I. Gandon Asher

Thesis

on the

Inflammatory diseases

of the

Liver

March 1854

And in the name of the public and in the name of the King, this work on the inflammatory diseases of the liver is hereby declared completed and approved.
In some portions of the earth's surface, particular diseases occur much more frequently than in others, and this is especially true of liver complaints, which, though met with like the generality of diseases in all quarters of the inhabited globe, are much more common in the warm than the cold regions. They form a very small number of the diseases of temperate climates, but in warmer climates their frequency is proved by the army medical returns, which show that of all diseases incident to our troops in tropical countries next to dysentery and fever, liver complaints are the most common, and, with the exception of dysentery, the most fatal.

According to estimates, the average annual percentage of patients in the Bengal
European army is between 8 and 9, and in the Madras army more than 20, and if we take into account that this organ frequently becomes the chief seat of disorder, and even of organic lesion in progress of both fever and dysentery, the proportion of cases in which the liver is actually diseased must be much greater. However, by the middles of Morgagni, Bonet, Mingle, Clegg, and Ophion, it may be seen that hepatitis is not confined to tropical countries.

The cause of the great prevalence of liver disease, in warm climates is undoubtedly referable chiefly to temperature and intemperance.

The effect of temperature on the liver was ascribed by Galton to sympathy between the hepatic functions and those of the skin, the former being increased when the latter is augmented. But the explanation seems to be that the liver and lungs are vicarious in their office of separating carbonic hydrogen from the blood. It has been proved by experiments on animals that the higher the temperature of the respirable air, the less is the amount of carbonic acid admitted into it.
and this is found to be even more marked in
warm climates than in an artificially heated
atmosphere—so if the lungs and liver, if uniform
temperatures act both regularly, steadily, and uniformly
results, it follows that any change in the tempera-
ture of the atmosphere must induce a corresponding
change in the balance of their functions, and an
increase or diminution in their respective secreting
actions must occur—Thus then on passing
from a colder to a warmer climate, the lungs do
not give out their ordinary “quantities” of carbon
and to the liver is called upon to perform part
of their function, and thus overworked
This increase of function imposed on the liver—is aggravated by intemperance—for alcoholic
beverages belong to the class of respiratory foods, passing
off from the body in the form of carbonic acid
and water, chiefly by respiration, but the
lungs being limited in their excretory function
by the high temperature, the liver is brought into
action—and a practical proof of the influence
of this cause of hepatic disease, it may be
mentioned that Dr. Ferguson of the West Indies
observed that there was a regular increase
and aggravation of affections of the liver among the troops after receiving their monthly pay, when they drink great quantities of strong spirits.

From these observations it is manifest how powerfully temperature and intemperance when associated must be in engendering hepatic disease; the lung causing a deficiency of the oxygen respired, and thus limiting the function of the lungs, the other furnishing respiratory or combustible material for the removal of which, as well as to complete the respiration function of the lungs, the liver is called on to act with increased energy. It has been remarked that in Nova Scotia and New Brunswick, where the low price of spirits there is much intemperance, our troops suffer less from disease of the liver than those at home. In the colder climates the lungs are the chief agents, while in the warmer ones, increased action is imposed on the liver. But increased action implies increased determination, and this again disposes to inflammatory tendency, together with a variety of temperate causes, variety in the energy of action in the liver and lungs.
respectively, corresponding consequences supervene, and as the lungs are more engaded in cold climates they also are more disposed to disease, while in the warmer ones the liver being the chief working agent becomes also more susceptible —

Fulminating, highly fevered, indolent, splenial, chlorotic, and repeated attacks of intermittent fever may also be arranged among the predisposing causes to disease of the liver. Organic disease of the heart too, or any disease impeding the flow of blood through the chest by producing congestion of the brain acts as a predisposing cause. The age of puberty also has been mentioned by Girdlestone Hohers — they having observed that the lads and boys accompanying regiments as drummers seldom suffer until they have attained that age.

The exciting causes mentioned by authors are various and numerous. The principal of them are: sudden change of climate — cold or wet — draughts of cold fluid when perspiring — violent mental emotions — as a fit of anger, sudden fear, great anxiety or deep grief — injuries in the vicinity of the organ — as shotgun.
Most authors in treating inflammation of the liver have divided them into acute and chronic, but this division is entirely arbitrary, because the terms are applied not only to the kind of inflammation or its duration, but also to the severity, merely of the local symptoms.

