

## LECTURE X.

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### VALVULAR DISEASES OF THE HEART.

**Aortic Lesions—Mitral Lesions — Primary Effects of Valvular Disease on the Circulation — Symptoms and Pathological Effects of Valvular Lesions Secondary Effects of Valvular Lesions — Pain — Palpitation — Cardiac Dropsy — Symptoms of the Respiratory System — Symptoms of the Nervous System — Symptoms of the Digestive System — Symptoms of the Genitourinary System — General Symptoms.**

GENTLEMEN : I now come to those diseased conditions of the valves and orifices of the heart which go under the general name of Valvular Diseases. I have reserved this subject for my last lectures because these lesions are connected with, and are the results of the inflammatory affections hitherto treated of. Another and important reason is, that many diseases and functional disorders of various organs of the body, which are often considered idiopathic by unobserving physicians, are really the result of valvular lesions. If the heart does not work in a normal manner, the circulation all over the body is imperfect, and every other organ becomes deranged.

The clinical study of these lesions is of great interest, on account of the wonderful precision with which modern diagnosis, by means of auscultation, enables us to locate the situation and nature of the lesion.

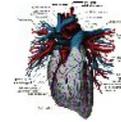
In treating of valvular lesions, my main object will be to describe their immediate and remote effects, and the means by which we can make a correct diagnosis, and finally, the appropriate homoeopathic treatment for these effects. The cause can rarely, if ever, be removed.

I shall first take up for your consideration the

#### AORTIC LESIONS.

Lesions affecting the aortic valves may be limited to one or two of the semilunar segments; but in most cases all are more or less affected. Thickening of the segments is one of the most frequent of the morbid changes. This will not specially impair the function of the valves, but their expansion will be somewhat sluggish, and the intensity of the aortic second sound of the heart must be in some measure diminished.

The segments are often contracted as well as thickened. Consequently a current of blood is forced backward from the aorta into the ventricle, by



the recoil of the arterial coats. At the same time the aortic second sound of the heart must be weakened by the diminished size of the valves as well as by the thickening.

Rigidity of the valves from calcareous deposit is of frequent occurrence. The segments are sometimes expanded, and being encrusted with calcareous salts, appear to be completely petrified. This was formerly called ossification.

Another variety of lesion consists in the presence of warty excrescences or vegetations. These are generally attached at or near the free border of the segments, on their ventricular aspect.

These vegetations may be loosely attached, and liable to be separated by the force of the current of blood during life, and become emboli, and obstruct the circulation in the arteries.

Attenuation from atrophy is also a lesion to which the valves are liable. Rupture, under these circumstances, is liable to occur.

Perforations may occur at any point where the valves are softened, and perhaps at the same time thickened.

Lesions in the aorta, extending, to a greater or less extent, above the valves, are, in the majority of cases, associated with lesions of the aortic orifice. The artery may be dilated or contracted.

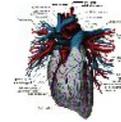
#### **MITRAL LESIONS.**

Lesions at the mitral orifice are essentially the same as aortic lesions, the points of difference relating chiefly to the differences, as regards form and arrangement, of the mitral valves. As a result of their insufficiency, a retrograde stream or current, from the ventricle into the auricle, takes place with each systole of the ventricle, the quantity of blood thus regurgitating, of course, being proportionate to the extent of the mitral insufficiency.

Rupture of the tendinous cords connecting the free margins of the valves with the papillary muscles occasion insufficiency of the mitral valves.

The deposit of calcareous salts at the base of the valves gives rise to lesions, and reduces the auriculo-ventricular orifice to a small aperture.

Vegetations and warty excrescences occur in this situation as at the aortic orifice. But the most frequent mode in which contraction of this



orifice is produced is by the union of the curtains at their sides, leaving a narrow slit through which the blood passes from the auricle into the ventricle.

Aneurism of the mitral, as well as of the semilunar valves, is another variety of lesion.

It is evident, that in so far as the different lesions which have been noticed interfere with the play of the mitral valves, the first sound of the heart must be weakened and modified by the diminution or extinction of the valvular element of this sound.

### SYMPTOMS OF AORTIC AND MITRAL LESIONS.

As symptoms referable directly to the heart may be noticed : pain, palpitation, abnormal changes of the pulse, turgescence of the veins, and venous pulsation.

