

tion of a white or red infarct, but is most commonly caused by a gradual narrowing of a coronary branch by obliterative endarteritis. This may be the same process as from an infarct, only on a microscopical scale.

If the patch of fibrous myocarditis is of considerable extent and affecting the whole or nearly the whole thickness of the wall, we may have as a result *aneurism of the heart*.

In pyæmia the coronary arteries may be blocked by septic emboli and then the infarcts are of the nature of miliary abscesses. These may not cause any disturbances, but when large may rupture into the ventricle or pericardium.

Rupture of the heart is divided into (1) traumate (2) spontaneous. Spontaneous rupture of the heart was observed by Harvey, and may occur in any chamber, is most frequent in the left ventricle, rare in the right ventricle, and still more rare in the auricles. The majority of those affected are males and over sixty years of age.

Rupture of the heart usually takes place during exertion, but sometimes occurs during sleep. Other immediate causes are fright, labor, tetanus, epilepsy, copulation. George II. of England died of rupture of the heart due to straining at stool, and Philip V. of Spain died of rupture of the heart on hearing of the downfall of Piacenza.

That spontaneous rupture may occur only in a diseased heart was recognized by Morgagni. These diseases are, abscess, hyaline and amyloid degeneration, fatty degeneration, aneurism of the wall, new growths, echinococci, but while these are of occasional or possible causes, the majority of cases may be traced back etiologically to the degeneration called arterio sclerosis and its resulting changes. These changes are most frequent in the left coronary artery and its anterior branch.

The rupture is usually sudden and complete, but ruptures partially through the wall may take place causing very severe pain due to separation and laceration of the muscle fibers. This separation and laceration may be in different directions and different planes, thus giving rise to a kind of dissecting rupture, taking possibly days for its passage through the wall of cavity. At other times the progress in one particular spot may not extend all the way through the wall, but commence anew at a more favorable situation and rapidly tear asunder the tissues. From this rupture the blood is poured out into the pericardium; if very slowly through a small external opening the blood may clot in successive layers on the surface of the heart and thrombi form in and around the rupture.