

pears when the attenuated muscular fibres of the heart, with the rest of the muscles regain their normal condition ; but the dilatation which results from fatty degeneration of the muscular walls of the heart steadily increases. *Third:* there is still another cause of cardiac dilatation which has already been referred to in connection with the history of valvular diseases ; that is, degeneration of the muscular substances of the heart which is the seat of eccentric hypertrophy. The manner of its development I have already described. The dilatation does not occur in this class of cases until long after the development of the valvular diseases which give rise to the hypertrophy. Usually the hypertrophy becomes very extensive before the degenerative dilatation commences ; but when it once begins, it progresses very rapidly, and the failure of heart power is attended by very distressing symptoms. The power that obstruction to the pulmonary circulation has in producing dilatation of the right ventricle has been considered in connection with valvular diseases of the heart. When these obstructions exist, eccentric hypertrophy rather than dilatation is generally developed.

*Symptoms.* The symptoms that attend the development of cardiac dilatation chiefly depend upon the character and seat of the dilatation. In simple cardiac dilatation, the heart walls possess normal power, but the capacity of the cavities is increased, and the amount of blood to be expelled with each cardiac pulsation is greater than normal, consequently there is labored action of the heart (often to such an extent that it may readily be mistaken for the action of a hypertrophied heart), yet the force of the heart's action does not increase, and therefore we have a feebleness of the radial pulse. The rhythm of the heart's action will not be disturbed. In that form termed atrophic dilatation you have a very different state of affairs. The heart cavities are not only dilated, but the walls of the cavities are thinner than normal,—the heart power is insufficient for the expulsion of the blood from its cavities, and as a result, there is a labored action, a markedly feeble radial pulse, and the heart, on account of the increased amount of labor, staggers with action, the arteries are improperly filled with blood, the veins become over distended, the rhythm of the heart's action is disturbed, and the radial pulse becomes weak and intermitting. These latter are points of special importance, as affecting the question of prognosis ; for, if a patient has all the symptoms of cardiac dilatation without an irregular and intermitting pulse, the prognosis is comparatively good. The same disturbance of the circulation occurs in that form of dilatation which is developed from the degeneration of eccentric hypertrophy.

The first, and perhaps the most constant symptom, which is common to all varieties of cardiac dilatation, is cardiac palpitation. At times this palpitation is very severe and distressing. There is almost constantly a sense of painful palpitation in the region of the heart. Very soon after the palpitation has manifested itself, the patient will begin to suffer from dyspnoea on slight exertion ; when he is quiet he suffers very little. As the irregularity of the heart's

action and the palpitation increases, the patient's countenance assumes a pale, languid, anxious expression, with more or less lividity of the lips. On excitement or active physical exertion, the entire face and neck become livid ; the pulse, which usually is regular, for a time becomes irregular and intermittent. In this condition patients often live some time in comparative comfort, but they are conscious, not only of a loss of physical, but of mental power, and are troubled with dyspeptic symptoms, and a sense of fulness about the epigastrium. As the disease advances, and the cardiac dilatation reaches a point at which it is always troublesome, the patient has constant dyspnoea, which becomes severe on slight exertion ; cardiac palpitation is always present, and often accompanied by attacks of syncope. The countenance now assumes a still more anxious expression, the lips retain a constant lividity, and the pulse is still more irregular and intermitting. With these symptoms there will be scantiness of urine, and it will very likely contain albumen. The feet and ankles become oedematous, the oedema gradually extend upwards, until the patient is in a state of general anasarca. The respiration now becomes very difficult, so much so that the patient cannot lie down, but is obliged to sit with his head inclined forward and resting upon some firm support, and he is usually unable to utter more than a single word at a time. The extremities become cold and blue ; the mind wanders, and the patient dies from general anasarca with pulmonary oedema. In nearly all cases of cardiac dilatation, when it becomes extensive, the surface of the body will have a yellow tinge, showing that the circulation through the liver is more or less disturbed.

During the latter stages of this affection, most violent paroxysms of dyspnoea will occur, and it will seem as though the patient must die in some of them, yet they rarely prove fatal ; but the patient passes into a state of coma and dies unconscious. In extensive cardiac dilatation there is always danger from sudden syncope, which may prove immediately fatal. To describe to you all the phenomena that attend the different degrees of cardiac dilatation modified as they are by the idiosyncrasies of the individual, as well as by the varying extent of the valvular changes which may be present, would be almost an endless task.

The phenomena already described, which are present to a certain extent in all cases, are sufficient to lead to at least a problematical diagnosis. Besides, the physical signs of this affection, if properly appreciated, are very distinctive and generally will remove all doubts in connection with a case. You must be prepared, however, to find that the symptoms which develop in different cases greatly vary ; but the variation depends more upon the valvular lesions which are developed in the course of the dilatation than upon the dilatation itself.

*Physical Signs.*—Upon inspection it will be noticed that the visible area of the apex beat is increased ; but it is so indistinct that it will be difficult to determine by inspection the exact point where the apex strikes the walls of the chest. This is espe-