To ascertain the approach of liver disease and investigate its nature during early periods before objects of great importance, the premonitory symptoms are deserving of a very careful study, especially as the primary ones are often so slightly marked as scarcely to attract attention, and they are so varied that most authors are agreed that there is no one symptom always present—sometimes indeed great malady changes may take place without any symptom being developed. Bell remarks: "It is wonderful how often in hospital dissections almost every known hepatic disease is found in subjects, who had not while patients in the house exhibited a recognisable symptom of disease of the liver"—and Duchenne mentions a case in which an abscess
"occupying the greater part of the liver was found in
the body of a man, who died gradually worn out
by complaints, which almost to the time of his
death had been considered as hypochondriacal."

Excessive languor and lassitude—debility
foul-smelling—foul-tasting—peculiar sensation
either of fullness or vacuity in the region of the
vessels or at the pit of the stomach—constipated
sluggish state of bowels—abnormal appearance
of the pulse—irregular pulse—changed color of eye
and skin—a dry, chilly state of skin. He was
all considered as indicating of commencing
disease in the liver, and though by no means
all or even any of them are always present, yet
when observed should be met by judicious
treatment, so as to avoid some sequelae, which
neglect would allow infallibly to supervene.

The only symptoms referable to the liver
are pain and tenderness or fullness in the
right hypochondrium, and jaundice; but
these special symptoms are far rarer, and
from being all developed in every case, and
mumps they are entirely absent.

The presence or absence of pain seems
to depend more on the situation than on the extent of the inflammation. The substance of the liver is like that of other parenchymatous organs has slight natural tenderness, so when severe pain attends the inflammation of these organs, it has its seat in the fibrous or serous covering. When present in hepatitis then we may consider it as indicating that the surface of the liver is involved as well as its internal structure, for although the internal substance of the liver is often diseased, then no superficial being found the severe pain or never occurs. Abercrombie says he never saw "inflammation confined to the peritoneal covering of the liver except when combined with extensive and general peritonitis." The pain is generally increased by sudden turning in bed or lying on the left side, due to the connexion of the inflamed organ being then put under stretch or its weight.

The fullness occasionally felt is caused by enlargement of the viscus, which must in some degree depend on the extent of the part affected, for when the inflammation is confined to a small portion of it, it may go through all
its stages without producing an enlargement dis-
coverable by touch —

The frequent occurrence of jaundice is also
explained by the partial nature of the inflammation,
the healthy plants being adequate to feed the blood
from the principles of bile, for most persons have
more liver, as they leave nothing than is
absolutely necessary —

There is another class of symptoms often
attending inflammation of the liver, which,
are sympathetic — as pain in the right shoul-
der, and a disturbance of the functions of the
lungs and stomach —

Pain in the right shoulder was noticed by
Hippocrates as a symptom in liver affection,
and was at one time explained by the sup-
position of a concomitant disease of the lung
or pleura, which dragged on ly the enlarged
and heavier liver excited a growing pain in
the shoulder; but the real explanation is
that the pain is sympathetic (like that of
the knee from disease of the hip) it being
conducted by the phrenic nerve to the cervical
plexus, and thence transferred by the nerves
To demonstrate the relationship between the heart and the lungs, it is important to understand the function of each. The heart is responsible for pumping blood throughout the body, while the lungs facilitate the exchange of gases. The heart's rhythm is regulated by the autonomic nervous system, and its function is essential for maintaining life. The lungs, on the other hand, are essential for respiration and oxygenation, allowing for the exchange of carbon dioxide and oxygen. Understanding these relationships is crucial for maintaining overall health and well-being.
Nausea and vomiting when present are,
said by some to be caused by extension of
the inflammation to the mucous mem-
brane of the stomach, but they seem to be
principally or wholly produced by the neigh-
bouring irritation of the diaphragm.

Hiccup is often
produced in the same way from irritation
of the diaphragm.

The pulmonary or stomachic symptoms
predominate, according as the convex or con-
cave surface of the liver is the more conne-
crated with disease.

The general symptoms are very
various, and often so obscure and equivocal
as to escape observation.

The digestive system, as would naturally
be expected, is the most disturbed. The tongue
is foul and coated, the white yellowish or
brown color. There is no appetite, or occasionally
an unusually large one, with a bitter disagreeable
taste in the mouth, acid and acid emetetic,
muscardine, and vomiting. The bowels
may be constive or loose. The urine is very
dark and scanty. There is often headache,
with depression and great lassiness of spirits, a sallow countenance, yellow color of eye and a dry skin. These are accompanied generally by rapid emaciation. Affliction there is often not much fever, but it gradually supervenes, and has well marked nocturnal accessions which Dr. Kennedy says appear to him to afford the best means of diagnosis of a diseased state of the liver in doubtful cases—according to him there may be no symptom present during the day, but the tendency to vesperinal or nocturnal fever is seldom or never amounting the pulse becoming quicker, the feet and hands hot and the mouth parched and clammy, which symptoms abate towards morning.

