

CLINICAL MEMORANDA.

AORTIC ANEURYSM SIMULATING MITRAL AND AORTIC VALVULAR DISEASE; Report of a Case.

THOMAS N. FRASER, M.D., F.R.C.P., F.R.F.P.S.G
from Western Infirmary, Glasgow.

Owing to the great advances which have taken place during the past decade in the methods of diagnosis and treatment of heart disease, the outlook today for the cardiac patient is very much brighter than it was ten years ago. It is now a relatively simple matter to detect the presence of mitral stenosis and to determine whether there is any associated incompetence of the valve. The following case is of interest in that it presented some unusual features, and the diagnosis was not established during the patient's lifetime.

A man, age 39, was admitted to hospital on 22nd January, 1945, having had a large haemoptysis during a bout of coughing on the previous night. For nine years he had been virtually an invalid and unable to continue with his work as a joiner owing to extreme breathlessness on exertion and palpitation. For eighteen months he had been subject to attacks of precordial pain at rest and on exertion, and cough and spit, the latter being streaked with blood on several occasions. For several months he had had difficulty in swallowing solid food, which appeared to stick about the level of the third rib. At no time had there been any ankle or sacral oedema. There was a previous history of two attacks of rheumatic fever at the age of 13 and 31. No venereal disease was admitted.

He was in a shocked condition, and was very dyspnoeic and slightly cyanosed. There was no overfilling of the neck veins, oedema or hepatic enlargement. Diffuse pulsation of the front of the chest was present. No thrills or 'diastolic shock' were felt. On percussion, 'cardiac dullness' extended five inches to the left and three inches to the right of the mid-sternal line. Both heart sounds were heard at all areas and were soft. There was a short systolic murmur at the apex, and a loud and harsh murmur, filling the whole of diastole, was heard at all cardiac areas, being loudest at the lower end of the sternum and at the apex. B.P. 160/64. A well marked collapsing pulse was felt; the rhythm was regular. Numerous rales were heard throughout both lungs, particularly at the left base. The blood W.R. was found to be positive.

In view of the patient's poor condition it was only possible to have a portable X-ray film of his chest taken on admission. The radiologist reported gross cardiac dilatation with prominence of the pulmonary conus, the outline suggesting combined mitral and aortic lesions, with congestion in the left lung. At a later date oblique views with a barium swallow were done (Fig. 1), when it was found that 'the backward enlargement of the heart' was causing pressure on the oesophagus and producing some dilatation of the latter above the site of the pressure. The configuration of the heart was again reported as being consistent with a combined lesion (Fig. 2). At no time was he fit for screening.

The patient was treated as a case of rheumatic valvular disease with early cardiac failure. The luetic infection was thought to be incidental, but anti-specific treatment was also given. After an initial response to therapy the subsequent course of his illness was one of gradual deterioration, with increasing cardiac failure, and the patient died on 19th September, 1945. Permission for a post mortem examination was granted.

Necropsy. The heart and lungs were removed en masse. A large saccular aneurysm, arising from the anterior aspect of the ascending aorta immediately distal to the aortic valve, was found overlying and compressing the whole of the anterior surface of the right ventricle and the pulmonary conus. It was adherent to the sternum but had not eroded it. The communication between the aorta and the aneurysm was through an opening 6.5×2.5 cm. A large part of the sac, which was 15 cm. in diameter, was filled with firm yellowish laminated clot which weighed $1\frac{1}{4}$ lbs. There was no hypertrophy or enlargement of the left ventricle. The wall of the right ventricle was moderately hypertrophied and there was slight dilatation of the chamber. Both auricles were normal in size and appearance. The aortic valve was healthy and competent, and the mitral valve was normal in every respect. The tricuspid and pulmonary valves were also intact. The aorta showed the typical

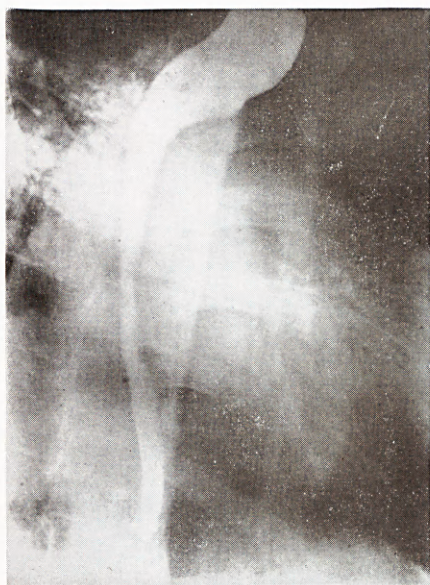


Fig. 1. Barium swallow showing compression of oesophagus by backward displacement of heart with dilatation above site of pressure.

