EMERGENCY CASEBOOKS

Mitral regurgitation presenting as localised right middle lobe pulmonary oedema

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Cardiogenic pulmonary oedema is a common complication of severe mitral regurgitation and usually presents as a typical butterfly pattern on chest radiography. Patients with severe mitral regurgitation presenting with pulmonary oedema localised to the right upper lobe have previously been reported,¹⁻⁴ usually as a complication of an acute myocardial infarction (AMI). We report an unusual case of severe mitral regurgitation presenting with localised right middle lobe oedema.

A 54 year old man presented complaining of progressive chest tightness and dyspnoea over a three day period. Physical examination revealed crackles over the right lung field and a grade 3/6 systolic murmur. Chest radiography showed a right parahilar pulmonary consolidation (fig 1). Computed tomography of the chest with intravenous ionic radiocontrast media (RCM), performed to rule out a neoplasm, showed patchy consolidation with an air bronchogram in the right middle lobe (fig 2). Soon after intravenous injection of RCM, he developed severe shortness of breath. Repeat chest radiography revealed frank pulmonary oedema. Two dimensional echocardiography performed revealed severe mitral regurgitation. He was treated for acute pulmonary oedema and admitted to the intensive care unit. A cardiac catheterisation study revealed normal coronary arteries and severe mitral regurgitation with a jet to the orifice of the right pulmonary vein. A valvuloplasty was recommended but

Figure 1 Initial chest posteroanterior roentgenogram showing poorly circumscribed consolidation in the parahilar region of the right lung.

Figure 2 Computed tomography of the chest showing patchy consolidation with an air bronchogram in right middle lung field.

the patient refused. He is presently receiving regular follow up in the outpatient department.

Localised right upper lobe oedema is thought to be due to a regurgitation jet targeted at the orifice of the right upper pulmonary vein increasing the intravenous pressure and accentuating the Starling forces at the capillary level.¹ The right middle lobe may also be involved because the right middle pulmonary vein frequently empties into the left atrium in a joint venous confluent, together with the superior right pulmonary vein.³ Unlike other reports, our patient proved not to have an AMI, making his isolated right middle lobe oedema even more unusual. The development of frank pulmonary oedema after the injection of RCM is likely due to the osmotic effect, thereby increasing the loading on the left ventricle. While disorders such as fungal infections, aspiration pneumonia, tuberculosis, lymphoma, alveolar cell carcinoma, or sarcoidosis can all produce nodular lung consolidation,⁵ in patients with localised right upper or middle lobe consolidation mitral regurgitation should be ruled out before proceeding to contrast computed tomography of the chest.

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- 1 Gurney JW, Goodman LR. Pulmonary edema localized in the right upper lobe accompanying mitral regurgitation. *Radiology* 1989;171:397-9.
- 2 Grenon H, Bilodeau S. Pulmonary edema of the right upper lobe associated with acute mitral regurgitation. *Can Assoc Radiol J* 1994;45:97-100.
- 3 Alarcon JJ, Guembe P, Miguel ED, *et al.* Localized right upper lobe edema. *Chest* 1995;107:274-6.
- 4 Schnyder PA, Sarraj AM, Duvoisin BE, *et al.* Pulmonary edema associated with mitral regurgitation: prevalence of predominant involvement of the right upper lobe. *AJR* 1993;161:33-6.
- 5 Case records of the Massachusetts General Hospital weekly clinicopathological exercises. *N Engl J Med* 1995;332:1566-72.

Traumatic pseudoaneurysm of the superficial temporal artery

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A 25 year old man presented to the accident and emergency department with a left preauricular mass (fig 1). During an altercation four weeks previously he had received a single kick to his left temple. Although symptom free, he was concerned that a swelling was still present despite resolution of associated bruising. Physical examination displayed a 1cm pulsatile mass, anterior to the left ear, which diminished when the superficial temporal artery (STA) was compressed proximally. A diagnosis of aneurysm of the STA secondary to trauma was made. The aneurysm was ligated and resected (fig 2) and the patient recovered without complication. Histopathological examination revealed that the artery was focally dilated and its intima incomplete—hence a false aneurysm or pseudoaneurysm by definition.

Traumatic STA pseudoaneurysms are rare. Over 80% occur in men, 75% are due to blunt trauma, and most patients present within two to six weeks of injury.¹ In our opinion the diagnosis can be made from a thorough history and examination. Arteriography, duplex ultrasound, and contrast computed tomography have been shown to aid diagnosis in complicated cases. Operative treatment is indicated to prevent rupture from subsequent trauma and to correct the cosmetic defect.

Although rare, all physicians who treat patients with head and facial trauma should be aware of traumatic pseudoaneurysms of the STA.

- 1 Peick AL, Nichols WK, Curtis JJ, *et al.* Aneurysms and pseudoaneurysms of the superficial temporal artery caused by trauma. *J Vasc Surg* 1988;8:606-10.

Figure 1 Preauricular mass.

Figure 2 Ligated and resected aneurysm.

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