Typhoid Fever

References

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Typhoid Fever

At present we have no thought of taking the entire subject of typhoid fever but only the discussion of certain points. These points will be first - the etiology or the supposed cause or causes of the disease. Secondly, the natural characteristics of the disease and the relations of the lesions to the essential disease. And the use of city foods.
Ehology

Typhoid fever belongs to what is known as the infectious diseases. It is not a contagious disease in the full sense of that term, that is, it is not contagious in the same sense as smallpox or scarlet fever. It is the opinion of many of the most learned authors that if the fever is never communicated directly from one person to another—also that the disease like smallpox never arises de novo, but is always the result of germ derived from one previously sick of the disease.

There are three generally recognized modes of infection or rather three classes
of poisons which stand in a causative relation to infectious or contagious diseases. These differences are based upon the supposed origins and peculiarities of development.

The first of these—Called Contagion—Caused disease by direct communication for the sake of the specific poison from the sick person to the person in health. The power or poison material is supposed to be formed in and originate from the sick person and may be communicated either by direct contact or by the medium of the air. After such communication at some stage of development requiring some or other time, the different specific poisons requiring different lengths of time before they poison...
becomes active

A second class are those called Erysipelas. In these the presence of one sick of the disease is not necessary to its production nor is the disease communicable from one to another.

The poison is supposed to be caused from decaying matter — from manure, sewage, etc. and is in no wise dependent upon the presence of man for its form.

The third class partakes of the nature both of the preceding — like the first it only results from the presence of one sick of the disease and is only developed within the body — like the second one person cannot communicate it to another.
The first is elaborated in the human body. The second is elaborated without the human body. The third is elaborated both within and without the human body. In the body of the typhoid patient, we suppose a specific something to be elaborated as a result of typhoid poisoning. This something is not capable of reproducing. The disease continues until it has undergone certain changes or processes of development requiring more or less time — outside of the body. This development is supposed to take place in some peculiarly favorable soil — such as decaying animal or vegetable matter — in which a further growth of development takes
place after which the specific poison is fully formed and is ready to act in the production of the specific disease when introduced into the body of one susceptible to it. This Lehrer Merkel calls 

Contagion.

This process has its analogue in some of the lower forms of vegetation. The common 

Which causes the rust on wheat is an example of this. The spores will result from the growth on wheat will not themselves grow upon wheat. They will however grow upon the leaves of the Barberry bush and the spores which result from the growth.
upon the Barberry bush, will in their turn grow upon the wheat, and thus indirectly reproduce the parasitic disease known as rust. If the Barberry bush could be exterminated — provided it is the only host plant — upon which the spores can undergo this stage of their development — the rust in wheat would be exterminated.

This is precisely the case with the typhoid fever poison — according to the investigations and conclusions of Hoffman, Lehrmeister and others high in authority on this subject. The typhoid fever germ must, after leaving the sick in which it is
developed meet with a favorable soil in which to undergo further development. In case of the treedo this favorable is found in the leaves of the Barberry. In case of the Syphoid Teregyrum the probabilities are that it is decaying animal or vegetable matter - particularly the human excreta. Precisely how this may be is not certain. Known, but the accumulation of facts lead pretty certain to decaying matters as the place for the further development of the germ. After the germs have undergone the necessary development they are fitted to reproduce the characteristic.
Syphoid Fever and none any other disease. Bacterium does Syphoid Fever spring from any other cause according to Liebmann and Hoffman and others. Liebmann says that in the treatment of 1906 cases at the hospital at Paris only 45 cases originated in the building. Of these 45 cases some were nurses who were attending patients sick with the Fever but most were attendants in other wards and to one of her acute attacks of observation the Fever might have been thought entirely free from contagion. It was found however that those who contracted the disease were from certain quarters of the building especially from...
rooms situated one above another through which the pipes passed which carried the excreta from the houses four wards. Upon examination of the pipes was found defective and after it was put in order there was no further infection. Facts of a similar nature to this might be quoted almost without limit and it is a significant fact that the great mass of these pipes to the human excreta as the soil pipe. This second Stage of development occurs.

A large proportion of the cases of cholera drinking water have been traced to this source.
The views just given are not agreed to by all writers upon the subject. It is no doubt but that cases of typhoid fever do frequently arise denovo and does not seem to recognize in it any such thing as the miasmatic contagion described by Liebermeister, Hoffman and others. Indeed very few if any who wrote over two years ago recognized any such theory of causation. Since however it is now well known that many of the fungi undergo different stages of development in entirely different situations as described in the Eucereon or rust on wheat--such a theory is not only plausible but seems in the highest
degree probable in the light of the facts at present in our possession.