Such are the chief symptoms of hepatic inflammation, and according to their severity, not according to the rapidity with which the disease progresses, it has been called acute or chronic—Ew old opinion, held by Saunders and others
With regard to acute and chronic hepatitis, it was noted that the acute form is associated with disarrangement of the hepatic system of vessels, and the chronic form with disarrangement of the portal.

As to the results of hepatitis, the most common in temperate climates is resolution, the organ resuming its natural state either spontaneously (and then it is generally accompanied by some evacuation of matter—whether diarrhea, critical sweating, or a copious sediment in the urine), or by the employment of appropriate treatment—and even in warm climates, when aplethic and robust man is the subject of the disease, the type being in that case generally of the acutely or the symptoms well marked, this result is often attained. Frequently, however, the inflammation runs on to suppuration, which may be either diffuse or circumscribed.

Diffuse suppuration of the liver is exceedingly rare, and when it occurs it proves speedily fatal, one or both lobes of the liver being found on dissection "almost wholly converted into matter.
“confined in a sac formed by the peritoneal coat which in attempting to raise up the liver from its position, is often ruptured and the matter diffused over the abdomen” —

Circumscribed suppuration or abscess of the liver is by far the most common result of hepatitis in tropical countries. It is not often met with in this climate, as a consequence of inflammation, but is generally found after death from pyaemia or that constitutional disturbance supposed to be dependent on the admixture of pus in the circulating blood which occasionally follows surgical operations and which is supposed to be the result of supplicative phlebitis.

It was at one time thought that abscesses in the liver, lungs from this cause were not formed by a process of inflammation in the glands in which it first took place, but that the pus was all brought with the blood from the original seat of injury and merely deposited in those parts hence spoken of as deposits of pus. The globules however are larger than blood globules, and therefore could not escape
bodied from the vessels, without the blood globules escaping along with them, which perhaps itself proves that the pus of these scattered abscesses is not simply deposited from the blood, but formed by a process of inflammation in the part, and a further proof of this is the finding in such cases, after deathly, various abscesses in the separate stages of inflammation. Hence it would appear that the pus corpuscles, circulating with the blood and being larger than the blood corpuscles, are arrested in the fine capillary systems of the lungs, liver, and acting mechanically producing irritation, lead to inflammation, suppuration, and abscess. In this is to be seen an explanation of the frequent occurrence of hepatic abscesses after injury of the head. The older authors noticed the fact and ascribed it as a peculiarity, but it is now known to be owing to the great liability of the veins of the diaphragm to become inflamed and suppurate. In this way abscesses of the liver as a consequence of diabetes or any morbid condition of the extensive mucous surface, from which
The returning blood is forced into the portal vein to be hence transmitted through the capillaries of the liver. Dr. Budd is inclined to believe that by far the greater proportion of cases of hepatic disease are the effect of intestinal disease. He thinks that abscess of the liver when occurring with dysentery is always secondary to it. He explains the cases, where the symptoms of liver disease appear as soon as those of dysentery by arguing that after an amputation or injury, inflammation of a vein may occur, pass at suppuration and contaminate the system in less than forty-eight hours; and those cases where the symptoms of liver disease precede those of dysentery he explains by supposing that what he means adhesive inflammation terminating in induration and evisceration, or functional derangement is mistaken for suppurative inflammation, as they present at first nearly the same symptoms, and when a person with any such derangement of the liver is seized with dysentery, and has abscess of the liver in consequence, that the dysentery is erroneously ascribed to preexisting suppurative
Inflammation of the liver — If, however, we view Dr. Budd's theory as to the cause of formation of abscesses in the liver as correct, it remains to be explained why it does not occur, like the ulceration of Peyer's glands so common in some varieties of typhus fever — with the intestinal ulceration which belongs to Phthisis, and with the ulceration of Brunner's glands, which is a frequent consequence of external burns — in the well marked forms of hepatitis generally attacking phthisic and substantial men, abscess is rare, when judicious and decided treatment is early resorted to, but it is more to be dreaded in the more insidious forms of inflammation of the substance of the organ, the symptoms being ill defined and difficult of detection. The inflammatory process may go on, without any precise warning, until the aggregate of symptoms lead one to infer that an abscess has formed, or until its communication with some viscus has rendered it evident. Then are generally some symptoms, however, which manifest themselves, so as to lead one to suspect suppuration. Mr. Gunning says he has never seen
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In the well marked forms of hepatitis, generally
attacking plethoric and robust men, abscess is rare, when judicious and decided treatment
is early resorted to, but it is more to be dreaded in the more insidious forms of inflammation of
the substance of the organ. The symptoms being ill defined and difficult of detection, the
inflammatory process may go on silently and unsuspiciously, until the aggregate of symptoms
lead one to infer that an abscess has formed, or until its communication with some viscus
has rendered it evident. These are generally
some symptoms, however, which manifest
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tion. Mr. Twining says he has never seen
a case terminate in abscess without being able to detect the disease, that is in prose by a careful examination before suppuration commences. Considerable enlargement of the liver, rigors, increased quickness and irritability of the pulse, thirst, paroxysmal sensations—great anxiety and oppressive cold sweats and restlessness—all cause a fear of its occurrence.

