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INAUGURAL DISSERTATION

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*Hepatitis.*

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## Inflammation of the Liver.

The knowledge of the Anatomy & Physiology of a part, being an indispensable prerequisite to the study of the diseases of that part, we think it proper to give a brief outline of the Anatomy & Functions of the viscus; the inflammation of which, is to be the subject of these pages.

The Liver is the largest glandular structure in the human body, & belongs to that class which receives the name of conglomerate glands. It is placed obliquely in the superior, & posterior part of the abdominal cavity; & occupies the right hypochondriac region, - extends across the epigastric, & passes in to the left hypochondriac. It has a convex, & a concave surface; The former,



looking upwards & forwards. The latter, downwards & backwards. It also has two borders. An anterior, which is sharp & is directed forwards, & is marked by a deep notch, through which, passes the remains of the Umbilical Cord.

The posterior is rounded, & is directed upwards, & backwards. It is in relation superiorly, & posteriorly, with the diaphragm. Inferiorly with the Stomach, ascending portion of the duodenum, Transverse Colon, right Supra Renal Capsule, & right kidney. It sometimes extends so far into the left hypochondriac Region, as to be in contact with the right extremity of the spleen. Its free border corresponds with the lower margin of the ribs. It is held in situ by five ligaments, four of which, are



composed of folds of Peritoneum, & one, the remains of the Umbilical Cord. On its under surface are five fissures, which divide the gland into five lobes. 1<sup>st</sup>, The Longitudinal Fissure, passing from the notch on the anterior, to the posterior border; dividing it into a right, & a left lobe. 2<sup>nd</sup> Fissure of the Ductus Venosus, which is a continuation of the Longitudinal Fissure, separates the left Lobe, from the Lobus Spigelii. 3<sup>d</sup> Transverse Fissure, which separates the Lobus Spigelii, from the Lobus Quadratus & the Lobus Caudatus, from a portion of the right Lobe. 4<sup>th</sup> Fissure for the Gall Bladder, which separates the Lobus Quadratus, from the right Lobe. 5<sup>th</sup> Fissure for the Vena Cava, which is situated between the Lobus Spi-



=gellii, & the right Lobe. There are five vessels, which enter into the structure of the liver. 1<sup>st</sup>, The Hepatic Artery, is a branch of the Coeliac Axis, which is the first large branch given off by the Abdominal Aorta. It divides into two large branches, which enter the liver, at the Transverse Fissure, & is thence distributed, one branch to the right, the other to the left side of the Organ. 2<sup>nd</sup>, Vena Portae, which is formed by the junction of the Splenic, & <sup>the</sup> Superior mesenteric vein, enters the liver at the Transverse Fissure, where it divides into two primary, or lateral branches, & then into numerous secondary branches, which are distributed through the gland; giving off vaginal & interlobular veins.



3<sup>d</sup> Hepatic Vein, which commences at  
The circumference of the Organ, &  
passes backwards to open into the  
Vena Cava. 4<sup>th</sup> Hepatic ducts. Com-  
mon excretory duct of The Liver &  
Gall Bladder, Cystic duct, & Hepatic  
duct. The Ductus Communis Chole-  
-cus, commences at the junction of  
The Hepatic & Cystic <sup>the</sup> duct, is about  
three inches in length, & opens through  
a papilla, on the inner surface of  
The perpendicular portion of the  
duodenum. The Cystic duct, is the  
excretory duct of The Gall Bladder, is  
about one inch in length, & opens  
into The Ductus Communis Chole-  
-docus. The Hepatic ducts commence  
on, or within, The Malpighian bodies;  
Converging towards each other, they



pass along the Portal Canals, & unite in the Transverse Fibre, forming one vessel, which empties into the ductus Communis Choledocus.

3<sup>rd</sup> Lymphatics, which are divided into superficial, & deep. The former, are found distributed throughout the entire areola structure of the proper Capsule of the liver. The latter, take their course through the Portal Canals. They all pass out of the organ to unite with the glands, which are contiguous.

The nerves of the liver come from the systems of Organic, & Animal life.

The Functions of the liver, we may at once conclude, are of the utmost importance to the Human Organism;



since we are acquainted with its great size, & the superabundant amount of blood, which it receives, when compared with the other Viscera of the body; & the rapidly ill, & even fatal effects, which attend diseases of this organ. Its chief offices may be regarded, as digestive, & excretory. The bile being alkaline, when it is mixed with the Chyme in the intestines, serves to neutralize the acidity of that liquid, which acidity, it receives from the Gastric juice. Again, as it mixes with the Pancreatic fluid, it shares greatly in the emulsifying power, by which the fatty matters of the aliment, are reduced to such a degree of division as to render them more absorbable.