Prevention of Contagion

We cannot well avoid presenting in this connection some thoughts on the prevention of injection. If the excreta from syphilitic patients should never be allowed to stand for an hour or even half an hour in the room nor out of the room, nor though they be cast into any privy vault or sink of any kind whatever, but should be lithrated at once and buried in the ground if possible in dry earth which will completely rob them of all moisture, each defecation should be burned in a place to itself so that there may be no
accumulation and no clothing—linen, bedding, napkins or anything whatever soiled by a typhoid patient should be allowed to remain in the room or out of the room but should at once be destroyed by fire Boiling Water or at thoroughly cleansed with soap and water and the water cast out if possible upon the dry earth where the sun will thin upon it—it should never be cast into sinks or cesspools. 2nd. The clothing of typhoid fever patients and their bed linen should be very frequently changed—carefully and judiciously of course—but always sufficiently often to keep them thoroughly clean and free any excretations from the body of any kind.
There should be the fullest possible allow
of fresh air in the apartments.
It is said that if the Barberry bush were
exterminated the rest on wheat would
be exterminated with it. It is highly
probable that if the above plan were car-
ried out thoroughly and completely in all cases
of typhoid fever would be exterminated in a few years.
Tissue characteristics

By the term tissue characteristics of a disease we mean something more than is ordinarily included under the term pathological anatomy.

This is generally used simply to designate a description of the lesions as they appear to the eye. Under the term tissue characteristics we wish especially to discuss the character of the tissues involved, the order of their involvement and their relations to the particular type of disease in which they occur. The lesions should be divided into three classes: 1st those essential to the particular type of disease and without which the disease cannot exist; 2nd the lesions which result necessarily in account of the existence of the first; 3rd those which occur...
frequently but not necessarily in every case.

The first of these groups represent the histological
characteristics and the origin of the disease.

As found in the tissues in which they occur.

The second are the accompanying lesions and
the third are the complications.

We have recently read as closely as we could
the authors cited in the beginning, taking note
of the points made by each intending to quote
largely in this portion of our article. But
as the notes fill more space than can be
for this entire article we will be compelled
to content ourselves with a few quotations illus-
the different points.

Barrett - on the fevers of the US

Page 88 says, 'There can be better letter...
doubt. I think that one of the first, probably the first pathological alteration which takes place in the solids, consists in the tunification of the plate - Peyer's patches - nearest the ileoccecal valve. What are these plates - or as they are more generally called - Peyer's patches. On this point, there has been much doubt in the minds of histologists, but we find that more recently, this question has been pretty well settled and that they are to be classed with the sympathetic glands. Among those who have given unhesitating opinions to this effect, we may mention Kupffer, Kolliker, Franz, Lebermeister, Wagner, etc. and a number of others.
Flint says of these glands "they may be considered as constituting the first row of lymphatic glands in the body in the mucous membrane" That is they form the last of the lymphatic glands connected with the lymphatic vessels as they proceed outward from the thoracic duct or the first if we proceed inward toward the thoracic duct.

These glands are somewhat different from the other lymphatics. This difference seems to be that they represent but one half of an ordinary lymphatic gland: the lymphatic glands are made up of two parts. They have as system offferent vessels leading into an aggregation of cells and...
system of effusent vessels leading out of this
aggregation of cells. How the solitary glands
of which these patches are groups—being on the
ends of the lymphatic vessels having the
effusent system of vessels and therefore
represent—but one half of an ordinary
lymphatic gland.

It is in these glands that we suppose
from the evidences before us—that the first
effects of the syphoid fever portion takes
place—Bartlet whom we have quoted
is of the opinion that the irritation of the
mucus membrane occurs later and is probably
secondary to the irritation of the glands—
Rudolf says of these lesions—"We may
ascrube them to the local action of the
action of the poison, as much as they are produced in those very organs which are probably the channels through which the poison is introduced into the system.

In support of this view he cites—aside from the observation that this lesion seems to appear first—the frequent production of disease from contaminated drinking water and other observations which seem to show that the entrance of the poison is by way of the alimentary canal.