*Pain.* Absence of pain is the rule, but occasionally patients complain of painful sensations referred to the praecordia. A sense of constriction, uneasiness, or undefinable distress, is oftener met with than actual pain.

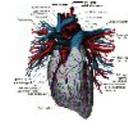
*Palpitation.* Is due, not directly to the lesions of the valves or orifices, but to the hypertrophy to which they have given rise. When the patient complains of the beating of the heart, the impulse is found, on applying the hand over the praecordia, to be abnormally forcible. This increased force is observed when the patient is not aware of any such palpitation. Palpitation, therefore, may be present as an objective, when it is wanting as a subjective symptom.

Other things being equal, the increased violence of the heart's action is proportionate to the amount of hypertrophy, and especially hypertrophy of the left ventricle.

Usually, if the patient complains of undue violence or of irregularity of the heart's action, exclusive of other circumstances, the presumption is that organic disease does not exist.

Palpitation from functional disorder always occasions great uneasiness, and generally intense anxiety and alarm.

It is quite otherwise with palpitation incident to organic disease. As a rule, then, and you may consider it a safe one, palpitation, when accompanied with great uneasiness and uncomplicated, indicates or will suggest to you the nonexistence of structural lesion.



Palpitation due to organic disease is less violent. Functional palpitation occurs often when it cannot be traced to any exciting cause, and is more likely to occur when the patient is at rest.

*Pulse.* You must accustom yourselves to the movements as given by the pulse in heart affections, as well as in other disorders, and it is only by close observation at the bed-side that you will attain that peculiar sense of touch necessary to aid you in your investigations.

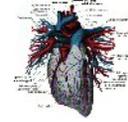
You will observe the size, strength, as compared with the heart's impulse (which never overlook), rhythm, its quickness or slowness, the duration of the movement of the artery under the finger, etc.

Frequency of the pulse, although important as representing the general condition of the circulation, and the state of the vital forces, has no special significance as regards valvular disease.

In mitral lesions attended by regurgitation, the size and strength of the pulse are diminished in proportion to the quantity of blood driven backward by the systolic contraction of the left ventricle, into the left auricle. The weakness and smallness of the pulse are in contrast with the impulse of the heart, as felt by the hand applied over the praecordia, provided the left ventricle be hypertrophied and the action of the heart vigorous. The pulse may be regular, but often, in an advanced stage of the affection, its rhythm is disturbed; it becomes irregular or intermitting. Variation of successive beats as respects size, force, etc., is frequently observed, although it is less characteristic of mitral regurgitant lesions than of those attended by obstruction. The frequency of the pulse in this, as in the other varieties of valvular lesions, depends on the vital condition of the heart.

In case of mitral regurgitation, the pulse is rendered small and weak by the deduction of the blood which regurgitates from the quantity which would otherwise be propelled into the aorta with each systole.

Mitral contraction, when extreme, renders the pulse not only small and weak, but often irregular, intermitting and unequal. When from any cause the supply of blood preceding the ventricular systole is less than usual, the pulse, which represents the systole of the left ventricle, is unusually small and weak. Under these circumstances the heart acts with irregularity. Intermittency of the pulse may represent intermittency of the heart's action, but it is sometimes observed where there is not a corresponding interruption in the heart's action.



Intermittency of the pulse is a peculiarity of the circulation in some persons. It is not, therefore, intrinsically a symptom of disease. Weakness, smallness, and irregularity, as well as intermittency, and even inequality, it is to be borne in mind, are not distinctive of mitral or other valvular lesions. All may occur in functional disorder of the heart. A distinguishing point pertaining to functional disorders is, they occur only during paroxysms of palpitation presenting the distinctive features of palpitation from nervous disorder, whereas, occurring in connection with valvular lesions, they are either constant or frequently recurring, and unattended by the features which distinguish functional palpitation.

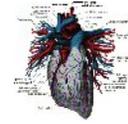
Aortic lesions giving rise to obstruction are not characterized by a pulse weakened in proportion to the diminishing quantity of blood propelled from the left ventricle. In cases of aortic obstruction, when great enlargement of the heart has ensued, and especially when the muscular power of the organ is much diminished by either dilatation or fatty degeneration, the pulse may become irregular, intermitting, and unequal. Irregularity and inequality are thus, in some measure, diagnostic of lesions affecting the mitral orifice, as contrasted with those affecting the aortic orifice; but it is to be borne in mind that they occur in cases of dilatation, fatty degeneration, etc., uncomplicated with any affection of the valves or orifices.

