

AN
INAUGURAL DISSERTATION

ON
Biliary Derangements

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To understand the cause & frequency of Biliary derangements which are so prevalent in this & other warmer climates, it becomes important first to understand the Anatomy and Physiology of the Liver. a gland which has been accused with having produced more of the ills to which mankind is subject, than any one organ. and though often wrongfully accused, is nevertheless more often implicated in the common diseases of this & all temperate & hot climates than any one organ or gland of the human organization. It has become very common among Drs to estimate the value of this organ

by its size, so much has this been dwelt upon that to make Drs, it is only necessary to tell some men that the Liver is the largest gland in the system, & then let them know that Calomel will act on it, & they start on their mission, (of I will not say what) But we have other & more reliable means of judging of its importance, viz Anatomical structure & Physiological action with the Character of its secretion, & it is from these that we should draw our conclusions of this & all other organs glands & tissues which enter into the mysterious machine whos Architect is God & whos motive power is simply the will of its maker, yet this machine is governed

by laws, some of which are more vital than others, & we have been enabled by Anatomy & Physiology to understand in what kind of structure & combination of structure some of the most vital parts reside. We can however no more define this vital principle to reside in one definite organ, than we can define the precise seat of the soul or how mind & matter are united, and notwithstanding we have have theory on theory written on this subject we only know that man has a soul & that while the lamp of life holds out to burn tis, within the body, we may however say that the Blood is or does contain the vital principle,

this we regard as true & that it is as near defining the question as we will ever be able to do.

This fluid is found in all the structures, beside we have supreme authority that the Blood contains the Life.

We find the Liver occupying a median position in the body & in intimate relation with other important organs & forming the connecting link between the portal & general venous circulation.

Its principal & larger portion being made up of the minute ramifications of the Portal vein Hepatic artery & vein with the Hepatic duct nerves & Sympathics, being held together by interlobular areola

tissue & Peritoneal covering.

The coats of the vessels here being the same as in other portions of the body viz, an external fibrous a middle yellow fibrous & an internal or serous. The Lymphatics are the same as the Veins & Arteries the Hepatic duct has but two Coats an external fibrous & internal mucous. The nerves are also fibrous, & these are surrounded by a serous and areola covering. Thus by considering the tissues which go to make up this organ, we find it largely fibrous. peculiarly combined with mucous & serous membrane. To complete the anatomy necessary for our present purpose it remains to speak of the manner

in which the above tissues are arranged to form the Liver proper, we find ~~find~~ the Portal Vein Hepatic Artery & duct nerves and Lymphatics entering at the transverse fissure surrounded by Glisson's Capsule, & thence dividing & subdividing until they become capillaries the artery emptying by its capillaries into those of the Portal vein & these being intimately coiled around the Hepatic duct form one of the small granules or Lacunae which when connected with others constitute the organ. in the centre of each granule (which is not larger than a millet seed) arises the Hepatic Vein.

It now remains to notice one of the peculiarities of this organ, which is the Portal Vein. We find here a departure from ~~the~~ general course pursued in the origin & distribution of arteries or veins, it does not follow either the laws of the one or other, nor, does it circulate Blood of the same Constituents, whereas all arteries may be said to arise from the Heart their distribution being accomplished by byfuraations, all veins arise by capillaries & empty into the Heart. But in the Portal vein we find it arising by capillaries from the abdominal visera & forming one trunk, but —

instead of going to the Heart, it passes to the Liver & is there distributed like an artery, so that it both resembles an artery & Vein & yet in the truest sense is neither, Having given some of the anatomy & Peculiarities of this organ we proceed to the Physiology proper, which consists in the elimination of Bile, First then let us see of what the Bile consists. according to Berzelius & other chemists Bile consists essentially of water Biline mucus & salts, but as Physiologists we will understand the analysis better perhaps by saying that it consists of Carbon Hydrogen Oxygen & Nitrogen

with sulphur & perhaps other salts, there being a large proportion of Carbon in this secretion has given rise to a beautiful theory of the Liver assisting the Lungs in decarbonizing the Blood when the latter, from disease or other cause become incapacitated to perform this important function, how far it may assist is doubtful we know however that it can not supply the place of the Lungs,

This organ becomes the more important from the fact that it performs a two-fold office, viz, separating from the Blood material if it remain in the circulation would prove

pernicious to the system at large
secondarily by secreting the Bile
which figures so highly in assist-
ing digestion. In the first instance
it frees the Blood of Carbon and
Albumen which leaves it rich
in fibrine the nutritious principle
and by lessening the Carbon it
becomes more easily oxydized
in the Lungs where it passes
through its last refining stage
preparatory to being distributed
by the arteries to supply the growth
and waste of the entire Organism.