A number of the authors we have examined are not definite on this point. While we suppose that the inflammation of the glands is secondary to that of the mucus membrane, among the latter Kochtanevski is the
In regard to the time of the inflammation of the mesentric glands the evidence is that it occurs at the same time or immediately after that of the solitary glands. In some observations the inflammation of the mesentric glands have been apparently first and sometimes the solitary glands have been the first. Currie in reports a case in which all the characteristic lesions occurred in the mesentric glands—up to 800 with no lesion whatever in the walls of the intestine near the ileocecal valve. It seems that the patient had had the fever before and the solitary glands had sloughed out. There being no glands there to act as the tickers but the solitary glands above the point of pressure of inflammation the intestine escaped. The
patient however died of the fever nevertheless

The first of the solitary glands to be attacked are usually those situated nearest the ileocecal valve, from this point the inflammation extends upward along the intestine involving sometimes only a few inches of it, but occasionally a large portion or the whole of it and even the peritoneum. Not infrequently the colon is also involved sometimes extensively

It seems probable that in the beginning of the disorder the entire system of the lymphatics of the intestine is in a congested or hyperemic state bordering on active inflammation which causes a more or less general catarrh of the intestinal tract. Purdy says: "Mark all of the lymphatic structures in
in the wall of the intestines are complicated
in the first or catarrhal stage, with a marked

tendency to concentration during the process
of medullary infiltration - and in the stage of
sloughing there is a further and more striking
reduction in extent. He also found the same
conditions in the mesenteric glands,

Following closely after the inflammation of
the solitary and mesenteric glands comes the
enlargement of the spleen. Of this Green in
his Morbid Anatomy (Page 227) says "The splenic
issue becomes exceedingly vascular and the lymphatic
elements increase rapidly in number so that
the organ often attains two or three times its
natural size." This statement is confirmed
by Bird, Tewa, and others.
The inflammation of the lymphatic structure is not limited to these parts but it probably extends to all of the lymphatics of the body. Though not in the same degree yet in a portion of the cases there is evidently sloughing or ulceration of these glands in other regions quite remote. Barlet after describing the lesions of Peyer patches says "the glands of the mesocolon are effected in the same manner but less extensively. The same observation with the same qualifications is true of all the other lymphatic glands of the body. It is also true that these glands are rarely changed from their healthy state in any other acute disease."

Wagner in his general Pathology (Par...
SYPHOTIC new formations occurs constantly in SYPHOTIC Fever. These new formations are the only essential Morbid Anatomical Conditions in the small intestine - in the large intestine - in the Mesenteric glands, in the spleen - and not infrequently also in the Liver, in the kidneys in the Laryngeal Mucus Membrane &c.

It seems from the statement of several Authors Wagner, Rendulicz, Ballot, that all the Hyperemia of the Bronchial Mucus Membrane from which the Cough occurring early in the disease arises is due to the irritation of the bronchial Sympathics - Small but deep ulcerations are not infrequently found here which correspond with the position of the Sympathics, though as a rule the irritation subsides after the
Nuclei of the second week

Scheuerleer says after describing the hyperplasia of the lymphatic glands that do not generally relente—says: “The lymphatic glands which surround the follicles at the root of the tongue are affected in the same way, in most cases after a time the swelling subsides but sometimes softening and perforation takes place.”

We might easily go on giving quotation after quotation all going to show that the lymphatics of the whole body are involved in the syphilitic process but this does not seem necessary—We find that most of the more recent writers give the facts which show the this hיב is the true nucleus of the affection.
The Examination of the process occurring in
the sulci when it seems to us goes to show this.

