

demise was due to spontaneous rupture of the heart, induced by hæmorrhagic infarction of the heart muscle, which in turn must be traced to the endarterial obliteration of a large coronary artery. These cases are of particular interest, for they are apt to be confounded with traumatic hæmorrhages of the heart, and indeed the decision may not always be as easy as in this case, where evidence is quite complete.

In a traumatic severance, the cut or puncture is definite, straight, the surrounding musculature shows little hæmorrhagic infiltration, and, extremely important, the surrounding heart muscle and arteries are healthy. The spontaneous rupture, on the other hand, is irregular, indented, torn, and occasionally tortuous. Of importance here is the surrounding hæmorrhagic infarction (myomalacia), degeneration and fatty metamorphosis of the infarcted area, and a diseased state of the uninvolved neighboring muscle fibres. In the smaller, recent infarctions, the thrombosed artery may sometimes be seen within the necrosing focus, and where they are extensive, as in this case, a larger branch will usually be found the seat of an obliterating endarteritis. In doubtful cases microscopic examination is absolutely essential to arrive at a trustworthy conclusion.

On the other hand, it is also important to know whether the infarcted area, once produced, leads to spontaneous rupture or whether external physical factors are essential. To answer this properly we must inquire somewhat into the genesis of the hæmorrhagic infarction of the heart.

The idea once prevalent that coronary arteries are endarteries, since the investigations of Spalteholz, has been superseded by the view that there exist anastomoses, not only between main coronary arteries, but also between their branches and extensions. And, indeed, the experimental investigations into the results of obstruction of coronary vessels have not been followed by uniform results.⁵ Even

⁵Hirsch. In the *Verhandlungen der deutschen pathologischen Gesellschaft* for 1909. Spalteholz's work *ibidem*.