It is excretory, in separating from the blood portion, of the Portal blood, the old blood cells, or disintegrated particles of the economy, which are found in the blood. Thus a quantity of Hydrocarbonaceous material is obtained, & is thence, in part at least, discharged through the Alimentary Canal, acting at the same time, as a stimulant to the peristaltic motion of the bowels; it aids in the removal of the feces. Having briefly, & imperfectly sketched the Anatomy, & Functions of the Liver, we propose to examine one of its most common diseases, viz:

### Inflammation.

This disease is usually commenced with pain, & tenderness in the He-



-patic region. The pain varies very much in different cases, from lancinating, & torturing to a mere vague uneasiness in the right hypochondriac, or epigastric region, thus marking the distinction between the acute, & the chronic form. It may be confined to one particular spot in the gland; or may extend itself, diffusely, throughout it. Or it may be wandering, sometimes in one part, sometimes in another. It is not usually confined to the inflamed viscus, but more frequently is felt in the right shoulder, occasionally, affecting the subscapular, or clavicular regions. It may be felt in the left shoulder, when the left lobe is diseased. It is sometimes felt in the parietes of the chest,



or in the head. These wandering pains are purely sympathetic, & must be carefully diagnosed from those, which are felt in diseases of these parts. This can be done by manipulation, or by causing the patient to use the limb, which would greatly increase the pain in it, if it be due to disease in that part.

When it becomes necessary to ascertain whether the disease is in the liver, or some contiguous organ, the patient should be placed on the back, with the shoulders elevated, & the thighs flexed, so as to relax the abdominal muscles. Then make pressure below the liver with the fingers extended, after which, flex them so as to press it against the diaphragm above. By thus applying force to the organ, we may, in most cases,



determine, whether it is inflamed, or not.  
This will also distinguish between inflammation of The Colon, & <sup>the</sup> Liver.  
Inspiration will cause increase of pain, in consequence of the descent of the diaphragm upon the liver. The decubitus is peculiar, the patient generally lying on the right side, or on the back, inclining to the right. When on the <sup>lying</sup> left side, the organ will gravitate that way, & by this will cause increased tension of the ligaments, & consequently increased pain. When it is enlarged, it causes too much pressure on the stomach, while lying on the left side, thereby producing gastric uneasiness, or irritability. It is sometimes the case, that the individual finds more relief in the sitting posture; ~~inclining~~



forwards at the same time. The enlargement of the liver may be slight, or very great. Here, we must guard against error in diagnosis, by not mistaking a misplacement, for an enlargement. By the aid of percussio, we may generally decide whether the organ is in the normal, or <sup>in</sup> an abnormal position. When there is much enlargement, there will be a bulging of the lower ribs, which we may readily detect by stripping the patient, & taking a view of the body from below upwards, & comparing the two sides. Or, by actual measurement from the inferior end of the Eniform Cartilage, to the spinous process, of some one of the Dorsal vertebrae; then measuring the opposite side from the same points, & noting



The difference. When the enlargement extends below the ribs, & the bowels are empty, & the abdominal walls not very thick, the lower margin of the Gland can be distinctly felt, by having the shoulders thrown forward, & the thighs flexed on the abdomen.

Cough is sometimes an attendant of enlargement of the liver, caused by its encroachment on the diaphragm, which, in this way, is pressed up against the right lobe of the lungs; or its weight may cause it to fall too far down, & in this way draw the diaphragm from its normal place, thus irritating the lungs. The Cough may, or may not, be attended with expectoration. It is generally dry. There may be difficulty of breathing, caused by compres-



-ion of the right lobe of the lungs.  
Or palpitation, by interfering with  
the action of the heart. The Stom-  
-ach may be much disturbed, or only  
slightly nauseated. There is more gen-  
-erally much gastric distress, & vom-  
-iting, sometimes of bilious matter,  
sometimes, simply of matter, which  
has been taken into the stomach.  
When the liver is greatly congested,  
it may produce ~~Haematemesis~~, by cau-  
-sing congestion of the mucous mem-  
-branes of the stomach. The bowels are  
usually in an unhealthy state,  
sometimes much constipated - again  
quite active; thus, indicating the  
deficiency, excess, or <sup>a</sup>perverted state  
of the bile. The conjunctiva, & skin  
are yellow, or yellowish. The urine



is of a deep yellow color. The tongue is furred, & the coating is yellowish, attended by a bitterish taste. The last symptoms indicate that the disease is not located in the superficial part of the organ alone; but that the parenchyma, or body is involved in the morbid action; & that the blood is loaded with the elements of the bile, which should be separated by the liver. The patient, occasionally, has much mental depression, sometimes amounting to insanity, thereby, showing the sympathy between the brain, & the liver. Or, more probably, it is due to the ill effect of the blood on the brain, when it has an excess of bile as one of its constituents.



