Notes on Heart-disease

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I purpose to make some remarks on the chief
forms of chronic heart-disease, with especial
reference to their diagnosis, illustrating these
remarks as much as I can by cases which I have
myself seen and taken notes of.

I think first make some general remarks on the
examination of patients affected with chronic heart-
disease, especially on the examination of the heart itself.

We may learn a great deal from the general appear-
ance of the patient, before asking him a single question
as to his history & symptoms, or making any physical
examination of his state. Thus, the tendency to ather-
omatous degeneration of the arterial system is shown
by the dilated capillary vessels on the cheek, the arms
devils, the visible radial arteries, &c. and we may
recognise at first sight the actual existence of cardiac
disease by the general appearance of the patient, the evident
embarrassment to respiration, the orthopnea, 
Even the very form of disease, the exact lesion of the heart,
may thus be detected at first sight. Thus, if we see puls-
ation of the jugular veins in the neck, we know that there
is insufficiency of the tricuspid valves, a probably dilatation of the right side of the heart. And we may infer the existence of aortic regurgitation, from seeing the bounding of the vessels in the neck. More than once I have seen the suspicion raised by the existence of aneurysm of the thoracic aorta, when the symptoms would hardly have done so, by the observation of a difference in the size of the pupils, and that suspicion prove correct on physical examination of the chest, or in the after history of the patient. — E.g. Mary Fairgrieve came to the Hospital in charge of her sister, who was suffering from Stricture of the Oesophagus. She made no complaint about her own health, but casually it was observed that one of her pupils was more contracted than the other. This observation, & the fact that she had some amount of laryngeal cough, led to careful examination being made of her chest, and the discovery of shade of dulness at the upper part of the sternum. She died a few months after and on post-mortem examination there was found a small aneurysm of the aorta.

It is of great importance in the examination of persons labouring under heart-disease to enquire into their previous history, and especially to learn whether they have suffered from rheumatism. The liability of acute rheumatism to affect the heart is well known, and its effects are most serious; the destruction of the valvular apparatus, & the subsequent changes in the muscular substance and cavities of the heart. — And we find these effects not only after acute rheumatic
but even when the existence of the rheumatic diathesis has been manifested in a very chronic, or very slight form. The patient may have only had a few 'growing pains'; or he may have had an attack of rheumatism in his youth. Or we may find that though he never had rheumatism himself, yet his parents had it.

The Examination of the Heart:

In proceeding to the Examination of the Heart, there are several points which may be observed by a simple inspection. We often find edema of the integuments in the region of the heart—præcordial edema. The existence of which condition is one of the proofs that drooping does not depend merely upon mechanical obstruction of the circulation, and on the state of the blood, but that the nervous system also has an influence over it. — Præcordial bulging may exist, sometimes as a natural condition, but more frequently as an evidence of disease, of hypertrophy of the heart, or of effusion of fluid into the pericardium; and the existence of prominence in the upper part of the chest, especially if it be pulsatile, is the best evidence of aneurism, which is so closely connected with heart-disease.

The opposite condition—depression of the præcordial region—is common in phthisis, but then it exists not as evidence of change in the heart, but of contraction of the lung. — Continuing the inspection of the heart, we may next notice the situation & extent of its visible impulse. It is lowered in hypertrophy, raised in pericardial effusion, & often also in phthisis. Instead of
impulse there may be diastolic retraction at the apex and sometimes at the epigastrium, and this indicates adherent pericardium. There may be an undulatory impulse in pericardial effusion, and less distinctly in a dilated heart.

Palpation is the next method of examination we employ. We may find the heart's impulse increased. If this be due to nervous palpitation, the stroke will be a short sharp one quite different from the heaving impulse of hypertrophy. The impulse may be diminished, as in dilatation, fatty degeneration, pericardial effusion, or without disease of the heart itself, from the overlapping of an emphysematous lung. The rhythm of the heart may be altered in force and time, though this is best recognised in the pulse. It is most common in disease of the mitral orifice, and is also one of the signs of dilatation, but if neither of these conditions be present,—if there is no murmur, or increased area of dulness, then it is probably due to fatty degeneration of the heart, or adherent pericardium. The position of the heart may be altered, generally in consequence of disease of neighbouring organs; as, when effusion of fluid into the pleura on the left side occurs, the heart may be pushed completely over to the right side.