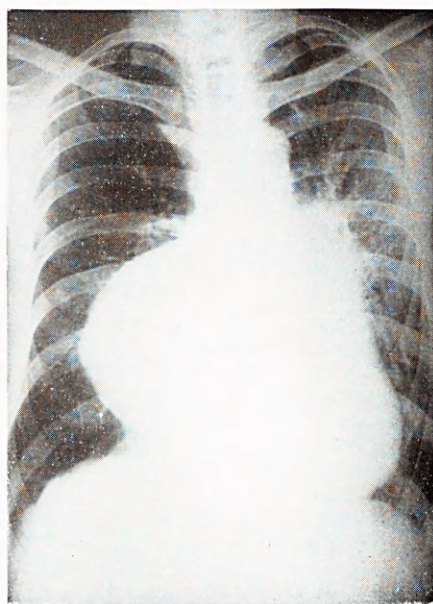


Fig. 2. X-ray film showing apparent aneurysmal dilatation of the left auricle, enlargement of the left ventricle and pulmonary conus, the appearances suggesting combined mitral and aortic valvular lesions.

appearances of syphilitic disease. The right coronary artery arose within the aneurysm, 1.5 cm. from the orifice of the sac, and the left at its usual site. Both lungs were congested, especially the left. Apart from congestive changes, the abdominal organs were normal.

The diagnosis of rheumatic mitral stenosis and aortic incompetence was made on the basis of the previous history of two typical attacks of rheumatic fever, and on the clinical findings and the radiological appearances. In connection with the latter, it must be stressed that the patient's condition throughout his sojourn in hospital was such as to preclude any extensive examination.

In retrospect, it is not difficult to understand how an erroneous diagnosis was made in this case. The symptomatology could fit in with either rheumatic valvular disease or with aortic aneurysm. The increase in the 'cardiac dullness' to the right and left of the sternum, taken in conjunction with the findings on auscultation, was thought to be due to aneurysmal dilatation of the left auricle from mitral stenosis, and hypertrophy and dilatation of the left ventricle from aortic incompetence respectively. The radiological appearances tended to confirm this supposition, the A-P view showing what seemed to be an enlarged left auricle, a well marked pulmonary conus and enlargement of the left ventricle. The oblique view, which was of poor quality, due to the exhausted state of the patient, showed compression of the oesophagus by what was considered to be the enlarged left auricle. As the autopsy revealed later, the interpretation of the clinical and radiological findings was fallacious. The apparent enlargement of the left auricle and left ventricle, and the prominent pulmonary conus had been simulated by the aneurysm, which completely obscured the heart from in front, and the indentation of the oesophagus was due to backward displacement of the heart by the aneurysm.

Some interesting and rather unusual features were revealed at autopsy. An aneurysm arising from the ascending aorta generally lies at a higher level in the right hemithorax, and as it enlarges tends to do so towards the right and not, as in this case, downwards and to the left. The well marked collapsing pulse was attributed to an aortic leak, but this was incorrect as the aortic valve was healthy and intact, a finding which was rather surprising in view of the fact that the opening of the aneurysm was immediately distal to the valve. The large pulse pressure must have been due to the ebb and flow of blood in the aneurysm itself. Finally, a more localized pulsation over the aneurysm might have been expected, but was absent on account of the large amount of laminated clot in it.

Acknowledgements

My thanks are due to Dr. J. H. Wright for helpful criticism, to Dr. P. S. Macfarlane for the necropsy report, and to Mr. Gabriel Donald for all the photographic reproductions.