Slowness of the pulse, that is, the gradual expansion of the artery, as distinguished from quickness (not frequency), denotes the prolonged systole of the left ventricle, and is distinctive of aortic obstruction. In cases of aortic lesions, with considerable insufficiency, the jerking or collapsing feature of the pulse is usually strongly marked. It is not, however, a symptom of aortic obstruction.

Prolongation of the interval between the pulsation of the radial artery and the heart's impulse, is significant of aortic regurgitation.

#### **TURGESCENT OF THE VEINS AND VENOUS PULSATION.**

Abnormal fullness of the veins occurs whenever there is an obstacle to the free entrance of blood into the right auricle. An obstacle exists when the right auricle is already full, or distended with blood. The most direct and efficient causative condition is contraction of the tricuspid orifice. Obstruction to the pulmonary circulation from emphysema of the lungs occasions an undue accumulation of blood within the right ventricle and auricle, leading after a time to enlargement, and a consequent obstacle to the free transmission of blood to the systemic veins. Pressure on the vena cava by an intra-thoracic tumor produces obstruction and venous turgescence. Thus, marked fullness of the veins of the head and neck is



observed in some cases of aneurism of the arch of the aorta. As a symptom, then, this is not distinctive in itself of cardiac disease, nor, when it proceeds from the latter, does it point to the seat, or even denote the existence of lesions of the valves or orifices, but rather that the right auricle is either dilated or over distended.

Venous turgescence is usually most conspicuous on the neck, in the jugulars and the venous branches communicating with them. In extreme cases the vessels present a varicose appearance.

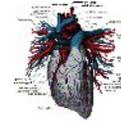
If the obstruction at the right auricle be considerable, when pressure is made on a vein high on the neck, the vessel remains distended below the point of pressure, and may be refilled after the contents of the vessel have been pressed backward by the finger, showing not only a resistance to the gravitation of the blood, but a reflex current.

This symptom, taken in connection with the physical signs which establish the nature and seat of organic lesions of the heart, possesses considerable value.

Venous pulsation is a diastolic movement of the veins, which is visible, and sometimes even appreciable by the touch. The movement is due to a retrograde current or impulse communicated to the blood contained in the veins. It is to be distinguished from the movements occasioned by respiration, with which every one is familiar, and also from those communicated by subjacent arteries. - With the latter it is liable to be confounded, unless care is taken to avoid this error. The error may be avoided by making moderate pressure over the veins at the lower part of the neck. Pressure here, not sufficient to stop the circulation in the arteries, will arrest pulsation of the veins. The movements due to respiration may be arrested by causing the patient to suspend breathing for a few seconds. Pulsation is rarely observed elsewhere than in the veins of the neck. It is often limited to the veins just above the clavicles. It is now admitted that venous pulsation, if marked or extensive, is, in a certain proportion of cases, evidence of tricuspid degeneration. (Flint.)

The conditions most favorable for the production of the venous pulse, are free tricuspid regurgitation and hypertrophy of the right ventricle.

The systolic contraction of the right auricle may cause a movement of the blood in a retrograde direction sufficiently to give rise to this symptom. Experimental observations show that the auricular systole precedes the ventricular. A venous pulse due to auricular contraction should therefore precede slightly the arterial pulse, or apex-beat of the heart.



Placing the finger over the apex of the heart, the apex beat, if it be felt, will be found to follow the venous pulse in the neck, provided the latter be produced by the contraction of the auricle; whereas if the venous pulse be due to tricuspid regurgitation, it will be either synchronous with, or lagging a little behind the apex-beat. By placing the finger over the carotid, and the eye fixed upon a pulsating vein, it is easy to determine whether the venous pulse precedes or occurs simultaneously with the beating of the artery.