Also shows that the mucous membrane does not
readily take part in the more intense forms of the
inflammation. The solitary glands are situated within
the Mucous Membrane and during the growth of the
morbid product in there there is moreover less
infiltration of the lymphoid material into it. In
general very little. When the sloughing comes
it is generally confined so rigorously to the gland
elements which are much enlarged that only
the portions of the Mucous Membrane lying immedi-
ately over them is destroyed. Even the margins of the
Membrane are left overhanging the opening
produced by the loss of the gland and the tendency
is to the healing of the wound at once after the
The removal of the gland. This could not well be the case if the true nucleus of the affection was in the mucous membrane as claimed by Kochanski; for in that case it should be especially the mucous membrane. While in fact we find that it is especially not the mucous membrane but the glands that slough. It is true however that when the cellular infiltration is extensive, there is much sloughing of the surrounding tissue. Not especially however of the mucous membrane but of the muscular tissue as well and even of the peritoneum. We believe that it has not been shown by any observation that sloughing occurs in the mucous membrane except in its immediate...
Regarding the lymphatic structures as being the true midst of the Typhoid process found in these forms the characteristics of the affection. These occur in every case of the disease no matter how slight. The sickness may be - in fact without then we can have no Typhoid Fever.
The lesions of the lymphatics
Various expressions are used by different authors in describing the lesions of the lymphatic glands. The inflammation is spoken of as inflammation by one, edema by another. Generation of the lymphoid material by another. Yet their descriptions of what they have seen are essentially the same. This change of the gland consists in a rapid increase of the peculiar granules or cells of the gland—i.e., the proliferation of a new product—Greene in his pathology describes these newly formed cells as being a little larger than the ordinary lymph cell and as containing a larger proportion of protoplasm.
We have made a critical examination of these cells both as they occur in the typhoid fever both in the intestine and mesenteric glands and have compared them with typhoid fever products occurring in the lymphatics from other causes as in contaminated ice and must say that we have failed to establish any characteristic difference. My conclusion is that there is nothing in the lymph cell to distinguish it as a typhoid fever cell.
implies. And others give a description which corresponds exactly with yours but regard these cells as the specific lymphoid cells believing that they only occur in disease. It is from the multiplication of these cells that the enlargement of the solitary and the mesenteric glands the spleen (the lymphatic glands everywhere) is due. In the mucous membrane they often over the borders of the glands and infiltrate the surrounding tissues—both the mucous membrane and the muscular tissue. Tissues so infiltrated usually though but not always, sometimes resolution is placed and the morbid products are removed by absorption. This is usually the
Function of the Lymphatics

In this connection a statement of the function of the lymphatics would be entirely proper as furnishing reasons why such an affection of them should produce such constitutional results as it manifested in this disease. But unfortunately our knowledge of how their function is limited. We know however that they take up a fluid from all parts of the body and return it for the blood and that the Lacteals which are the Lymphatics of the Nutritive system take up the oily portions of the food and convey it to the blood by way of the Thoracic duct. In this passage of these substances through this system of vessels it is all
passed through the glandular capillaries. Coming into intimate contact with the gland cells so that we are justified in the conclusion that it undergoes some modification which fits it for the purpose of Nutrition. We find in these glands a close analogy to the liver. The products of digestion taken up by the blood vessels from the stomach and intestine must first pass through the capillary circulation of the liver before it enters the system at large—before it is fitted to perform the office of Nutrition. Thus we see that all the products of digestion passes through glands glandular capillaries before it enters the system at large, and in this sense the
is the prototype

Lymphatic and mesenteric glands each

performs its part of the function toward

Certain nutritive elements just as the

one great gland of the body of

the blood vascular system performs

its office toward its absorption of the

elements of the nutritive material and

the one is probably as important as the other.

The maintenance of the normal standard

of health. If we have typhoid fever, we find just

such results as we should expect to find

in the disease of a special system which manages

do directly to the nutritive functions - great

association and failure of the nutritive

powers. It is rather the gravity of the

general disturbance of this system that
Marks the gravity of the case than the nature of the intestinal lesion. So rather

In other words it is the case in which the intensity of the disease is not concealed to strongly or one point in the intestine in which we have the very grave fever that kills by paralysing the digestive powers and wastes away the patient's life.

Why there should be a peculiar type of fever accompanying these lesions is not known. Neither is it known why a particular type of fever should accompany pneumonia or smallpox. These peculiar types of fever doubtless exist through the force of some pathological law not yet understood.
In this disease as in many others, it is not certainly known whether the fever stands in a causative relation to the lesions or whether the lesions stand in a causative relation to the fever.

The most general expression is however that the fever is the prime factor.

Knodlerich says, "We may regard the lesions as standing in the relation of an irritant to the constitutional disorder.

Liebermeister says, "Although the intestines is the first portion of the body affected, we are compelled to assume that the peritoneal poison is taken up by the juices of the body and so creates a general disease."

These expressions may be..."
regarded as expressing the general opinion of the medical professions.

Repoisoning

When we began this paper we had hoped to be able to present some views on treatment—but we have already taken as much time as we are rightly entitled to. We will, however, refer briefly to what is called repoisoning.

