Ruptured aortic dissection into the left atrium which presented as congestive heart failure and was diagnosed by transoesophageal echocardiography

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Abstract
A 72 year old man was admitted with severe dyspnoea. Ten days before he had had intense thoracic pain with loss of consciousness that was followed by increased dyspnoea. A continuous murmur was heard in the precordial and the left infrascapular regions. Lung auscultation showed stasis over the lower half of both lungs. Transthoracic echocardiography showed a bicuspid aortic valve and a dissection of the proximal aorta, which was considerably enlarged. Transoesophageal echocardiography confirmed dissection of the proximal aorta and showed a communication from the false lumen of the aortic dissection to the left atrium; and colour flow Doppler showed a continuous shunt to the left atrium. After transoesophageal echocardiography the patient had emergency surgical repair, which was successful. He had no complications in the post-operative period.

(Br Heart J 1994; 72: 400-402)

Transoesophageal echocardiography is the best method of diagnosing aortic dissection of the thoracic aorta in the emergency room.\(^1\)\(^2\) Ruptured aortic dissection into a cardiac chamber is rare. Cases of rupture into the right atrium have been described; but rupture into the left atrium has been described only as an incidental finding at necropsy and in a patient in whom an intimal flap in the left atrium was found by transthoracic cross sectional echocardiography.\(^3\)\(^4\) This patient died soon after angiography and before surgery could be performed.\(^5\)

We describe a case of ruptured aortic dissection into the left atrium. This patient presented with the clinical signs typical of this disease and all the details needed for early successful operation were supplied by transoesophageal echocardiography.

Case report
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Ruptured aortic dissection into the left atrium which presented as congestive heart failure and was diagnosed by transoesophageal echocardiography.

Figure 1 Transverse transoesophageal echocardiographic view showing aortic dissection of the proximal aorta and discontinuity (arrow) between the false lumen of the aortic dissection and the left atrium (LA, left atrium; BAV, bicuspid aortic valve; IF, intimal flap; FL, false lumen).

Discussion
This patient had no history of systemic arterial hypertension and he had no signs of Marfan’s syndrome. Transoesophageal echocardiography showed an almost normal descending aorta without atherosclerotic plaques. An uncommon association between aortic dissection caused by cystic media necrosis and bicuspid aortic valves has been described in patients without the overt clinical signs of Marfan’s syndrome. Though we cannot rule out a form fruste of Marfan’s syndrome in our patient, we think it more likely that cystic media necrosis caused the aortic dissection.

The clinical features in our patient are compatible with a ruptured aneurysm of the sinus of Valsalva into the left atrium—that is, congestive heart failure with a continuous murmur in the left infrascapular area. The intense pain preceding the symptoms of congestive heart failure, however, were clearly caused by dissection of the proximal aorta. Transoesophageal echocardiography showed the bicuspid aortic valve without significant stenosis, no involvement of the coronary arteries, an intimal tear just above the origin of the coronary arteries, a communication rupture elsewhere and the pericardial space was free of thrombus. The aortic valve and coronary arteries were left in place and after the intimal tear and the communication between the aorta and the left atrium were closed a Dacron prosthesis was implanted in the proximal aorta. The patient made an uncomplicated recovery. A follow up examination by transoesophageal echocardiography showed no residual dissection and no communication between the aorta and the heart chambers.
between the false lumen of the aortic dissection and the left atrium, and an aortic dissection limited to the proximal aorta. This information led to immediate and successful surgical repair.