Percussion. This enables us to ascertain the size and form of the heart. We must remember however, that alterations in the area of cardiac dulness may be due to other causes than changes in the heart itself; as the encroachment of emphysematous lungs, effusion of fluid into the pericardium...
Case following is an interesting case showing the effect of air in the pericardium in causing tympanitic percussion over the heart. The sister of the patient mentioned formerly had been a month in the hospital suffering from symptoms of stricture of the esophagus, when she was seized with an attack of pericarditis, which continued for 7 days, and then there was developed an almost tympanitic percussion over the region of the heart, and on auscultation a gurgling & splashing noise. On her death 2 days after, an examination was made, and it was found that there was cause of the esophagus, and perforation through the pericardium, the cavity of which contained air & a fetid fluid, evidently from food she had swallowed.

The area of dulness of the heart may be increased either downwards and to the left, as in hypertrophy of the left ventricle, so that the apex is sometimes found below the axilla, or to the right, as in hypertrophy with dilatation of the right side of the heart, with tricuspid insufficiency, from obstructed circulation. If the increase of dulness be upward, it may be due either to effusion into the pericardium, or aneurism arising close to the heart.

Auscultation. First, the natural sounds of the heart may be modified by disease; especially the first sound, since its causes are so complex. They may be louder as in nervous excitement, or in dilated hypertrophy; sharper & clearer in simple dilatation; or weakened in disease of muscular substance, hypertrophy, fatty degeneration, etc. Weakness of the 1st sound is also
The existence of an accentuated D sound, of a booming character, is very characteristic of aortic disease of the aorta, either dilatation or aneurism. It led me to suspect aneurism in a patient in the High Street (under my own charge) in whom the ordinary signs of aneurism were obscure; afterwards the proof of the existence of aneurism was established by the occurrence of a centre of pulsation separate from the heart. The patient died suddenly from rupture of the aneurism.
important in diseases where there is no affection of the heart, especially in fevers; when it exists, is an indication for the use of stimulants. The heart sounds may be muffled when anything intervenes between it and the walls of the chest, as a pericardial effusion, or emphysematous lungs. They may be accentuated, being often an evidence of disease in another part of the organ than that immediately connected with the sound; e.g. accentuation of the 2nd sound over the pulmonary valve being found connected with mitral constriction. We may also note the length of the sound, especially the 1st, and of the intervening silences; the quality and pitch, &c, all of which may be altered by disease. We sometimes find duplication of the sounds.

Second: Murmurs, or adventitious sounds may exist. In listening to a cardiac murmur we first determine its relation to the sounds of the heart — whether it be pre-eystolic, eystolic, or diastolic; then we find the seat of its greatest intensity, whether it be over the mitral, tricuspid, aortic, or pulmonary orifices. In the great majority of cases we have only to determine whether it be heard best at the apex or at the base; for disease of the tricuspid and pulmonary orifices are comparatively rare, and generally we have only to decide between the mitral and aortic. We should then attend to the area over which the murmur is audible, and the direction in which it is propagated, and lastly to the acoustic character of the sound, which however is a point of much less importance.
than the preceding ones. The character of a murmur may vary from time to time, and alter with posture etc. The sound may even entirely disappear when the heart's action is tranquil, and only become audible on some excitement.

We must distinguish hemic murmurs from those of organic origin. They always occur at the base of the heart, synchronous with the systole. The character of the murmur is soft, and scarcely obscuring the natural first sound, which can often be distinguished amid the murmur. It occurs in young anemic persons, as generally associated with other symptoms of anemia, as the venous hum in the neck.

Pericardial friction is to be distinguished from endocardial murmurs. It is generally double—the 'to-and-fro' sound—though not always so. It may be heard anywhere over the heart, though frequently only where the membrane is reflected. The character of the sound is rough, and seems superficial and near the ear. It commences rather after the systole, and its duration is shorter than an endocardial murmur.