In the second instance the
Bile being secreted, passes out
through the Bile duct Ductus Com-
munis Cholochus & is discharged
into the Duodenum in Common

with the Pancreatic juice forming with the Chyme a soapy compound which by this means is capable of being absorbed by the Chyle vessels & in this way a portion of the Bile becomes reabsorbed & returned to the circulation, through the Thoracic Duct emptying into the junction of the internal Jugular & Subclavian Vein of the left side near the shoulder, thus the Bile becomes important to the manufacturing of Blood, But still there is a portion thrown off with the feces, consisting principally of the colouring matter with that portion which would be injurious to the system.

Having given some of the outlines of the Anatomy & Physiology of the Liver, we proceed to examine into some of the Biliary derangements to which this important organ is subject, and especially while the general system is suffering from disease and why it is that we direct our remedies to this organ under so many different forms of disease, not that we intend to have medicine sent to the Liver indiscriminately. But that we may not take the opposite theory that the Liver is seldom at fault & consequently be influenced to direct our remedies to other organs less often at

faults. and more difficult to reach.

It would seem that Physicians will have some ~~some~~ favorite organ through which they expect their remedies to reach the disease of their patients, But is a dangerous doctrine, the idea of giving medicine, to disease, we are compelled to give medicine to the patient & let the circulation carry it to the diseased or deranged organ & in this way only should we expect a specific or local effect. It therefore becomes necessary that we understand what structure is diseased. and then study well the modus operandi of our remedies & then we may give them with some hope

of success, and having experience
& science to guide & warn us of the
necessity of watching the action
of the Liver we may do so & yet
not neglect other & even more
vital organs. And as we set out
to write on Biliary derangements
it will not be expected of us
that we point out the necessity
of watching each one of the var-
ious organs of the Body. But
that we proceed to the subject
under discussion which is to sho-
w. how this organ may frequently
become deranged. And to do this we
will arrange the various morbid
conditions under three heads. viz
1st functional 2nd structural & 3rd
Auxilliary.

Then first of the functional, this form may be arranged under three sub divisions. 1st diminished 2nd Increased + 3rd suppressed Secretions. We then commence with diminished secretion which may result from a congested state of the Portal circulation, the Blood not passing fluently through the glands + not supplying the secretory apparatus with a sufficiency of material from which to eliminate Bile, and this no doubt is the case in a large proportion of diminished secretion cases. again we may have a changed condition of the Blood circulating in the Veina Portarum from a deranged condition of the absorbent capillaries of the vein,

or from there not being sufficient nutrition or food taken into the alimentary canal to supply the capillaries with Blood from which to eliminate, or we may have diminished secretion from nervous influence acting on the gland destroying its secretory power for the time being this may be from two causes, the mind & external violence or disease. But we may have this derangement under the reverse of circumstances, as in inflammation when the excitement transcends the secreting point, on the same principle that Diaphoresis cannot take place when the heat of the body is above a certain temperature,

These are some of the functional derangements from which we would expect diminished secretion.

Increased secretion on the other hand may be expected to arise under different circumstances & is by no means so common as the preceding, it does however occasionally occur & when so it may be from morbid excitement in the Duodenum from irritability caused from irritating matter passing ~~the~~ canal. This is evident from the fact that the natural stimulus of the ingesta passing along the canal causes an increased flow of Bile to the Bowel & from a knowledge of this. arose the theory that mercury by its irritating effect, causes

an increase flow of Bile. a theory
not intirely void of Philosophy
but by nomeans correct. we believe
however that it is quite probable
that it does often act as an aux-
illary in this mechanical way
but that its principal action is
in a different way is now too
well known to require Comment.