The tongue generally becomes of a dusky brick-colored redness—the papillae being very prominent. The stools are more or less frequent—decreased and consisting of a watery fluid with a greenish froth. The pain is often slight and of a prickling description, increased by sudden motion—quick respiration—snoring or coughing and relieved by a sitting posture, the patient leaning gently forward so as to remove pressure by relaxing the abdominal muscles, and especially the right rectus abdominis muscle, which according to McBurney is permanently rigid after formation of an abscess in the liver.

Conwell was of opinion that an hepatic abscess might disappear by absorption, and the matter be expelled by the urine, which assumed
The appearance of "decoction of cinchona" and was more or less opaque and turbid, at length becoming quite opaque and white, as if blended with cream of wine - Hamilton Bell speaks too glibly of the liver disappearing by absorption, but this opinion is not expressed by other authors and indeed the diagnosis of hepatic abscess is so doubtful that such a conclusion is scarcely warrantable - The symptoms above mentioned may continue for months with little variation, the patient losing flesh and becoming weaker, but sometimes an abscess in the liver becomes emptied, when if small and deep seated it causes but little constitutional disturbance, and provided it remain stationary the patient may enjoy even tolerable health for years, or it may terminate fatally without opening externally or into any internal cavity, or without communicating with any other organ, death being occasioned by the constitutional disturbance -

Having reached the surface of the liver an abscess of it may still various courses according to the direction AR has followed in the organ...
Most commonly obeying the general law of abscesses, it makes for the surface of the body, and in this way is often safely terminated, for adhesive inflammation having been previously excited and lymph poured out, so as to glue the liver to the abdominal peritoneum and thus ensure the external discharge of the matter.

When an hepatic abscess bursts internally, it is either (no adhesions having been previously formed) into the abdominal cavity, exciting peritoneal inflammation — for the most part rapidly destroying the patient; or (adhesions having been formed) the pus makes its way to other situations according to the side of the abscess in the liver — through the diaphragm into the thoracic cavity or lungs, or into the stomach or colon. Medeiros mentions a case where the biliary duct was found to communicate with the cavity of an abscess, the pus thus finding its way into the duodenum — a rare but desirable point of exit for it. With an American writer (mentioning) relates a case of an abscess of the liver breaking into the
pericondium, and cases are also recorded of their bursting into the right kidney and renal cava, but these are so rare, that they may be considered mere medical curiosities.

Abscesses of the liver vary very much in size, the large ones being generally single and the result of the well marked forms of hepatitis. The smaller numerous and the result of obscure cases—Lind mentions one where he estimated the quantity of matter at two quarts—another one where the quantity was ninety ounces and in man she where the quantity was nineteen pints—and Stokes says he has seen them "so minute as to represent suppressed tubercles, from which indeed it is sometimes difficult to distinguish them." Dr. Budd explains the variety in their size by supposing that small scattered abscesses follow the contamination of the portal blood by pus; and diffuse inflammation and a larger perhaps single, collection gives its contamination by matter resulting from softening of the tissues, or by the fetid gases and liquid contents of the large intestine.
in dysentery. "If the matted matter be such that it does not mix readily with the blood, as globules of pus or mercury, it will cause small circumscribed abscesses - the rest of the liver being healthy. If on the contrary, the matted matter be readily diffusible in the blood, all the blood will be vitiated, and diffuse inflammation result." When several abscesses are formed in the liver, Dr. Bellingall describes them as "small distinct collections of pus similar to what we termed venice in the lungs." And he adds, "The whole mass of the liver is generally in such cases altered in color, it assumes an appearance as if purboiled, and becomes much firmer in texture than natural, in so much that on cutting into its substance sensation is communicated to the hand of the dissector, as if his knife were passing through a soft cartilaginous mass." The contents of abscesses of the liver vary as well as their size - The matter may be thin and watery, or thickish with cord-like cloths floating in it, and its color may
be white, yellow, green or brown.