We shall now go on to the consideration of the various forms of chronic heart disease.

**Hypertrophy.**

Hypertrophy of the heart was formerly classified under 3 heads:—simple, eccentric, & concentric. Simple hypertrophy consists of increase of the muscular substance of the heart without any change in the size of the cavities. Eccentric hypertrophy involves increase of the muscular substance with dilatation of the cavities.
Concentric H.- increase of muscular substance with diminution of cavities. Dr. Budd has shown that this last form rarely, if ever, exists, but is a not uncommon post-mortem appearance, due to the ventricle being empty of blood at the time of death, and the examination taking place during the rigor.

Hypertrophy may be limited to one side of the heart, or it may be general, and then it is usually associated with dilatation. It may arise as a result of unhealthy blood, e.g. in spinal disease, but its most common cause is some mechanical obstruction to the circulation in the heart or lungs. If the hypertrophy balance the amount of obstacle, then it remains simple; but if it does not, which is usually the case, then we have hypertrophy with dilatation—a condition of much more serious consequence.

The physical signs of hypertrophy of the left ventricle, when simple, or with only a small amount of dilatation, are these: precordial arching, heaving impulse of the heart, increase of the area of cardiac dulness, situation of the apex-beat carried downward \\nand outward; a muffled prolonged first sound. The symptoms are those of an excited circulation. The pulse is regular, full and strong. There may be general throbbing of the arteries, and a sensation of blood rushing to the head; hence hypertrophy was formerly thought to be a cause of cerebral aphasia. The bowels tend to be constipated. There is dyspnoea on exertion. These symptoms may often be masked by the presence of other conditions of disease. If dilatation be present, the sound of the
heart are louder, and the pulse loses its strength, and the prognosis becomes more unfavourable.

Treatment of Hypertrophy. - As hypertrophy is a compensating arrangement - an endeavour toward health - and as we cannot remove the cause of it, it would be folly in us to desire to cure it. It is however proper in cases where there is much pain & distress, to endeavour to tranquilise the heart by the use of sedatives, as Hyoscyanic acid, Digitalis, Aconite, the Belladonna or opium plaster; but this is to be done cautiously so as not to cause depression. It is more important to ensure the patient to avoid all causes of excitement of the heart, such as excessive bodily or mental exertion, intemperance, &c., and especially to keep the bowels regular.

Dilatation.

Dilatation means an increase of the cavities of the heart disproportional to the thickness of the walls. It usually affects both ventricles, but is not unfrequently limited to the right one. It is met with either in connection with valvular disease, or coexisting with disease of the heart, lungs, liver, and kidneys. The tissue of the heart is soft and flabby; sometimes in a state of fatty degeneration. Dilatation leads to insufficiency of the orifices, especially of the tricuspid, more rarely of the mitral, without any organic change in the valves.

The physical signs of D. are - greatly increased transverse dilatation, apex-beat indistinctly visible, impulse of the heart feeble, somewhat undulatory; the sounds are feeble and irregular,
Podophyllin gr. 1/2
Extr. taraxaci gr. ij. M. fist pilula
5. one to be taken thrice daily.
the first sound is short and abrupt, and it may be clear. The general symptoms are great diminution of strength and weight, the pulse is small, feeble, irregular; palpitation of cardiac inequality, signs of obstructed circulation—anaemia, ascites, congested livers, giving the patient a yellow hollow complexion; congestion of the lungs, leading to cough, dyspnoea, spitting of blood, &c.; then congestion of the kidneys—urine small in quantity, may be albuminous. Cerebral symptoms also occur—staring dreams, fainting, pain, ringing noises in the head.

The prognosis of D. is very bad, especially once Suprasyne supervenes.

Treatment: D. when great requires tonics and stimulants. Be very cautious in using sedatives here, even when combined with hyperbophy. A combination of Iron with Neurine is a safe remedy. The bowels must be regulated, and the liver stimulated, and the other symptoms—dyspnoea &c.—treated.