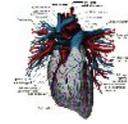
### **CARDIAC DROPSY IN RELATION TO VALVULAR LESIONS.**

*General dropsy*, when dependent on disease of the heart, is called cardiac dropsy. It may be due to other pathological conditions, and especially to disease of the kidney, when it is distinguished as renal dropsy. It appears first, as a rule, in the form of edema of the feet and ankles, which gradually extends over the lower extremities. (Edema of the face follows, or may occur simultaneously with, or precede, the edema of the feet. So enormous is the swelling sometimes, that erythema and gangrene may occur. The surface cracks or ulcerates, and allows the liquid to flow away. The surface assumes a dusky hue, due to venous congestion, which distinguishes this variety of dropsy from renal dropsy, but both may be combined. Effusion into all the serous cavities may occur. The occurrence of dropsy has reference to the situation, nature, and degree of valvular lesions. Tricuspid contraction is the lesion which most directly and efficiently tends to give rise to this effect; but this lesion is exceedingly infrequent.

The occurrence of dropsy, other things being equal, in cases of mitral or aortic lesions, will depend, not immediately on the nature and extent of these lesions, but on conditions induced thereby which relate to the right side of the heart. Dilatation of the right ventricle, or weakness from fatty degeneration and other causes, precedes, in the great majority of cases, the occurrence of dropsy.

Dropsy, therefore, is an event which usually belongs to an advanced period of organic disease, and it is frequently a precursor of fatal termination. Enlargement of the right side of the heart, especially if accompanied by degeneration of structure or great muscular weakness, may induce dropsy when valvular lesions are not present. The occurrence thus, when aortic or mitral lesions are present, is evidence that the effects of these lesions on the right side of the heart, which have been considered under another head, have taken place.

*Embolism.* Arterial obstructions by vegetations or fibrinous masses detached from the valves or orifices of the heart. The obstruction is



carried onward with the current in the course of the circulation, until it reaches an arterial trunk smaller than its own dimensions. Here it is arrested, obstructing the passage of blood in the artery and its branches beyond the point at which they are lodged.

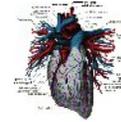
Emboli from within the heart, in cases of chronic valvular lesions, are derived, in the vast majority of cases, from the left ventricle, since lesions affecting the valves of the right side of the heart are exceedingly infrequent.

Emboli derived from within the heart are sometimes calcareous. They may cause apoplexy, coma, paralysis, and softening of the brain, by obstructing the cerebral circulation. They may even cause typhoid symptoms and petechial eruptions.

#### **SYMPTOMS AND PATHOLOGICAL EFFECTS REFERABLE TO THE RESPIRATORY SYSTEM.**

The phenomena referable to the lungs, irrespective of associated or inter-current pulmonary affections, depend, for the most part, on vascular engorgement of these organs. Congestion of the lungs is an immediate result of an impediment to the free admission into the left auricle, of blood from the pulmonary veins. An impediment exists whenever the left auricle is over-distended with blood; and over-distension of this auricle occurs as a consequence of any interruption of the blood-currents through the orifices of the left side of the heart. Obstructive lesions at the mitral orifice especially give rise to pulmonary congestion. Aortic lesions, obstructive and regurgitant, also, sooner or later, are followed by over distension and dilatation of the left auricle and consequent congestion of the lungs. The engorgement of the lungs arising from valvular lesions gives rise to important pulmonary symptoms without any other super-induced affection of these organs. The most prominent of these symptoms are dyspnoea, cough, muco-serous expectoration, and haemoptysis. Certain pulmonary affections appear in some cases to be dependent, directly and exclusively, on over-distension of the vessels, namely, extravasation of blood, or apoplexy of the lungs, and edema. The existence of valvular lesions thus involves a liability to bronchitis, pneumonitis, pleurisy, and emphysema.

*Dyspnoea* is a symptom more or less prominent in the great majority of cases. It occurs earlier and is more marked in cases of mitral than aortic lesions, because the former tend more directly, and in a greater degree, to engorgement of the pulmonary vessels. In most cases of either mitral obstruction or regurgitation, dyspnoea is the first symptom which occasions inconvenience. The patient often complains of this symptom



alone, or chiefly, for a considerable period. In cases of aortic lesions it occurs later, and is oftener preceded by palpitation or other symptoms, referred by the patient to the heart.

The intensity of dyspnea varies greatly in the different cases of valvular affections in which this symptom is present, and in the same case at different periods. It consists, at first, of a slight deficiency of breath on exertion. This progressively increases until active exercise becomes insupportable. Other cases are characterised by paroxysms of difficult breathing when not provoked by exercise, and by more or less difficulty which is constant. Affections of the pulmonary organs, super-added to congestion, contribute to increase the amount of dyspnoea. This dyspnoea has been designated as *orthopnea* when extreme, and also as *cardiac asthma*.

