ON
WHITE SPOTS
ON THE SURFACE OF THE HEART,
AND
ON THE FREQUENCY OF
PERICARDITIS.

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THE origin of the white spots so commonly found on the surface of the heart, has not yet, I believe, been satisfactorily illustrated. Many writers have indeed regarded them as effects of pericarditis,* but their extreme frequency, and the absence of any positive evidence in support of such an opinion, have hitherto opposed its general reception, and at present most pathologists would probably agree with the accurate M. Bizot,† that the nature of their cause is totally unknown.

* See Copland's Dictionary of Practical Medicine, Art. HEART, § 215.

† Recherches sur le Cœur et le Système Artériel chez l'Homme. —Mem. de la Société Med. d'Observation, V. I., p. 348.

The most common appearance of this affection of the serous covering of the heart, is that of one or more opaque, pearly-white spots, of a rounded or irregular form, of moderate density and consistence, and very slightly, if at all, elevated above the surrounding surface. These spots are sometimes not more than a line in diameter, but they vary in size, and often cover nearly the whole of one surface of the right ventricle or auricle; their most common width is about half an inch, and they are from half a line to two lines in thickness. They occur most frequently on the anterior surface of the right ventricle, and are often found tracking out the course of the trunks of its coronary vessels. They are rather more rarely seen on the posterior surface of the right ventricle, and on the right auricle; more rarely still on the left ventricle, and most rarely of all on the left auricle.

With these spots there almost constantly coincides some adhesion, by organized lymph, between adjacent parts of the pericardial membrane; and it is from this fact that I am led to regard them, in all cases, as the results of pericarditis.

The adhesions generally consist of slender threads passing across the furrow between the aorta and vena cava superior, or between the aorta and pulmonary artery at some little distance from their connection with the heart. In other cases, they are attached by one extremity to either of these vessels, and by the other to the opposite surface of the pericardium; and more rarely, though more distinctly,

a band of adhesion passes from one of the spots or from some adjacent part of the heart to the opposite surface. Lastly, there may be found only the indications of adhesions that had once existed, in the form of small pearly granules on the surface of the aorta or cava, and on the corresponding surface of the pericardium. In one or other of these forms adhesions may be found in nearly every case in which there is a white spot on the surface of the heart; they are often minute and difficult of detection, and though when once seen they are sufficiently distinct to leave no doubt of their origin, yet I have sometimes had to make so careful an examination to find them, that I have felt no surprise at their having been generally overlooked.

From the records of the cases which I have examined, I find that in 40 cases in which there were white spots on the heart, 35 have presented anormal adhesions, or their remains. In 5 cases only were the adhesions absent, and in 4 cases only an adhesion was found where there were no spots. In the 35 cases with adhesions, they were situated 23 times between the aorta and some other vessel, and 19 times between one of the great vessels and the opposite surface of the pericardium.

In four cases I have found a band of adhesion passing from the surface of a spot to the pericardium opposite to it; and my friend, Dr. Budd, tells me that he has twice seen a similar formation. In many cases also there is a distinct roughness or radiated puckering, like a superficial cicatrix, on the

pericardium opposite the spots. In these it is probable that the spots are indications of the pre-existence of adhesions; but in all other cases I should regard them as the effects of local and defined inflammation, which has been prevented from producing adhesion by the fluid simultaneously effused separating the serous surfaces, and permitting part of the lymph to sink down to the great vessels, while the rest remained on the surface and in the cellular tissue of the inflamed part.

The question often asked, whether these spots be seated in or on the pericardial membrane of the heart, is, I think, one which neither can nor need be definitively answered. According to the depth and degree to which the cellular or adipose tissue round the heart is inflamed, the lymph will be effused, either on its surface, (after the removal of the epithelium,) or in its areolæ, or in both situations; and in any case when it becomes organized, it will form a new epithelium on its free surface, and may therefore be said to be beneath the serous membrane. The spots are generally easily stripped off, but in no case after they are organized can they be separated from the subjacent tissue without dividing numerous connecting filaments, and leaving the surface from which they are removed flocculent and shreddy. The little patches of soft transparent and very easily separable lymph, which M. Bizot mentions, are, I believe, only an early stage of the same affection, in which the inflammation is chiefly superficial, and lymph is effused on the surface of

the membrane ; at first it of course adheres but slightly ; but subsequently, when vessels pass into it, it undergoes all the usual changes of effused lymph, and becomes opaque and adherent.

