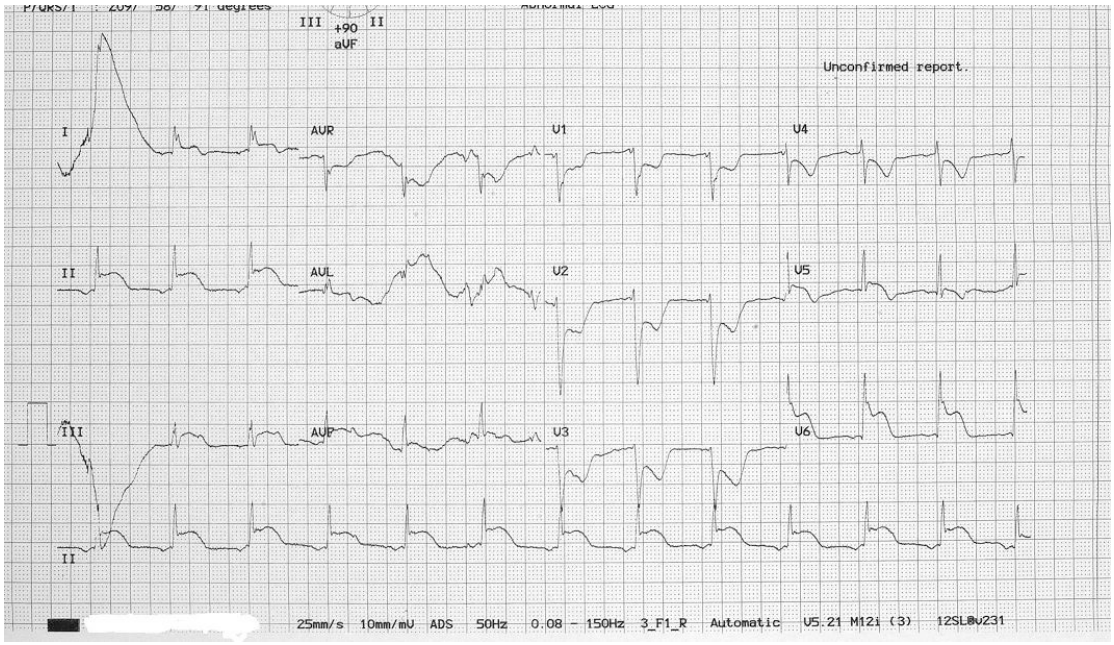

Figure One: ECG

Her cardiac enzymes were elevated with a peak creatinine kinase (CK) of 9511 and a Troponin T (TnT) of 15.06.
Her echocardiogram showed extensive antero-apical hypokinesia.
She made an uneventful recovery and was discharged home.
She remained asymptomatic at 6 weeks and managed 12 mins on a modified Bruce protocol (7.4 mets, 76%of target heart rate reached) with no significant ST changes.
A routine coronary angiogram at 8 weeks revealed spontaneous dissection of the left anterior descending artery (Fig 2).