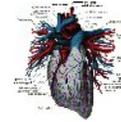
*Cough* and expectoration are usually present when valvular lesions have induced considerable pulmonary engorgement. The expectoration is muco-serous in its character. The prominence of the cough and the character which the expectoration presents will serve to indicate, on the one hand, merely congestion of the bronchial membrane, or, on the other hand, a super induced pulmonary affection.

*Haemoptysis* is a symptom which occurs in a pretty large proportion of cases of valvular lesions attended with a marked degree of engorgement of the lungs.

Hemorrhagic extravasation, pneumorrhagia, or pulmonary apoplexy, involves the same pathological explanation as haemoptysis, but occurs much more frequently than the latter. It is an occasional effect of engorgement. In most of the cases in which it occurs there exists mitral contraction.

Haemoptysis and hemorrhagic extravasation occasionally co-exist.

*Pulmonary edema* is another pathological effect attributable directly to over-distension of the vessels of the lungs. This event takes place much more frequently than extravasation of blood. Occurring alone, or irrespective of dropsical effusion elsewhere, it belongs among the events incident to an advanced stage of valvular lesion. As a rule, whenever events of importance referable to the respiratory system become developed, valvular lesions have existed for a considerable length of time, and have led to more or less enlargement of the heart. Certain pulmonary affections, not due directly or exclusively to the congestion proceeding from valvular lesions, are more apt to occur under these circumstances than if the latter did not exist. The lesions thus indirectly



predispose to the development of these affections. Emphysema of the lungs is one of these affections.

The congested state of the bronchial mucous membrane . renders it prone to inflammation. *Bronchitis* is a frequent complication of valvular lesions after they have induced pulmonary engorgement. This complication developed when the lungs are already congested, in connection with cardiac lesions, dyspnoea becomes more or less prominent. The co-existence of bronchitis not only adds to the distress incident to valvular lesions, which interfere with the pulmonary circulation, but, if severe or extensive, often places the patient in immediate danger—the accumulation of mucus within the bronchial tubes, together with the diminished calibre of the tubes from swelling of the membrane, inducing suffocation.

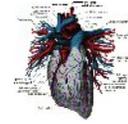
Dropsical effusion into the pleural sacs rarely occurs to much extent independently of general dropsy. When it does take place, the compression of the lungs by the effused liquid abridges their functional capacity, aggravates the dyspnoea, and hastens a fatal issue.

#### **SYMPTOMS AND PATHOLOGICAL EFFECTS REFERABLE TO THE NERVOUS SYSTEM.**

It is a common impression that various symptoms denoting cerebral disorder, such as cephalalgia, vertigo, tinnitus aurium, muscae volitantes, etc., etc., are usually observed, sooner or later, during the progress of cardiac disease. These symptoms are often observed in persons not affected with disease of the heart, and hence would possess small diagnostic significance were they more frequently present; but, the truth is, they occur in only a small proportion of cases, at least in a marked degree.

Valvular lesions, accompanied by enlargement of the heart, have been supposed to involve a strong liability to apoplexy. We may conclude that apoplexy is very rarely due, distinctly or exclusively, to the condition of the heart, but that the changes which the cerebral vessels undergo, or other circumstances, generally play an important part in its production. And of the two conditions which tend directly to affect the circulation in the brain, namely, obstruction at the right side of the heart, and hypertrophy of the left ventricle, the former must be considered as most likely to lead to serious results.

Apoplexy occurring in connection with cardiac lesions, generally depends on extravasation of blood. Under these circumstances, paralysis of course ensues; if the apoplectic attack does not prove suddenly fatal, the



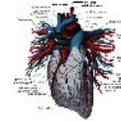
patient is found to be hemiplegic. Vegetations, or masses of fibrin from within the cavities of the left side of the heart, being detached, are liable to become fixed in an artery of the brain, and give rise to apoplectic seizures with hemiplegia, or to the latter without the former.

Arterial obstruction gives rise to apoplectic phenomena and paralysis, by lessening the supply of blood to certain portions of the cerebral substance.