It has been held by some that a typhoid fever patient is being continually repoisoned by the typhoid material developed within himself. If this be true it is an unpardonable point—especially if there be any means at
hand for preventing it. It is on this theory we believe that the sulfocarbolic acid of soda treatments is based. In the discussion of this point we are led back to the causation of the disease.

Löwenstein's statements of the causation is very clear and definite, and we believe his views are supported by a goodly number of the most learned German writers of the present time, and we believe by most of the later writers on the subject. According to this view, it seems to us that the theory cannot stand for the reason that the poison developed in the body of the patient must be voided and undergo another phase of development out of the body before it can exert its specific poisonous action.

The adoption of this theory of the causation therefore...
at once does away with their theory of 
re-poisoning by the absorption of the lymphoid 
material in the intestine or directly from 
the source of production.

This, however, has nothing to do with another 
source of poisoning from the intestines which 
may be worthy of attention. We mean 
septic poisoning. In those cases when 
the lesions are severe and the sloughing 
extensive there is necessarily a very 
considerable formation of pus for a consider 
period of time. We suppose that as a rule 
this pus remains pure and landable 
while in the intestine and therefore will 
not act in the production of septic 
poisoning.
If at any time it should be otherwise it would certainly be absorbed by the veins and carried into the blood and thus produce its specific effects. Any treatment directed against this will certainly not be out of place and it is probable that the sulphocarbolate of soda treatment will have the desired effect.

According to the investigations and conclusions of Hoffman Lobersmith and others the complete development of the Thyroid Material within the body requires from three to four weeks after which time it is completed and becomes used. Now it is not improbable but it is highly probable that the sulphocarbolate of soda or other dissepiment Medicine will
diminish the intensity with which the
development of the typhoid poison proceeds
and that this is rather to be regarded as the
true theory upon which its employment should
be based.

In the feeding of typhoid patients
such food should be used as can be
assimilated without overtaxing the lactals.

It is essential the lactals that are diseased
and they are called into action by feeding
with those foods that contain much oil.

It is true that after the end of the second
week many of the lactals have usually
recovered from the shocks, and that the
lesions are concentrated in the glands
in the neighborhood of the ileocecal
Value but we have no means of definitely knowing the extent of the lesions. We have had some partial appearance in the early blisters - we were hopeful it showed some progress. However, we had this disease - because it passed out as milk, and that its effects were anything but pleasant. While plain baths made from lemon juice had just the spirit effect. We should not feed our patients as will best nourish them and we should not attempt to force the nourishment through a system of glands that are incapacitated by disease. If we attempt this, we will fail and the patient will drink in consequence. Milk seems to be the popular food for syphoid patients, and in many cases...
Where the lesions are closely concentrated in one point it undoubtedly answers the purpose well but in more grave cases where the hyperplasia of the glands is more extensive and less intensely concentrated it cannot in the very nature of things do much toward the nourishment of the body for the reason that it cannot pass the diseased glands. And if it is depended upon the anaemia progresses steadily.

In all cases of grave fever broth from the lean meats well concentrated will be found more servicable for these are taken up by the reins and have a clear route into the circulation.
worthy of the greatest consideration and the closest watchfulness on the part of the physician in each individual case and close attention to it will probably be more convincing to the patient than any point in the medication.

In feeding with milk we think it would probably be better to rob the milk of its cream. The calcium being the element demanded. This element of the milk is appropriate while the oil is not.
Adenolism

What are the reasons for the peculiar mental conditions in Typhoid Fever?

The fever itself accounts for some disturbance of the cerebral functions, but this furnishes no reason why it should be so different in this from other fevers. It is probable that this difference is caused by a perturbation of the lymphatic glands. The pathological peculiarity of Typhoid Fever is an inflammation of the lymphatic glands with suppuration of the aggregated glands of the elbow and occasional suppurations of minor importance elsewhere. How the function of the lymphatics is as yet but poorly understood at best, but it is tolerably certain that they take up something from the system.
at large and after passing it through
their glands deliver it into the blood.
The probabilities are that this substance
is some form of food or matter which
have become unfit for use and that by
this process it is again rendered fit for
use in the economy. Now in lymphoid
fever the lymphatics become in a large
degree incapacitated for the performance
of their function and as a result this peculiar
substance collects in the tissues and
lacunar circulation and acts as a poison
to the nervous system producing the peculiar
type of cerebral disturbance observed.