Gangrene of the liver seems to be very rare, but those changes which often occur after death from decomposition of the matter of an abscess present very much the appearance of, and have often been mistaken for, gangrene, the surrounding parts being blackened by sulphanilic hydrogen chloride.

Anesby

Budd

Besides these results of the inflammatory process in the liver, there is another, where, instead of running to suppuration, it heals at an earlier stage—on effusion of plastic lymph having taken place, it becomes organised and seriously affects the functions and nutrition of the organ. This form of inflammation is confined to the acellular tissue, namely the capsule of Glisson, which surrounds the division and ramifications
of the portal vein, the hepatic artery, and the biliary ducts - the result being a thickening of that capsule. By this thickening the vessels for which it forms a sheath are compressed - in some parts even obliterated, and the circulation through them either diminished or obstructed - at first the liver is increased in size from the growth of new matter, and often presses on the neighbouring viscera, so as to excite inflammation and form adhesions to them. After a time, however, shrinking of the organ commences - the effused serum being absorbed and the adventitious fibrous tissue contracting. Atrophy from the compression or obliteration of the nutrient artery also contributes to a diminution of its size, which occasionally amounts to such a degree that cases are mentioned where the livers of large men have been found only to weigh thirty seven ounces - two pounds - eleven and a half ounces - , and on account of the contraction after enlagement, if there have been any adhesions between the liver and adjacent
vivace, there are frequently found bands of adhesions of considerable length. This change produced in the appearance of the liver by this form of inflammation are very marked and peculiar, varying according to the progress of the disease at the time the patient has died. All the substance of the gland is rendered tough by the newly formed fibrous tissue, which when the liver is sliced is seen to form thin greyish lines between small irregular masses of glands, after contraction at the parts on the surface of the liver corresponding to these lines, the capsule is drawn in, so as to give the surface a lobulated appearance, and even occasionally the shrinking has been so much that the whole structure is changed in this way, so as to be not only constituted of congeries of little firm lobules, which have been compared to the vestibularium of laying hen. The tissues of the lobules present a yellow color from accumulation of biliary matter in the cells on account of obstruction of the ducts, and a section has
The greyish and yellow color of purpure bees wax, an appearance which has given rise to the term "linthrosis" among the French.

This is the true gin-drinker's liver, as it has been familiarly called by English practitioners, and is most frequently seen in large manufacturing towns.

The explanation which has been given of the direct effect of spirit drinking in causing this kind of inflammation of the liver, is that the spirit is conveyed through the vessels of the stomach to it without change and without further dilution than by admixture with the portal blood—and that there it is diffused through the areas of tissue in virtue of the property alcohol possesses of readily permeating animal membranes. This circumstance accounts for the whole of the liver being involved in the change of structure. But this disease of the liver is occasionally met with in children and temperate persons, also in the lower animals as the cow, pig, etc., so there must be other causes for its than...
Spirit drinking. What these are is a mystery; however they are a matter of summary. The discovery of some product of faulty digestion or some error of diet. Bequest was of opinion that disease of the heart by producing long continued congestion of the liver was the most common cause of cirrhosis, but this would seem only to act by causing more or less stagnation of the blood in the capillaries of the liver, and thus giving greater effect to spirituous liquors or to any other deleterious agent that is absorbed from the intestinal canal and so mixed with the portal blood. For there is no reason to believe that mere passive congestion of an organ has any direct influence in causing active inflammation (Pit - Heart) disease and cirrhosis are frequently found in the same subject. The consequence of one common cause - viz. intemperance, but they cannot be regarded as cause of effect. There being frequently cirrhosis when the heart is healthy.