Case. The following case was evidently one principally of dilatation of the left side of the heart:—G.S. at 51. had been a very intemperate man. In his youth he had suffered an attack of rheumatic fever, and he had been frequently troubled with attacks of severe rheumatic pains since. He had been in bad health for a year—his symptoms were great weakness, loss of appetite, dyspnoea, palpitation, swelling of the feet and face. His complexion was very pallor. The heart was greatly enlarged, especially towards the left side, the apex being low—almost in the lateral region of the chest. Its action was extremely rapid and irregular, so the rhythm of the sound, which
were sharp & clear, could scarcely be made out. There was a
systolic mitral murmur. Pulse rapid, weak, irregular.
The liver was somewhat enlarged under extreme pressure. His urine
was passed in small quantity, but not albuminuous.

Dilatation of the Right Side of the heart is of frequent occurrence, generally in combination with a little hypertrophy; but we do not find such simple hypertrophy of the right side. It is almost always in connexion with some form of pulmonary disease, such as emphysema, impeding the passage of the blood through the lungs. The physical signs are, great increase of extent of transverse dulness of the heart especially towards the right side, sometimes extending beyond the middle line. The 1st sound may be duller, the 2nd more accentuated than in health.
There is generally widening of the tricuspid orifice, though not always producing a murmur. The jugular veins are distended and often pulsate. There is lividity of the Countenance, edema of the face and neck, cough, dyspnoea, haemorrhages; symptoms of pulmonary congestion, often of bronchitis, or pulmonary apoplexy. Then follow congestion of the liver & kidneys, & dropsy. The treatment must be principally directed against the occurrence of dropsy, & should consist of the administration of iron, diuretics & expectorants, regulation of the bowels to prevent hepatic congestion.

Case. This form of disease is illustrated by the case of A. B., at 23, cabman. His illness had lasted a year. It began from a severe cold, from which he recovered only partially, being ever afterwards liable to breathlessness & palpitation on any exertion. Lately,
after fresh exposure to cold, his symptoms had been greatly aggravated. There was great lividity of the face, blueness of the lips, much cough and difficulty of breathing, orthopnea, palpitation. He had no hemoptysis. The expectoration was bronchitic. The transverse dulness of the heart was greatly increased, extending fully an inch to the right of the median line; the apex beat diffused; there was a long systolic bruit running up to the systolic 2nd sound and partly concealing it, heard most distinctly at the lower end of the sternum, becoming least distinct as the stethoscope was moved towards the apex of the heart. As the apex a systolic bruit, apparently different from the former, not so loud or long as it, became audible. — The pulse was frequent, and weak, but regular, and continued so. There was great distention of the jugular veins, fulness of the neck; edema of the legs & thighs, also of the precordial region. His urine was passed in small quantities, of high density, and though not albuminous at first, it ultimately became so. There were signs of congestion of the lungs also of the liver, which was enlarged & very tender. — He was treated by diuretics & expectorants, stimulants, bitches over the liver, &c., but with only temporary benefit. The anaemia steadily increased. Stronger diuretics were employed, puncture of the edematous scrotum was had recourse to (but was followed by coughing, as indeed is always the case in hospital patients). The patient died. On post-mortem examination, there was great dilatation of the right side of the heart, the right ventricle being anterior & completely
concealing the left ventricle. The auriculo-ventricular was so
dilated as easily to admit 5 fingers, & the tricuspid valve was
diseased. There was slight dilatation hypertrophy of the left
ventricle, & the mitral valve was somewhat incompetent.
The lungs were very edematous or hyperemic along the ant-
erior margins, there was one patch of pulmonary edema.
There was congestion of the liver, spleen, & kidneys; at there was
fluid in all the pericardial sacs.

Fatty Degeneration of the Heart.