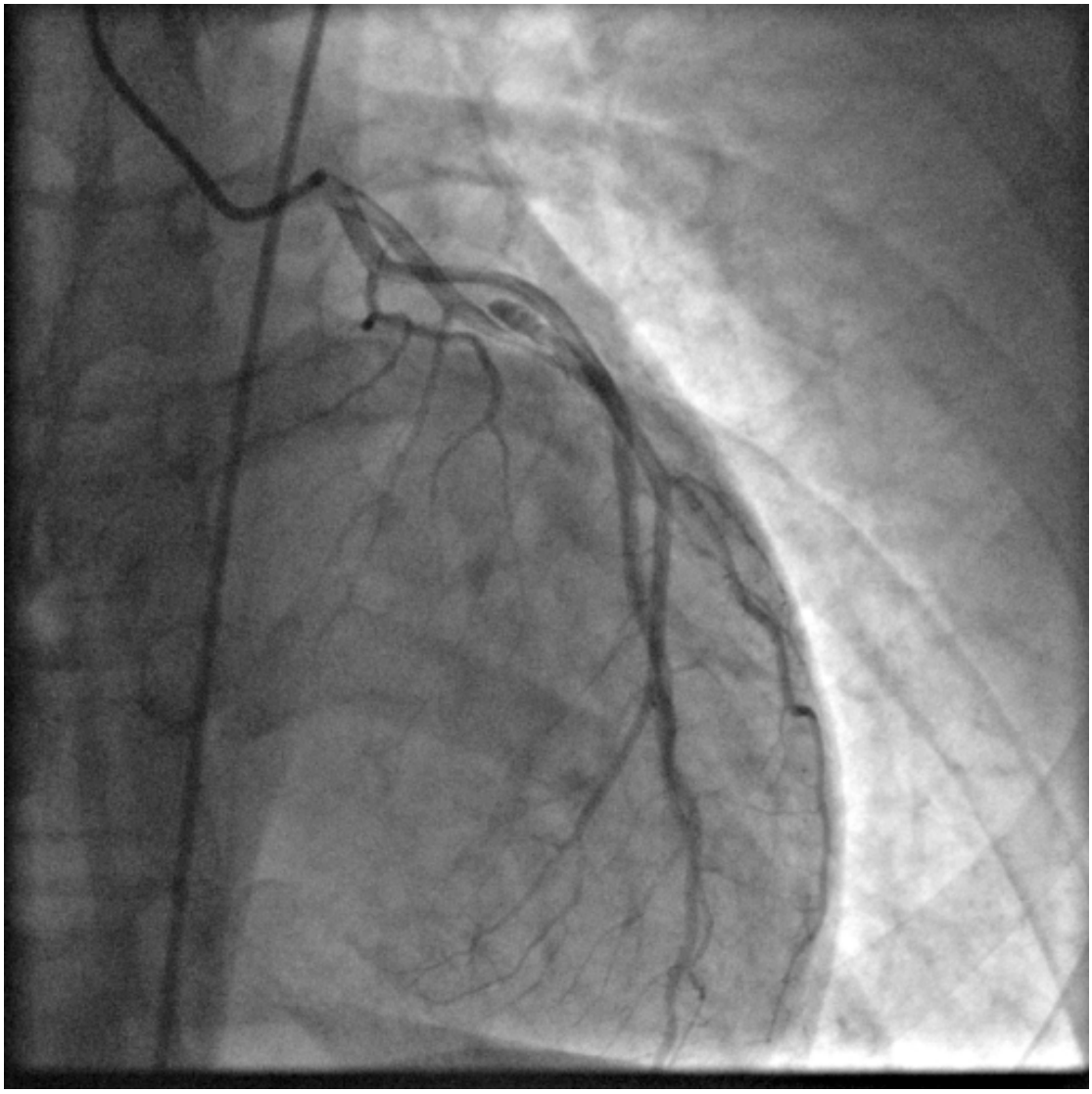

Figure Two: Routine coronary angiogram at 8 weeks.

A follow-up coronary angiogram at 6 months showed the dissection to be unchanged. The patient remains well.

Discussion

Our patient had an acute myocardial infarction as a result of spontaneous coronary artery dissection (SCAD) of the left anterior descending artery (LAD). A trans-mural haematoma occurring between the adventitial layer and the media of the vessel wall, occludes the true lumen, restricting blood flow and resulting in myocardial ischemia (Basso C et al, 1996).
Intravenous thrombolysis in her case appears to have been beneficial, presumably by lysing the clot in the false lumen with consequent relief of compression in the true lumen, however, thrombolytic therapy has been associated with extension of dissection and worsening of clinical condition (Buys EM et al, 1994**)**.
The LAD artery is the most frequently involve vessel (66%) followed by the right coronary artery (RCA) and the left circumflex (LCx) (Verma PK et al, 2004). The aetiology of SCAD remains unknown, but 3 groups of patients have been identified: those associated with atherosclerotic coronary artery disease, women in the peri-

partum period, and an idiopathic group without identifiable predisposing factors. An association with oral contraceptive use (Azam MN, et al 1995) and haemodynamic factors have been implicated in cases reported following physical exertion (Sherrid MV et al, 1995). The outlook for those who survive the acute event is good with a mortality of 18% in a mean follow-up of 41 months (De Maio SJ et al,1989).The prognosis is governed by extent of coronary artery involvement. Aggressive medical therapy, intra-coronary stenting and surgical intervention (mostly CABG) have been described as management strategies tailored to the individual case. The majority of these patients remain asymptomatic on follow-up, irrespective of their initial management (Jobic Y et al,1993)).

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