In the beginning of the disease the...
symptoms are few and obscure, but eventually become pretty manifest—slight pallor of complexion, a dull pain in the right hypochondrium and disordered digestion when occurring in habitual spirit-drinkers, are pretty conclusive evidence of cirrhosis of the liver—Occasionally, however the commencement of the disease is better marked, all the symptoms of active inflammation being present. When this happens it indicates that much lymph is effused at once and the capsule of the liver involved—After a time varying according to the progress of the disease, a class of symptoms arise, dependent on the shrinking of the gland and obstruction of its vessels. The effect of the obstruction of the hepatic artery and biliary ducts has already been incidentally noticed—viz. atrophy and shrinking causing the nodulated, hard, irregular surface of the organ (which can sometimes be felt through the walls of the abdomen) and detention of bile in the cells—giving rise to dark jaundice—
yellowish color of the lobules previously described. On account of the defective secretion of bile by and consequently the imperfect purification of the blood from this principle, the complexion is yellow or of a slightly greenish hue, but there is seldom decided jaundice; as far as the liver generally remains equal to the performance of its function—From obstruction of the portal vein the capillaries of the intestines become congested, absorption is arrested and mechanical fermentation of demineralized matter takes place—producing ascites which gradually increases to as to cause great distension of the belly and often much difficulty in breathing. From impeding the movements of the diaphragm—Edema of the legs often follows from compression of the vena cava and iliac veins by the fluid distending the peritoneal sac, but unless there be concomitant disease of the heart or kidneys, there is no edema of the hands or face—Ascites is not however a necessary consequence of a contracted liver—Indeed St. Chrestian
without being able to explain the reason why this state of ascites is more commonly associated with an increase than a diminution in the size of the liver. On account of the obstruction to the free passage of blood through the portal system, the superficial veins of the abdomen enlarge and become distinctly visible on the surface of the belly, and the patient becomes liable to hemorrhage from the stomach or bowels, and piles.

The digestive system is generally very much disturbed — the appetite is gone or depraved — there is thirst — the tongue is furred and there is dyspepsia and an irregular state of the bowels. The urine is scanty and high colored, generally passing down with sediment of bile and albumen. The skin is invariably dry and rough. There is seldom any effect on the nervous system, but as the disease advances colliquative diarrhea often supervenes and the patient sinks from exhaustion.
In the treatment of inflammatory diseases of the liver whether active or not, the same remedies are adapted; the comparative mode of their exhibition however differing somewhat. Most authors are agreed that in the early stage of hepatitis, bleeding—local or general—is required. The extent to which it is to be carried and the mode of abstracting it to be decided more by the constitution, mode of life, and habits of the patient, than by the accentuation or urgency of the symptoms, or by the pulse, which often paroxysms of heat enemesis so common in all abdominal inflammations. Thorneley expresses regret at not employing blood letting more frequently than he did, observing "that a pellagric state of the vascular system generally and of the portal system of vessels in particular is the pathological condition, which most generally obtains, especially in India, and that this state whether it be related to acute hepatitis, dyspepsy, functional disorders of the liver or different types of fever can be recovered with sufficient celebrity to prevent fatal consequences".
and other evacuations" Dr. S. Ferguson in speaking of the treatment of pyorrhitis says
"Though at first, I was afraid to bleed, I have since learned that in the first stage this operation
was of the greatest value and that "No doubt
but several bleedings will application for
blisters extirpate the disease and removed it
in a few days" — The blood first
abstracted often shows no appearance of
the bruzy coat, but is described as "very
dark, thick and oily with a glutinous state of
the serum" and this condition of the blood
is said to be especially marked in those cases
in which there are great congestion and
inflammation of the organ with oppressed pulse.
As the blood flows, however, it generally
towards the end of the bleeding becomes mire
fluid and exhibits the bruzy coat, the pulse
often becoming more violent and less em-
phasised — or this change may not take
place till sometime after the first bleeding,
even though it has been carried to faintness
and then a repetition of the depletion is
demanded.
The remedies next in efficacy to bloodletting are purgatives— all authors are agreed as to the utility of neutral salts by producing copious and watery stools, draining the veins that feed the vena porta and thereby relieving the hepatic congestion. They plentifully, too, as some suppose, operate beneficially as counterirritants, causing a derivation of blood to the mucous surface of the intestines.

