

with it. We have, however, cases in which the coronary arteries seem about the only vessels affected; this "localized" atheroma, especially in the young and middle-aged, is generally due to syphilis. Extreme sclerosis of the coronary arteries is common in the aged, not as a cause of death, but as a post-mortem find.

Atheroma of a vessel necessarily leads to more or less narrowing of its lumen, and when this narrowing is extreme, and other conditions are favorable, we have our second condition as a result—*thrombosis*. When the narrowing is not of such a degree as to cause thrombosis, we have effects associated with it varying all the way from no symptoms at all to shortness of breath on exertion, fatty degeneration and angina pectoris. These conditions I do not intend to discuss, so we come at once to the effects of blocking of the coronary arteries by thrombosis or embolism.

The effects of a complete blocking of a coronary artery are (1) sudden death, (2) infarct, white or red, (3) rupture, (4) fibrous myocarditis, (5) aneurism of the heart, (6) abscess of the wall of the heart.

The terminal branches of the coronary arteries are end arteries in spite of the fact that Wickersheimer has succeeded in making an injection fluid pass from one artery, through communicating branches, to another. The coronary arteries anastomoses, but the anastomosis is so slight that it does not permit a collateral circulation of such extent as to preserve the infarcted area from degeneration.

Kolster† tied a small branch of the ramus descendens in the dog and kept the animals alive from one day to seventeen months. The microscopical examination of a heart of a dog killed twenty-four hours after ligation, showed a "typical coagulation necrosis in the area of the artery ligated." Kolster remarks that "nothing else could have been expected, for Weigert (Virchow Archiv. Bd. LXXIX.) took these very infarcts as a type of coagulation necrosis."

In dogs kept longer alive the progressive alterations were traced from day to day and month to month, and resulted in an area of fibrous myocarditis exactly corresponding to the area supplied by the ligated vessel.

W. T. Porter‡ ligated the descendens in the dog a few millimetres from its origin; two dogs lived, respectively, four days and fourteen

†Skand. Archiv. f. Physiolog. 1893. iv. pp. 1-45.

‡Archiv. f. d. ges. Physiolog 1894. lv. pp. 366-371.