The reason of the adhesions which are coincident with these spots being so constantly found about the great vessels is, that in comparison with the walls of the heart, *they* are fixed and motionless, and present every facility for the adhesion and organization of the lymph that is effused, and which either gravitates to them in the recumbent position of the body, or is impelled thither by the currents which the action of the heart excites in the fluid around it. I have often seen that the lymph effused in a slight recent attack of pericarditis has settled around the great vessels ; and it is commonly observed, that the last part in which a rubbing sound can be heard, in more severe cases, is in the line over the base of the pericardium, where the great vessels are connected with the sac.

If this explanation be correct, it would prove that adhesions do not necessarily mark the part at which the chief inflammation of a serous membrane has existed ; and in this respect these cases of pericarditis are similar to some of peritonitis, in which, as Dr. Hodgkin* has remarked (and I have often had occasion to confirm his observation), it is probable that the adhesions so commonly found in the pouch between the uterus and rectum, are the result of

* Lectures on the Morbid Anatomy of the Serous and Mucous Membranes, vol. i. p. 157.

loose lymph, effused from some other organ, having gravitated to this situation.

But whatever explanation of the formation of the adhesions be received, both they and the white spots cannot but be regarded as the effects of inflammation of some part of the pericardium; and they prove a far greater frequency of that disease than has been generally imagined. The white spots are so common, that many writers, as Dr. Baillie, Dr. Hodgkin, &c., have considered that they could scarcely be regarded as the result of disease. It is often said, that they occur in half, or more than half, of those who are above the age of childhood. M. Bizot found them 45 times in 156 subjects; viz., in 31 out of 72 men, and in 14 out of 84 women; and I have myself found them in 45 cases out of 110; viz., in 32 out of 66 males, and in 13 out of 44 females. The proportions in which they are found in different ages is also, I believe, correctly stated by M. Bizot; but this calculation is of less interest when the affection ceases to be regarded as one of the changes commonly induced by age; because it is evident that the proportion of persons affected with pericarditis, or any other disease common to all ages, must increase with advancing years.

Including then the white spots among the effects of pericarditis, I find that of 110 cases which I have lately examined at St. Bartholomew's Hospital, 58 have presented signs of having suffered at some time from that disease. Among these, 40 out of

66 males, and 18 out of 44 females, were thus affected ; and with respect to their ages, the morbid appearances were found in 5 out of 14 below twenty ; in 25 out of 53 between the ages of twenty and forty ; and in 28 out of 43 above forty.

Of these 58 cases of pericarditis, 49 were slight cases, marked by white spots and adhesions, or by effusion of small quantities of lymph ; and 9 were severe, with complete adhesion, or with abundant recent effusion.

The subsequent effects of the slight cases of pericarditis are not appreciable. In none of them was there any disease of the heart, but such as was sufficiently accounted for by some other coincident affection, as disease of the valves, &c. In three cases of complete and close adhesion of the pericardial surfaces also, in which there was no coincident disease of the valves, the patients were engaged in active work, and died of affections over which the state of the heart had no evident influence. In two other cases of complete adhesion, the valves were diseased, and both these proved fatal ; one in three years, and the other in a year after the first attack, which occurred in the course of rheumatism.

It is difficult to discover the causes of any disease from patients of the class among whom these examinations have been made, when it has not produced any effect appreciable to their senses. With respect, therefore, to the occasions on which these slight affections of the pericardium have happened,

I can give no sufficient information. I have several times seen slight pericarditis occurring as an accident of typhus fever ; and I am inclined to think it may exist in the course of many acute diseases. Of the 66 males examined, 24 were known drunkards ; and of these, 20 had had pericarditis ; a proportion sufficient to prove that intemperance and its consequences are among the most powerful excitants of this disease. Phthisis does not appear to have any influence on its development.