The same agreement, however, does not hold with regard to the exhibition of colonely, some objecting to it as being stimulating to the liver, while others (and they constitute a large majority) give it indiscriminately in all cases of hepatitis, and express their astonishment that anyone should hesitate in a once-prescribing it. Dr. Ballingall writes regarding it that "in the acute form of hepatitis after bleeding mercury should be infused to the extent of producing perspiration with the least possible delay." He adds "the relief indeed experienced in most cases of chronic hepatitis the moment mercury affects the mouth is truly surprising, the removal..."
fall uneasy feelings from the side, the comparative
dearness of the patient's skin and urine, the
restoration of the natural evacuations and the
removal of every complaint but debility almost
instantly since the power of this remedy, and
were its effects always as permanent as they
are conspicuous we should have nothing
further to desire in the treatment of this
complaint." Reiterated as these opinions
are by most authors with regard to the efficacy
of mercury in this disease, it would appear that
those who object to its administration do so
more on theoretical than practical grounds.
Some recommend its exhibition in small
and frequently repeated doses, while others
object their object by one large dose. Annesley's
practice was to give twenty grains of calomel
in the evening and a purgative in the morning
as he thought a large dose produced much less
inflation of the alimentary canal than small
doses frequently repeated, and argues strongly
against such dose of it; he says: "To exhibit
mercury or calomel in small quantities frequently
repeated is to keep up a state of slow inflammatory
"action in the sequestered substance of the liver, which may of itself terminate in abscess," but these observations are not confirmed by other authors, and a few grains of calomel given every two or three hours is the safer and perhaps the good practice; unless the symptoms be very urgent, and it be desirable to affect the system with the metal with extreme rapidity.

Inunction may be continued with its internal administration, or practised alone if that mode of exhibition be contraindicated. Combined with calomel anthomony is spoken of as often very beneficial in the early stage of the disease; also opium, but this latter must not be given to such an extent as to interfere with the regular action of the bowels. The administration of calomel however is not to supersede the use of saline purgatives, and enemata are recommended as auxiliaries, especially if there be dysenteric symptoms, or if the bowels are not otherwise evacuated.

Sodetics are said by some to do good, but others think they tend to increase the acute character of the disease, though they may
afford temporary relief.
After depletion repeated blistering is recommended so as to prevent relapse and to restore the healthy function of the gland.
These with the strict enforcement of the antiphlogistic regimen are undoubtedly the remedies most to be relied on in checking inflammation of the liver, and in the more active forms should to be early and strenuously applied with a view towards the prevention, if possible, of suppuration, for although frequent cases of recovery after abscess of the liver are recorded, complete restoration to health after the certainty of such an event having taken place is rarely to be never attained —

There being reasonable grounds for believing that suppuration has taken place or is unavoidable a corresponding change must be made in the treatment. Active measures are no longer admissible, nor the strength must be sustained by nourishing diet, tonics and wine according as the case requires them — it must
be kept in mind however that, although matter may be actually forming, the inflammatory action, which produces it, does not cease altogether with this event — so our object must be to prevent the extension of mischief without materially injuring the powers of life — The time for mercyless now passed by, and must be avoided — any attempt to affect the system by what is after suppression is said generally to fail, and merely to add irritation to an already irritable pulse, and materially injure the powers of the system — If the symptoms indicate it, a few leeches may be applied, and poultices should be assiduously employed with the view of promoting the external draining of the abscess — Should this take place, as soon as the abscess has advanced to that state in process of draining externally, which shall offer a fair prospect of advantage from giving an artificial exit to the collected matter, it is recommended in general to open it, but at same time the operation should not be undertaken.
...cipated before the present matter has made its way sufficiently near to the external surface of the liver, or before adhesions be formed between the cyst of the abscess and the abdominal parietes. Care should be taken too before operating by a thorough examination of the tumour, and by the history of the case to make sure that an abscess really exists, and that the tumour does not proceed from excessive accumulation of bile in the gall-bladder. Such mistakes have occurred by Galen and others.

A Troca and cannula have been used for perforating the operation for the purpose of preventing the chance of any danger from want of adhesion — but when the pus is full of large flares and contains large coagulated clots of a cheese or curd like matter, it will not pass through the largest cannula, so that in this way of perforating the more fluid portions are first evacuated. The clots remaining and acting as foreign bodies, causing continued suppuration of the gland and febrile excitation of the system.
On this account the operation is best performed by the knife, a large incision being first cautiously made so as to expose the peritoneum and then the abscess fully laid open, care being taken not to cut beyond the limits of the adhesions between the abscess and walls of the abdomen — or Dr. Groves' mode of operating may be followed — after cutting down to the peritoneum, he recommends the wound to be filled with a pledget of lint so as to excite circumscribed inflammation, and to produce adhesion between the reflected layer of the peritoneum and the larger covering the abscess, which may then be opened, or left to open of itself — Dr. Blunt recommends hepatic abscesses to be always left to open of themselves, and speaks strongly against any operation. He says that the blood hepatic tissue cannot readily collapse, so as to close the cavity when the abscess is opened — "Air and blood thus become mixed with the pus in the abscess, decomposition takes place, and the air or the decomposed pus sets up fresh inflammation..."
"of the inner surface of the sac. This causes of course a fresh accession of fever, and of the constitutional disturbance, and if the abscess be large, a profuse and fetid and continuous discharge, which may soon exhaust the strength of the patient. The secondary inflammation, thus excited by the presence of air or by the decomposed pus, may even lead to gangrene and speedily destroy "life"—an example of which he cites from his own experience—