Aside from apoplexy and paralysis, various symptoms already mentioned, namely, pain, vertigo, tinnitus, etc., are occasionally associated with valvular lesions. Apoplexy and paralysis, depending either on an extravasation which involves a morbid condition of the cerebral vessels or an arterial obstruction from emboli, are usually not preceded by premonitions referable to the brain. This is a practical point to be borne in mind, in order that needless apprehension be not entertained on the part of physician or patient, and measures employed with a view of warding off an attack of apoplexy or paralysis, which, being uncalled for, will be likely to be not only unnecessary but injudicious. In the cases in which there is of necessity more or less cerebral congestion, the superficial veins of the neck being swelled or pulsating, marked cerebral symptoms are by no means uniformly present. Headache, dullness of the intellect, listlessness, drowsiness, etc., are symptoms which, in a certain proportion of cases of this description, are more or less marked, and are probably due to abnormal fullness of the cerebral veins. These symptoms of cerebral oppression are sometimes marked in cases in which, either from obstruction of the right side of the heart, or imperfect oxygenation of the blood, the prolabia and surface of the body present a livid appearance.

The *sleep* of patients affected with cardiac disease is frequently imperfect. They complain often of frightful dreams. This is generally associated with dyspnoea, and appears to be owing to disturbed respiration rather than to disordered cerebral circulation. Moaning in sleep is a symptom observed in some cases when the patient is not wakeful nor conscious of any morbid sensations.

A symptom which may be included among the events referable either to the nervous or respiratory system, is noticed in some cases, namely, a choking sensation analagous to that experienced in painful emotions when an effort is made to refrain from weeping. The mental condition of patients affected with organic disease of the heart may be noticed in this connection. The contrast presented, in this respect, with patients affected with merely functional disorder, has been already referred to. Persons with organic disease which has given rise to grave symptoms,



such as palpitation, dyspnoea, dropsy, etc., are generally free from excitement and apprehension. They often seem to be remarkably indifferent or apathetic.

#### **SYMPTOMS AND PATHOLOGICAL EFFECTS REFERABLE TO THE DIGESTIVE SYSTEM AND NUTRITION.**

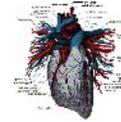
The phenomena manifested in connection with the digestive apparatus, in cases of valvular lesions, proceed from congestion of the systemic venous system. Assuming the lesions to be either mitral or aortic, or both, congestion of this order of vessels depends on the effects of these lesions on the right side of the heart. It may be stated that, as a rule, the systemic congestion is not sufficient to give rise to important symptoms or pathological effects until dilatation of the right ventricle has taken place, involving over distension of the right auricle, and, in certain cases, tricuspid regurgitation. The impediment to the free admission of blood from the venae cavae into the right auricle, occasions cerebral congestion, as has just been seen. The congestion throughout the body thus induced, as has also been seen, gives rise to venous turgescence and general dropsy. The abdominal viscera indirectly participate in the effects of this impediment at the right ventricle, owing to their vascular relations to the venae cavae being through the intervention of the portal system. In view of the anatomical peculiarities of the latter, it is obvious that, of the organs comprising the abdominal viscera, the liver is first affected by an obstruction at the right side of the heart. The pressure of the portal branches on the biliary tubes may occasion an undue accumulation of bile in the latter. (Flint.)

I have observed obstinate cases of jaundice in several cases of valvular disease of the heart.

Sections of the organ then present that peculiar aspect commonly known as the "nutmeg liver."

Extending beyond the liver to the portal vein and its radicles, the congestion affects finally the stomach and intestines, the spleen and the pancreas. Congestion of these organs is a secondary effect due directly to the mechanical obstacle to the passage of blood through the liver.

The successive steps, then, in the series of congestive effects dependent on valvular lesions are: obstruction or regurgitation at either the mitral or aortic orifice, or at both situations; dilatation of the right ventricle, following engorgement of the pulmonary vessels; over-distension of the right auricle, with or without tricuspid regurgitation, involving an impediment to the free transmission of blood from the vena cavae;



congestion of the hepatic veins and their radicles, the intra-lobular veins; congestion of the terminal branches of the portal vein; congestion of the vena portae and its radicles in the abdominal viscera, these vessels furnishing the blood for the portal circulation.

Enlargement of the liver is an occasional effect incident to valvular lesions, as well as to enlargement of the heart without these lesions.

