



when the process reaches the origin of the capillary, the thrombus may form the nucleus of an occluding mass in the lumen of the coronary artery.^{2b}

Since 1935 fifty-eight fatal cases of coronary thrombosis have been studied by fairly exhaustive methods, including serial sections in most instances, and in 52 cases, or 89 per cent, an intimal hemorrhage has been found at the site of precipitation of the thrombus.^{3a-b-c} Recently Horn and Finkelstein⁴ have confirmed this finding in a larger series. It appears certain, therefore, that intimal hemorrhage (or other sequelae of capillary rupture) is the usual precipitating lesion in coronary thrombosis.

In the final analysis, then, the factors responsible for the rupture of intimal capillaries are the immediate causes of precipitation of most coronary thrombi. Three distinct sets of factors are involved in the process, and it is with some of these that this paper is concerned. The integrity of a capillary wall in any part of the body depends on (1) the pressure of blood within the lumen, (2) the strength and elasticity of the wall, and (3) the rigidity of the supporting tissue. I am presenting evidence here that suggests that hypertension (persistent or transient), increased capillary fragility due to avitaminosis C, and inadequate calcification of atheromatous foci are concerned in the formation of intimal hemorrhages.

HYPERTENSION

Intracapillary pressure appears to play an important rôle in the etiology of intimal hemorrhage and coronary thrombosis. Intimal capillaries are peculiar in that they lie in direct communication with the lumen of a large artery in which the pressure of blood, even if normal, is relatively high, approximating that in the ascending aorta. They are not, like other capillaries, at the end of a long series of arteries and arterioles which absorb much of the pressure by friction. It is reasonable to assume that the pressure in intimal capillaries of the coronary arteries will be further increased in cases of persistent hypertension or of temporary elevation of blood pressure from excessive exer-

Fig. 1.—Microphotograph showing a capillary (marked by arrow) arising from the lumen of a sclerotic coronary artery and penetrating the thickened intima. H. & E. X 70. Fig. 2.—Microphotograph of an intimal hemorrhage in a sclerotic coronary artery. The arrow points to an intimal capillary. H. & E. X 60. Fig. 3.—Microphotograph of a coronary thrombus adjacent to, and caused by, an intimal hemorrhage. The hemorrhage is marked by the arrow. H. & E. X 25.