We may have a superabun-
dance of Bile from slight inf-
lamination stimulating the
glands abnormally or it may
be from Nervous irritability;
Again we may have superabund-
ance of the Bile material circ-
ulating in the Portal Blood fr-
om the Capillairies being over
stimulated. & lastly an Hypertroph^{ied}

condition of the Liver itself producing an abnormal quantity of Bile. But as we apprehend these causes are not very frequently operating, & as we live in ^{an} age when physicians like to see Bile & are not disposed to be alarmed at copious evacuations of it, we leave this part of our subject to take up the third variety (which is perhaps much more rare than either of the previous.) When a total suppression exists of course there is great derangement for there must evidently be great obstruction to produce it. and we can conceive of but few circumstances capable of producing this state short of organic lesion of the parts engaged

in secretion. yet it may be possible in cases of obstinate & complete congestion or where the liver is completely inundated with Blood as in cases of high inflammation causing tumefaction & compression, this state might also be produced by paralysis of the nerves entering the Liver. But we have no recollection of having seen this point discussed & think it would be very difficult to prove. we often see partial paralysis & still the part keep up its natural secretion but how it would be in complete Paralysis of the Nerves of the Liver we cannot say

We now proceed to notice the structural derangements,

These need not detain us long for although there are various lesions which would lead to these derangements yet they are with a few exceptions so rare that they are not of interest in our description. nor do they come fully under the head of our subject but principally under the head of disease of these organs. We will however notice them here & for purpose of description we divid the derangements arising from this source into two. diminished & suppressed Secretion, & we may as well say that the same causes which produce the first will also produce the last only requiring complet in stead of partial destruction. we will first notice diminished secretion & this

perhaps most frequently occurs from abscess within the structure of the Liver destroying a portion of its structure or by pressure on the Portal vein from abscess in the Liver or spleen or any of the surrounding viscera. any lesion of the the Portal vein incapacitating it to carry on a sufficient circulation.

Atrophy of the liver from lack of nutrition produced by lesion of the Hepatic artery. Any lesion that would lessen the amount of Blood in the Portal vein. would cause a diminution in Bile. Of the second variety Suppression. This cannot exist long without causing death as a total suppression could not

exist without entire destruction of the Liver or Portal vein of course a lesion of that character must sooner or later prove fatal. But if this state could exist at all it must be in some such case as where the portal vein enters the Liver by gradual pressure there might ^{cause} obliteration of the vein & consequently suppression. Or there may be a condition in what is called fatty degeneration that would produce this derangement & there may be a few other causes but all must be very rare & are of so little importance & so remedial that we can imagine no treatment that could do good.

We now come to the third & last division of our subject which is one of more importance to the Physician than either of the preceding, from its frequency.

Viz the auxilliary causes of derangements. It is hard to conceive of a disease of any considerable extent which in its course may not implicate the Liver, most commonly its function only, But occasionally bringing on structural disease of this Organ.

We will therefore attempt to show how this is done, & in doing so we will name but a few of the many common & well known diseases of our country. And first Remittent fever

which from its frequent connection with Biliary derangements has received the common title of Bilious fever, in this common maledy we find various ways in which the Liver may be influenced to take on a morbid action. first in this disease we have extensive derangement of the alimentary Canal, digestion & nutrition are more or less deranged & as we have already seen this cannot occur without more or less disturbance to the function of the Liver, again there seems to be a tendency in this disease to enlargement of the Spleen which has its influence on the Liver.

It is also very common in this disease to have congestion of the Portal system which we have before shown is a prolific source of Biliary derangements.

The nerves are also generally affected in fever which exerts great influence over all the secretions. or secretion may be checked in this disease, by the high temperature caused by the fever.

Dysentery though usually the effect of Biliary derangements, is nevertheless occasionally the cause, producing as it does great irritability of the alimentary canal as a natural consequence it would excite morbid secretion from the Liver.

Injuries to the cerebrum has long been supposed to produce abscep. of the Liver, but how. has also been a disputed point for a long time & perhaps our answer is yet vague we consider if done at all it must be through the nervous influence.

Disease of the Kidneys by causing general Congestion as well as by the poisonous effects of uric Acid circulating in the Blood, is well calculated to produce derangement in the structure & secretion of the Liver.

Inflammation of the Lungs may cause derangement by placing more work on the Liver than it can perform & we

might go on to enumerate nearly
all the Ills ~~to~~ which flesh & Blood
are heir. but it is needless here.
it is only necessary to understand
the wide range of relations between
this & other important organs &
functions to see at a glance how
it is possible to have these deran-
gements in nearly all unnatural
conditions of the human Body