There are 2 forms of fatty disease of the heart, as was in-
indicated by Laennec; 1st, fat deposited on the surface
of the heart under the pericardium; 2nd, fatty degeneration
of the muscular fibres. The evidence of the existence of this
morbid state can only be presumptive. The symptoms are
very like those of weak dilated heart, viz. weak impulse, in-
distinct apex-beat, feeble sounds, but no increase of dulness, or
vascular thrill; slow pulse, general debility. Cerebral symptoms
of a peculiar character occur. consisting in repeated pseudo-
apoplectic attacks not followed by any paralysis, also milder
attacks of vertigo, & sometimes a sensation of sinking at the heart.
The subjects of this disease are generally persons at an advanced
period of life, & in the middle & upper classes, often of a gouty habit.
"They are fit for all the ordinary events of a calm and quiet life,
but are unable to resist the storm of a sickness, accident or operation."
This state of the heart is a common cause of sudden death, sometimes
by rupture of the organ. Treatment—Tonics and quiet.
Disease of the Orifices

Disease of the orifices of the heart is of 2 kinds: — 1st. Congenital leading to obstruction of the current of blood through the orifice; 2nd. Disproportion between the valve and the orifice leading to imperfect closure of the orifice, and therefore regurgitation of blood. This disproportion may be due either to disease of the valves altering their form, or to widening of the orifice while the valves remain entire; the former condition being more common on the left side of the heart, the latter on the right side. Occasionally regurgitation of the blood takes place when mitral stenosis, as in the mitral orifice, producing a systolic murmur at the apex; but this condition is only temporary, and is supposed to be due to an irregular chronic contraction of the muscular apparatus connected with the valves causing their imperfect closure. — The causes of these diseases are acute inflammation of the lining membrane of the interior of the heart; atheromatous and calcific degeneracy; and deposit of fibrin on the surfaces of the valves. In consequence of these affections the valves may become thick, puckered, glued to one another; or thin, riddled, torn, or covered with vegetations.

The diagnosis of the different forms of valvar disease depends chiefly on the murmur to which they give rise; but we must remember that the distinctness or loudness of the murmur is not proportional to the amount of disease; and even the entire absence of murmur does not prove the absence of disease.
Mitrail Regurgitation &c.

We shall first consider the most common form of valvular disease — insufficiency of the mitral valves allowing the blood to pass back into the auricle during the diastole of the heart. It gives rise to a diastolic murmur which is heard at the apex, & is comparatively inaudible over the rest of the heart, the natural 1st sound being heard there, unless the murmur is so intense as to obscure it. This murmur will not be constant if its cause be dynamic, & not organic, as in chorea; although even an organic murmur may at times not be evolved, when the heart's action is very feeble; but then, when we excite the heart by a little exertion such as by making the patient take a few turns in the ward, the murmur becomes audible. The murmur is also heard in the back at the lower end of the left scapula. — Mitral insufficiency is often followed by hypertrophy with dilatation of the left ventricle — the symptoms are small and feeble pulse, often irregular. On applying the hand over the heart, the "purring hum" or thrill is felt.

Mitrail Constriction, causing obstruction to the passage of blood through the orifice, rarely exists without mitral insufficiency or regurgitation. Its murmur is diastolic, or rather pre-diastolic, most intense at the apex of the heart, & also heard at the lower angle of the left scapula. Stokes has pointed out that it is frequently accompanied by an accentuation of the 2nd sound over the pulmonary artery, which any one can verify for himself frequently. When mitral obstruction and regurgitation co-exist, the murmurs is
not doubt as in aortic obstruction & regurgitation. Mitral constriction frequently exists without any murmur. Thus in the case of Mrs R. who was in the Clinical ward of the Infirmary with cirrhosis of the liver, there was no cardiac murmur. She had cough, spilt, pulmonary congestion, weak irregular pulse. On post-mortem examination, it was found that the mitral orifice was so contracted that it would scarcely admit the little finger. The murmur may exist at one time, & afterward disappears with increase of the constriction, or with the heart becoming feeble.