By caustics is another method of opening hepatic abscesses, and Bell affirms that when applied with this view they sometimes produce absorption. He says the actual cautery is used for the purpose of causing absorption by the native doctors of India and often with success. The practice, occasionally followed in India, of thrusting an exploring needle into the liver is not likely to become general from the difficulty of diagnosis and splitting an abscess if it be deep at the first thrust, as well as from the danger of hemorhage and of exciting fresh inflammation."
When an abscess of the liver has broken into any of the adjoining viscera, the treatment must be directed towards the particular symptoms allaying them by medicines suited to their nature.

When the pus of an hepatic abscess is freely discharged occasionally a happy result is obtained, but often the walls are hard, gritty and unyielding and cannot contract so as to close the cavity, which consequently continues to be filled with pus—the patient dying from inhaled suppuration and hectic.

After the prominent symptoms of liver disease have disappeared, there very often remains a debilitated state of the system with a tendency to delirious derangement, for the correction of which various remedies have been used.

Of these nitric acid seems to have been the most beneficial. It was first recommended in hepatic affections by Mr. Scott, a Bombay surgeon in the year 1796, who, being affected with liver disease himself.
took the acid "with good effect" and afterwards gave it to many others — in consequence of which he thinks he has seen them "recover their natural color from a lecherous diliens lung, and regain their strength from a long continued weakness" — Sir J. McLennan — in his account of the diseases of the 88th regiment in Bombay adds his testimony to its efficacy — It was tried in that regiment in two hundred cases, and in general "with great success" — and Dr. James remarks regarding it: "if I could suppose any remedy to be beneficial after suffocation, it was the acid." — Mr. South, deems only to have used and recommended the nitric acid in the truly chronic cases of hepatitis, but Sir J. McLennan in the paper above quoted bases testimony to its ability in the more acute forms, stating that he has sometimes succeeded in effecting the gums with nitric acid, when mercury had failed or by conjoining the two — after which a mitigation of the symptoms were generally observed — Dr. Chisholm speaks favorably of it in his dispensatory.
"in immediate cases of chronic enlargement of the liver useful in cleansing the tongue, increasing the appetite, abating thirst, and sometimes retarding the progress of the disease."

He attributes its virtues to its tonic action on the stomach - a great advantage, the acid has over mercury, if they were equally beneficial is that the injury to the constitution is infinitely less from the acid than from mercury, and that convalescence is much more rapid after the former than the latter.

Nitric acid, along with nitric acid has also been used externally both as a monolith to the foot and in the form of paste. This practice seems to have been entirely abandoned yet it is highly praised by some.

Muriate of ammonia in small and frequent doses has been used on the continent especially in Germany - the Germans ascribing to it the same virtues as the English to mercury.

Toxey's cinin has been used as a remedy both in functional and organic diseases of the liver, since Memberton's book on the
diseases of the abdomen was published - Dr. Christie says it seems not without use in functional biliary disorders, but his own observations lead him to infer that much has been ascribed to taraxacum, which has been due to collateral remedies or to regimen and diet.

Iodine has been much recommended in hepatic disease by some, while it has failed in the hands of others. It is said to be most useful in those cases connected with enlargement of the viscera, producing an increased discharge of bile, while the organ undergoes sensible diminution. It is recommended to combine its external use with its internal administration.

It is only in the early stage of cirrhosis of the liver that treatment can be of any avail. Local bloodletting and blistering - regulating the bowel - moderate doses of mercury and spigot, or phosphorus are the remedies recommended, and by these means the disease may occasionally be kept for a time, in abeyance.
When ascites comes on all that can be done is to palliate saving relatives, and with a view to the removal of the fluid, diuretics and purgatives, which are however generally ineffective. If the breathing be much impeded, relief may be obtained for a time by removing the fluid by tapping—but it is only temporary, as for the most part the fluid rapidly accumulates again.

Great care is required in regulating the diet of patients with any kind of liver affection. Though to be light and nourishing—all spiritsuous liquors being prohibited—moderate exercise in the open air should be encouraged and change of climate and of scene is often necessary.

A residence at Cheltenham or some such place frequently proves beneficial, where by the use of the sea air a continual drain on the portal system is kept up, and where change of scene and society contribute to dissipate the hypochondriacal feelings so often accompanying hepatic disease.