Fever is almost always an accompaniment in this disease. It is usually preceded by rigors, as is the fever of other local phlegmasia. It may be very high, or quite the reverse, showing itself by slightly accelerated pulse, flushed face, heat of skin, &c. being more, or less periodical. It sometimes assumes a low, slow form, & is continued. It is not a constant symptom as cases of abscess have occurred without it.

The duration of Hepatitis is exceedingly variable, depending very much on the treatment, which it receives. It may exist only for a few days, or continue for years. It may terminate in resolution, which is more properly, a termination of



congestion, & not of inflammation;  
for resolution is short of inflamma-  
tion. Or, it <sup>may</sup> terminate in suppu-  
ration, induration, or gangrene.

The acute, may pass into the Chron-  
ic form, which may ultimately  
yield to proper remedies, or may  
at last, terminate in abscess, or  
some other organic disease. This is  
more likely to be the result in hot  
climates, where the disease is more  
frequent, & where the exciting cause  
is constantly in action. Suppurate-  
ion is known to commence by  
rigors, or chilliness, & acceleration  
of pulse, though it may be softer,  
& weaker, thereby causing relaxa-  
tion of the surface, & consequently  
a tendency to perspiration, especial-



-ly while the patient is sleeping.

There will be a weighty, or dragging feeling felt in the region of the liver, in connection with a throbbing sensation in the same part.

Pus having been formed, according to a Physiological law, it makes an effort to escape from its cavity.

Abscess of the liver may be discharged in several ways. 1<sup>st</sup>. It may cause adhesion of the peritoneum, & then pass through the parietes of the abdomen, in any part of the Hepatic region. 2<sup>nd</sup>. If the abscess be in the upper part of the viscus, the matter may pass through the diaphragm into the Pleural Cavity, causing Empyema, & may then be discharged through the walls of the



Chest: Or may make its way into the  
parenchyma of the right lobe of the  
lungs, producing Pneumonitis, thence  
into the Bronchial Tubes, inducing  
Bronchitis; & be finally expectora-  
-ted, or <sup>it may</sup> suffocate the patient, Having  
reached the substance of the lungs,  
it may again pass the Pleural Cap-  
-ity, & be discharged from the surface  
of the body. When it is situated  
upon, or in the lower portion of  
the liver, the matter may pass into  
the intestines, or stomach, the Per-  
itoneal investments of these viscera  
becoming agglutinated, as the case  
requires. When it enters the stom-  
-ach, it is more probably vomited.  
When it is discharged into the Col-  
-on, it escapes per anum. When it



passes into the duodenum it may be vomited, or passed off by stool.

The matter may pass into the biliary ducts, & escape. It may get into the Vena Cava, Pericardium, or Pelvis of the kidney. Finally, it may pass into the Peritoneal Cavity, consequently, inducing, almost certainly, a fatal Peritonitis.

Inflammation of the liver is a fruitful cause of other diseases. causes. As a high degree of Temperature in the body, when long continued, causes an increased proportional quantity of Carbon to be thrown off by the liver; it becomes evident, that continued heat would cause Hepatitis, by stimulating the organ to perform a superabundant amount of work. Rapid, & great changes from



heat, to cold, or from cold to heat, with equal changes in regard to moisture, may be exciting causes; in consequence of the effects on the circulation. Any thing, which may produce venous congestion may produce the disease; as diseases of the heart, obstructions to the Vena Cava, &c. Miasmatic diseases, which are attended with great internal congestions, are fruitful causes of Hepatitis. Diseases of the stomach, or bowels may act as causes, by changing the quantity, or constituents of the Portal blood. In this way intemperate eating, or drinking may excite inflammation in this organ. The inordinate use of medicines, which act on the liver, may cause the disease. Injuries received in other parts of the body, or extremities, or falls, or blows, which



injure the gland itself, may act as exciting causes. The more direct, & violent causes, usually produce the acute, whereas, those, which act indirectly, & less violently, produce the chronic form.

Treatment. This has of necessity to be antiphlogistic, in the early stage, & when it is of the acute form, & in a strong constitution. Those remedies should be used which have the capacity, or tendency to lessen the plasticity of the blood, & which will greatly reduce the excitability of the heart, & arteries. To meet these indications, blood-letting should be our first remedy.