Symptoms of mitral disease — The most essential effects of mitral disease are pulmonary congestion, giving rise to cough, expectoration, dyspnea, hemoptysis, bronchitis, pulmonary apoplexy. There may be an almost entire absence of symptoms for a long time till some change takes place in the vital & mechanical state of the heart. — The pulse is small but may be regular, but if there be dilated hypertrophy of the ventricle, it becomes irregular & feeble, and there is increased dulness & impulse, a lowering of the apex beat; and then follow symptoms of systemic congestion, dyspnea etc., which are proportional to the amount of dilatation, and the impoverishment of the blood. — When there is mitral constriction, there commonly results also dilatation of the right ventricle.

Case of mitral disease with embolism of middle cerebral artery.

The following is a condensed account of an interesting case in the clinical ward, October 1861. — Mary Allan, 30? had not been a very temperate woman. She had suffered from cough, breathlessness and palpitation for 5 years, but a few weeks before, this
had become much worse — symptoms. Face much congested, veins of neck turgid, feet elegs edematous, & the hands slightly so. Respirations laboured & rapid, orthopnea, severe cough, profuse muco-purulent expectoration, streaked with blood.

Physical exam — Cardiac impulse diffused irregularly throughout the two sounds hardly distinguishable from irregularity of feebleness. There was a systolic murmur at the apex, not at the base. Transverse cardiac dulness could not be determined owing to the dulness of the lungs. Pulse scarcely perceptible, irregular, 96. — There was dulness with coarse crepitations and increased vocal resonance at the base of the lungs. The hepatic dulness was not determined. The urines were not albuminous.

Treatment — dry cupping over the chest, stimulants, antispasmodics, etc. Gradually the dropsy increased, & albumen was found in the urine. A systolic murmur became audible at the base of the heart and down the sternum. The ankles were punctured to reduce the swelling. Next day she was seized with a hemiplegic attack. She did not lose consciousness. She complained of pain in the right side of the head. The loss of power was on the left side — of the arm entirely — of the leg only partially. In the face the mouth was drawn to the right side, and when the tongue was protruded it was to the left side. The edema of the left arm was much increased — 3 days after, it was noted that the swelling had increased in the left leg, but had nearly entirely disappeared from the right one. She died 5 days after the attack.

On post-mortem the aortic valves were thickened, incompetent, with vegetations; mitral orifice contracted & incompetent — left ventricle dilated, the right one somewhat dilated — hypertrophied — Congestion lungs & viscera. clot in right middle cerebral artery, with softening of brain in neighbourhood.
Case of mitral constriction & regurgitation. I. J. a boy at 8 complained of cough, dyspnea, palpitation. He had never suffered from rheumatism, but his mother stated that lately he had had an attack of nervousness (chorea?) On examination of the heart there was considerable increase of transverse dulness of the breast and a thrill felt at the apex, & on auscultation there was a loud murmur commencing before the systole of the heart, (presystolic). Over the pulmonary artery, above the junction of the 3rd left cartilage with the sternum, the 2nd sound was clearly more pronounced than over the corresponding spot on the right side. The pulse was very small & feeble but regular.

Several other cases I have notes of in which the physical signs were the same as in this one, in one of these, the patient a boy at 12, had been bedridden, seized 4 months previously, with hemiplegia of the right side of the body & face, from which he was then gradually recovering... evidently due to embolism.

Aortic Valve Disease.

Aortic obstruction is indicated by a diastolic murmur, loudest at the base of the heart, & becoming fainter towards the apex, much more clearly heard at the cartilage of the 2nd right rib, than the 2nd left rib. It is also propagated along the sternum to the manubrium cartilage, & is heard in the back.

Murmurs of blood origin also occur at the base almost but must be distinguished from those of valvar disease by the characters previously mentioned. We may also have murmurs at the base connected with aneurism.
leads to hypertrophy of the left ventricle, sometimes with dilatation; and it is sometimes combined with mitral regurgitation. The action of the heart is slow and feeble but generally regular. There is no effect on the pulmonary circulation, and there may even be none on the systemic so long as the capacity of the ventricle is not much increased unless there be great impoverishment of blood.