Cirrhosis is not a frequent complication of valvular affections of the heart. The event denoting co-existing cirrhosis is hydroperitoneum in a degree disproportionate to the general dropsy.

There are many other disorders in a measure incident and common, such as dyspepsia, hemorrhage from the bowels, hemorrhoids, enlargement of the spleen, etc., which you can study at your leisure in the various works on diseases of the heart.

#### **SYMPTOMS AND PATHOLOGICAL EFFECTS REFERABLE TO THE GENITO-URINARY SYSTEM.**

The renal or emulgent veins terminating in the vena cava descendens, the kidneys must participate in the congestion of the systemic venous system arising from an impediment at the right side of the heart. These organs are affected more directly than the abdominal viscera, which are tributary to the portal vein. So soon as valvular lesions have led to the anatomical conditions involving an obstruction extending to the vena cava? and their branches, renal engorgement necessarily ensues. Congestion of these organs is generally observed in examinations after death in valvular disease accompanied by dilatation of the cavities of the right side of the heart. Venous congestion, under these circumstances, does not uniformly occasion a greater flow of urine than in health. Indeed, the quantity of urine is oftener diminished than increased, a fact going to show that the diuresis depends on the amount of blood conveyed to the kidneys by the arteries, or on conditions pertaining to the blood itself, rather than on accumulation in the renal veins. The urine is frequently scanty, even when the venous obstruction is sufficient to give rise to general dropsy. We may have albuminuria, owing to the mechanical pressure incident to venous congestion. It does not constitute evidence of structural changes of the kidney, or Bright's disease, when it is in small quantity, transient in duration, and notably fluctuating. (Flint.)

Moreover, hyaline casts are wanting when albuminuria is only a symptom of disease of the heart, and the specific gravity of the urine, instead of being diminished, is usually increased.



The degenerations of structure included under the name Bright's disease, are sometimes associated with valvular lesions of the heart.

The co-existence of structural degeneration of the kidney is shown, as already intimated, by the degree and constancy of the albuminuria, and by the different varieties of casts of the uriniferous tubes, which the sediment of the urine is found to contain when subjected to microscopical examination. The tendency to general dropsy is augmented by this complication; renal and cardiac dropsy are, in fact, combined. As regards the generative functions, Flint has observed, that in cases in which lesions had existed for a considerable period before puberty, the genital organs, including, in females, the mammary gland, attained to a full development.

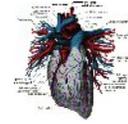
#### **SYMPTOMS AND PATHOLOGICAL EFFECTS REFERABLE TO THE COUNTENANCE AND EXTERNAL APPEARANCE OF THE BODY.**

Lividity of the prolabia and face, which may be apparent over the whole surface of the body, denotes either venous congestion or imperfect oxygenation of the blood. The latter is incident to the pathological effects taking place in the lungs; the former, to obstruction at the right side of the heart. But both conditions may be conjoined. A dusky hue of the face, combined with edema, is quite distinctive of cardiac, as contrasted with renal, dropsy. I need not mention the painful expression of the countenance in a patient suffering from what is known as cardiac asthma. Dr. Hope gives a graphic picture of the terrible sufferings of such patients.

Some cases of valvular disease are characterized by pallor of the complexion. The co-existence of Bright's disease is likely to lead to this effect. But it is observed in some instances when the kidneys are not affected. It then depends on alterations of the blood proceeding from other causes.

An anemic condition is incident, in a certain proportion of cases, to cardiac disease uncomplicated with an affection of the kidneys. Analysis of the blood shows a notable deficiency of albumen, together with a reduction in the relative proportion of blood corpuscles and fibrin.

The accumulation of blood in the right chambers of the heart induces, in addition to abnormal fullness of the superficial veins, a congestive state of the capillary vessels, causing the surface of the body to present an appearance like that produced by exposure to cold. The redness disappears on pressure, and returns, more or less slowly, after the pressure is removed. The appearance is not unlike that observed in



typhus and typhoid fever, although the rationale is by no means the same.

Erythema, affecting portions of the surface, occurs in some cases not associated with edema. The lower extremities are most apt to be affected. Flint met with an instance in which the extremities of the fingers and a portion of the palms presented permanently an erythematic redness. On the other hand, in a patient with considerable mitral regurgitation, the fingers at times were bloodless, being as pallid and cold as those of a corpse.