

term of aortic incompetency, this is the method by which the heart's action becomes arrested, and such may, and is apt to, occur before there is any dilatation.

In the face of these facts clearly an aortic lesion producing regurgitation is one of the most serious.

I may omit any special discussion of aortic stenosis. We understand by stenosis adhesions of the various segments of the valves, so that a diaphragm more or less annular exists at the junction of the aorta and ventricle, and this diaphragm contracting continues to reduce the size of the central aperture, and producing great obstruction to the emptying of the ventricle. So far as I know aortic stenosis, unaccompanied by lesion of other valve or valves of the heart, is a rare condition. I cannot remember a case where the *post mortem* examination proved its single existence. The ordinary case of aortic stenosis is but a part of the old lesion of endocarditis, and is generally associated with extensive disease of the other orifices.

An aortic obstructive murmur, without evidence of enlargement of the heart, and unaccompanied by the physical signs of regurgitation may be considered as one of the least ominous of endocardial murmurs.

The commonest lesion of the mitral orifice is that which leads to mitral regurgitation. There are few cases of persistent mitral murmur (not hæmic) that are not ultimately followed by hypertrophy of auricle and ventricle. This hypertrophy is, however, usually slow in its occurrence, and providing the blood vessels be in a healthy state, conservative in its tendencies. Moderate hypertrophy from such cause in one whose occupation does not strongly predispose him to cardiac excitement, is not a very serious lesion. In those who are forced to perform laborious work the hypertrophy will generally become rapidly increased, and be followed by dilatation.

The serious import of such lesions can generally be estimated by the extent of cardiac dulness, the discomfort which the heart's action produces, the tendency to cerebral anæmia, and the state of the vessels. In these lesions that which is to be dreaded is not the existing hypertrophy but the subsequent dilatation, evidence

of which is to be found in œdema of feet and lungs.

Cardiac apnoea when severe, and it is often very severe, in these cases is ominous, the patient becoming breathless upon increased exertion, so that walking upstairs, or performing any continuous effort, seriously distresses him. His breathing is of a panting, irregular nature, but the chest is capable of being perfectly and completely filled with air. There is an alteration between the circulation through the lungs and the heart-beat, and the occasional arrest in the breathing serves to restore the respiratory and cardiac rhythm. I would mention this condition of the respiratory system more particularly because it is always a grave sign and may exist without any other evidence of serious cardiac lesion.

Another serious if not fatal symptom seen often in mitral regurgitation is Cheyne-Stokes respiration, or the ascending and descending respiration, where a deep gasping respiratory effort is followed by a series of shallow and graded respirations, ultimately ending in the momentary arrest of the respiratory act. Dr. Fagge ascribes this condition as due to an altered vascular state of the medulla, and regards it as a fatal sign.

Such respiratory symptoms are serious in a two-fold nature. They directly irritate the heart, and they also interfere with the patient's rest, and in that way add a degree of mental irritation most disastrous in its effects upon the diseased organ.

Mitral stenosis is always a disease of slow progress, and one whose duration is to be counted in years. In its early period the hypertrophy is almost wholly limited to the left auricle, and the only general symptom is cardiac apnoea which attends upon the obstruction to the emptying of the pulmonary veins. This together with a proesystolic or post diastolic murmur and peculiar thrill preceding the systole of the heart are the main symptoms.

Here we have a disease where the murmur is out of all proportion to the gravity of the case, for it is a known fact that in those who are able to lead a comparatively quiet life, or whose occupations do not require of them extreme muscular effort, mitral stenosis may exist for a considerable time without causing much incon-