Aortic regurgitation has a diastolic murmur, loudest at the base of the heart, though it may be heard almost as loud at the sternal cartilage. It is most frequently associated with the murmur of aortic obstruction. Sometimes the normal 2nd sound of the heart is also heard through the midst of the murmur either from the pulmonary valves, or from the flapping of the partially competent aortic valves. (case 3, no. 3). There is general visibility of the arterial pulses. The character of the pulse in aortic regurgitation is very distinctive, as was first described by Carrigan. It is a sudden short collapsing stroke, "the pulse of unfilled arteries." There is also leaping and also thrill of the vessels in the neck. These characters diminish somewhat with the decline of the general strength, i.e., the force of the heart, indicating the approach of death.

Case 17, B. 21, 22, stated that though he never had rheumatic fever, yet he had suffered severely from growing pains in the joints. He complained of dyspnoea and palpitation. [During his examination, an eruption of urticaria appeared on the front of the chest, especially over the region of the heart.] There was violent leaping of
Most of them suffered from paroxysms of angina.

As in the case of A. B., related under the head of Dilatation of the Right side.
the great vessels of the neck, a thrill felt on placing the hand over them; visibility of all the superficial arteries, and a peculiar 'thud' heard on placing the stethoscope over them, as over the posterior tibial artery. There was extended cardiac dulness from hypertrophy of the left ventricle, & dulness at the upper part of the sternum; and on auscultation at the base a loud double murmur; in the midst of the regurgitant murmur the 2nd sound was partly heard. He was treated by the application of a paste of Belladonna officinale to the heart; and the administration of a little camphor & rhubarb. I have notes of several other similar cases, which it is unnecessary to give.

Valvular Disease of the Right Side of the Heart:

Tricuspid Regurgitation, when existing as a condition of disease, is but an exaggeration of the natural insufficiency of this orifice, which John Hunter thought was a normal provision against pulmonary congestion. The murmur of tricuspid regurgitation is systolic, & is heard loudest at the lower end of the sternum, but is inaudible at the apex of the left ventricle, or in the back. The murmur is often absent, though the condition of regurgitation be present. Sometimes it is obscured by a very loud mitral murmur; and sometimes a spot is found between the beats of a mitral & a tricuspid murmur, where little murmur is heard. There is distention and often pulsation of the jugular veins; there may be nothing peculiar in the character of the pulse. The case of Mr. formerly related under the head of Dilatation is an excellent & illustration of this valvular lesion. The general
Symptoms would be those of sympathetic congestion alone, were it not that this valvular lesion is usually connected with a more or less remote organic condition of the lungs or of the left side of the heart, leading to dilatation of the right ventricle and consequent tricuspid insufficiency. Pulmonary murmurs are rare. They are heard loudest at the cartilage of the 2nd left rib, which is just over the pulmonary valve. They are not propagated along the course of the pulmonary circulation, and they are more distinct over the 2nd left or 'pulmonary' cartilage than over the 2nd right or 'aortic cartilage'. A pulmonary diastolic murmur is not unfreqently present in tubercular condensation of the lungs, it is supposed to be caused by the pressure of the condensed lung on the artery. The murmur of pulmonary regurgitation, which is extremely rare, is known by its situation, and by the absence of the collapsing character of the pulse which is so diagnostical of aortic regurgitation. An instance of the diagnosis of this murmur (caused by malformation of the valve) & the subsequent verification by post-mortem examination, is recorded in Beal's Arch. vol. ii.

