

two blind cul-de-sacs, the whole lined by smooth membrane.

The left auricle was much dilated and its walls thin. The mitral orifice was much contracted, the valves thickened and adherent, forming a funnel the apex of which formed a narrow oval slit about half an inch in length. The edges of the slit were approximated by slight pressure, and were doubtless closed with each systole of the ventricle. The cavity of the left ventricle was small and its walls thin. The thickening of the endocardium extended from the mitral segment of the aortic valves, which were slightly affected also, but competent.

The liver was "nutmeg," and very fatty, but not enlarged. Kidneys showed little change. In the uterus the placenta was still adherent. There was a fairly large clot in the vagina.

The cause of death was probably due to the sudden emptying of the uterus and the slight uterine hemorrhage, both combining to deprive the general circulation of more blood than could in her condition be spared.

Remarks: This case is fairly typical of the general course of mitral stenosis. The clearest conception of the history of a case of mitral stenosis is obtained by following Broadbent's plan of dividing the history into three stages, as given in his Harveian lectures (*Brit. Med. Jour.*, vol. 1, 1884, page 449). "In the first stage there are the presystolic murmur and thrill with more or less accentuation of the pulmonic second sound; its distinguishing mark is the presence of the second sound at, and to the left of, the apex." An apex murmur preceding the cardiac impulse, followed by two heart sounds is almost pathognomic. At this stage there are few if any symptoms. "The second stage is marked by the disappearance of the second sound from the apex." At the same time, the first sound has gradually undergone a complete change in character and has become short, sharp, and loud, resembling an exaggerated second sound. Now, mistakes in diagnosis are easily made; the presystolic murmur, followed by a short, sharp, first sound is taken to be a systolic murmur followed by a loud second sound, and the disease is supposed to be mitral insufficiency."

This accurately describes the condition in the above case. Very few of the works refer to the

disappearance of the second sound at the apex, yet it is a point of great importance not only in diagnosis but also in prognosis, which is much more grave in stenosis than in insufficiency of the mitral valves.

Normally, the second sound is always to be heard at the apex and to the left of it, and its disappearance in mitral stenosis is owing, (1) to weakness of the aortic second sound on account of the insufficient distension of the aorta by each systole of the left ventricle, and (2) to the enlarged right ventricle overlapping the left and preventing its coming into contact with the chest wall, thus the aortic sound is not conducted through to the ear.

In Broadbent's third stage the murmur disappears, and only the short, sharp, first sound is heard at the apex. In the case detailed above this stage was not fully developed. The thrill disappeared, the murmur lost much of its harshness, and on one or two occasions was not to be heard but it did not disappear for long. This is probably due to the fact that the termination was hurried by the pregnancy, without which life would, probably have been prolonged, it may be, for a year or two at least.

This is to be noted also, that the murmur in this case, even when softest, always terminated abruptly, and never had the prolonged character that characterizes a regurgitant murmur.

## Selections.

**RUPTURE OF THE HEART.**—The man had been found dead on the railway with several fractures of the limbs and a scalp wound, but no fracture of the skull. No external sign or trace of injury to the thorax in front. A large portion of the sternum was detached from the rest of the skeleton and thrust down on the underlying viscera, all the costal cartilages being broken as well from the 2nd to the 8th. The pericardium and the pleura were found full of blood. At the apex of the right ventricle there was a large rupture; another great rent into the right auricle. There was no laceration, neither was there any blood-clot in the heart, nor any rupture of the valves or of the chordæ tendineæ. In the auricular appendix and the muscoli pectinati there were a couple of small ruptures. In the back of the heart at the left auricle, in the