When the case has not been in progress more than two or three days, & the pulse is rapid, full & hard, - the skin dry & hot, blood should be drawn from



a large orifice, from one, or both arms, at the same time, until there is an approach to syncope. If it be necessary to take a large quantity of blood, the orifice should not be so large. This will reduce the fever by lessening the amount of blood, more especially the red corpuscles, & will also reduce the arterial excitement; thereby inducing a condition of the system more favorable to the action of other remedies. If reaction should supervene with increased violence, it would be proper to repeat the bleeding; but the relaxed state of the system ought to be preserved by the proper use of other remedies. When the case will not bear general bleeding, it will be highly proper to use cups, or leeches, applied over the hepatic region. It may



be beneficial to cord the extremities, & in this way prevent the venous return, to an extent, for a short time, giving the inflamed gland time to relieve itself of its great excess of blood. This latter mode is especially applicable in cases, which require, that the strength should be har- bingered. After the proper results of ven- esection are obtained, purgatives should be resorted to. Those articles should be chosen, which are known to have the capacity to act in the blood as defi- brinizing agents, & which will di- rectly, or indirectly unload the Portal vessels; & which may act as revul- sives to the inflamed gland.

Calomel may be given in a full dose, & should be followed in four, or five hours by an active Hydrogogue



cathartic. Or, it may be combined with some other purgative, as Gallap, Scammony &c. The Blue Pill may be substituted for the Calomel when the latter is contraindicated. If this plan is inadmissible on account of gastric irritability, Calomel must be used in smaller doses, & in combination with Opium every night, followed in the morning by a saline cathartic; so as to keep the bowels well opened. If the Stomach can bear it, the best antiplastic remedy, we can use is The Tartarized Antimony, which should be given in solution, & in such minute doses as not to cause emesis, nor purging. It has also a very salutary effect as an arterial sedative, & general relaxant of the system, in consequence, of its



blood action. To allay nervous irritability,  
& procure rest for the patient, at night,  
which is highly necessary, we may use  
Dover's Powder. If there is much sickness  
at the Stomach, & the Skin is inactive,  
it would be proper to use the refriger-  
ent diaphoretics, to restrain such  
sickness, & to arouse the secretive  
power of the sudoriferous glands.  
If there is no indication for diapho-  
retics, the nausea may be treated with  
revulsives, Carbonic Acid water, Prepara-  
tions of Opium &c. If there be no or-  
ganic disease of the Stomach, small  
doses of Kresote would be useful in  
controlling the gastric uneasiness.  
For heat, & inaction of the Skin, cold  
sponging would be proper, or it would  
be beneficial to wash the patient with



Vinegar water. Alkaline solutions would probably be better. In the first, & highly inflammable stage, large fomentations, or poultices should be kept to the side, being so medicated as to allay pain, as much as possible. After this, if the symptoms do not appear quite favorable, a large blister should be drawn over the region of the liver, & the mercurial course continued, with great caution, to the approach of Thyalism.

In the Chronic form of the disease the above form of treatment should be modified, & continued longer. The disease in all cases is to be treated with reference to its cause. If it be due to miasmatic disease, it is proper to remark, that we need not expect



any good results from the use of antiperiodics until the local inflammation has <sup>been</sup> subdued. The diet of the patient should be carefully attended to, as it is of vital importance to regulate the quantity, + quality of the Portal blood. It is to be proportioned according to the strength, + inflammatory state of the system. Farinaceous, + easily digestible articles are to be chosen, the object being to use such aliment as will be nutritious, + at the same time not irritating, nor stimulating.

When it becomes evident, that suppuration has commenced, all the depletive measures are to be arrested; particularly the use of Mercury is to be abandoned. The indication is to has-



- ten the proceps, + sustain the patient until nature can effect the cure, if effected at all. Tonics should be employed, the best of which is probably the Vitro Muratic Acid. This may be used internally, + externally. Nervous exertement is to be remedied by the use of anodynes. If Opium should be inadmissable, Conium, Hyosiamus, Stramonium, &c may be substituted. Large poultices should be kept constantly to the side for the purpose of moderating the pain, + inviting the matter to the surface. If it takes an internal direction, we can only strive to sustain the patient, + meet the various indications in the case, as they present themselves. If it makes its appearance on the surface in a well



defined, circumscribed, & fluctuating tumor; we may hope that it will be discharged externally. If all the evidence in the case should lead us to believe, that adhesion was fully formed between the peritoneal folds, & the constitutional powers of the patient were much impaired, it would be proper to hasten the discharge, by making an incision into the abscess with a cutting instrument.

But if the strength would justify an indulgence of the natural course, it would be better to wait for it, as it would throw off the matter by very minute openings, & in this way would prevent the ingress of atmospheric air; which prevention is extremely necessary.