Symptoms & Treatment of Valvular Disease

The symptoms common to the different forms of valvular disease of the heart are - loss of strength without a corresponding loss of weight; starting from sleep; frightful dreams; such as, of falling from a precipice; palpitation, paroxysmal attacks of pain in the cardiac region, sometimes extending down the left arm, and a feeling as if death were imminent, - constituting a kind of angina pectoris - brought on by mental excitement, or bodily exertion such as walking. This often occurs in aortic regurgitation,
Another point to be remembered in the prognosis of heart-disease is the possible occurrence of embolism leading to hemiplegia, of which I have related two instances.
The prognosis of valvular disease depends much less on the determination of the form of valvular affection than on that of the vital mechanical condition of the heart. Perhaps the most serious form is tricuspid regurgitation which is always associated with dilatation, and is most likely to cause dropsy. Atrial regurgitation with constriction is next. Aortic regurgitation is less likely to lead to changes in the general system, but is much more serious in another point of view: it is the form of cardiac disease most liable to end in sudden death. Thus a strong, healthy-looking man, a country farmer, came to the hospital for advice; he complained of symptoms of disturbance of the stomach, flatulence &c. He had distinctly the "pulse of unfulfilled arterio" so characteristic of aortic regurgitation, and on auscultation there was a diurnal murmur at the base of the heart. Beyond occasional feeling of uneasiness about the heart, he had no symptoms of cardiac disease—no shortness of breath, &c. His wife was told of the serious nature of his disease, & that he might die suddenly. Three weeks afterward he dropped down dead while at his business. He had been a noted runner in his youth, & possibly one of the aortic valves may have ruptured during a violent exertion. On the whole, the prognosis of valvular disease is very unfavourable, for though the most serious of its forms is not incompatible with long life, yet sudden death may happen to any one of them. Treatment. We cannot of course repair the valve, but we may seek to prevent the results on the heart itself; so that the treatment
The following well-known prescription is most useful in angina pectoris, of the dyspnea of cardiac disease.

By Lethiæi chlorici, et

Tinctura Cardamomi Composita, "a 3j

Sig. A teaspoonful in water occasionally.

By Citri citratus 3j

Aqua florrum Aurantiæ, et 1/2

Aqua fortis, "a 3iv

Sig. Dose to be taken medium vel amplius, ter in die.
comes to the state of hypertrophy and dilatation - which has been already considered. Then, we must treat the symptoms as they arise. We may treat pain and excited action of the heart by antispasmodics and sedatives. The most powerful sedative of the heart's action is Digitalis, and its beneficial effect is perhaps best seen in mitral contraction, with excitement or palpitation of the heart, where we may give it especially if combined with iron even though the pulse be weak. But we do not give it in any case when there is muscular weakness of the heart, as in dilatation or fatty degeneration. In these if we use any sedative, it must be the mildest, such as belladonna, given in combination with iron. Iron by itself is often required, where there are evidences of anemia. It is of the greatest consequence to regulate the bowels, especially in some forms of heart disease where we desire to avoid all causes of exertion, and among these straining at stool.

In treating cardiac dropsy we should combine diuretics with hydroargyrum cathartics. The bitartrate of Potash is one of the best remedies, either by itself, or in the form of Pilis jalapae co.

And Pil. digitalis et belli; Sp. aether nitrosi; Decoct. scoparum, is the best stimulant diuretic in gin. When all other remedies have failed, it is often recommended to employ punctures or incisions through the skin to allow the fluid to escape, more as a palliative than a curative measure. But this appears a most unsafe measure, at least in hospitals, for it usually leads to erysipelas, inflammation or stoughing of the wound.
Cardiac Dropsy

Cardiac dropsy usually begins with an oedema of the lower limbs, while hepatic dropsy begins by ascites, and renal dropsy by an oedema of the face. First appearing at the ankles, it gradually spreads up to the legs, the dependent parts of the thighs, the scrotum, & the cavity of the peritoneum. It may affect also the parietes of the chest over the cardiac region; the lung, the pleura, the pericardium &c. The form of cardiac disease most liable to be accompanied by dropsy is dilatation of the right side with triphasic respiration. But we find that vascular disease may long exist without any dropsy, although it is accompanied by hypertrophy, or even a certain amount of dilatation. Dropsy must therefore depend on other causes than a mere stagnation of blood in the capillaries arising from the imperfect mechanism of the heart. One of these is the impoverished state of the blood which is often connected with heart disease, just as we find dropsy in renal disease or other states in which the blood is diseased. But there can be no doubt that the nervous system also has an important influence in determining the occurrence of dropsy. This is proved by the occurrence of local oedemas, as precordial oedema in cardiac disease, lumbar oedema in renal disease; and the remarkable change in the extent of the dropsy after the attack of hemiplegia, in the case of Mary Allan, reported above, is a most striking proof of it also.

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March 30th 1863