

AN

INAUGURAL DISSERTATION

ON

Inflammation

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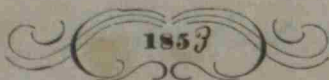
DOCTOR OF MEDICINE.

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Inflammation

Inflammation is beyond all comparison the most important of all diseased conditions, as it either attends or forms an essential part of the greater majority of serious diseases and generally constitutes the chief source of danger.

From this fact it becomes a subject of great importance and should be well studied and thoroughly understood by all who propose practising the healing art.

Inflammation may be defined to be a peculiar morbid condition or an unnatural action of the the capillary bloodvessels of any part of

the body, attended with redness, swellings, heat and pain, also with more or less disturbance of the system. There is no part of the body exempt from this disease Every organ and every tissue may become the seat of inflammation, and notwithstanding this disease attacks the various parts of the body it always seems to be of the same character, but somewhat modified by the state of the system, and the tissue in which it occurs.

The exciting cause would also change this morbid action to some extent.

This subject has been divided into Acute and Chronic by all writers from the earliest down to the latest. Generally speaking the
Chronic

Chronic form of inflammation is nothing more than a consequence, or a termination of the acute, though there are exceptions to this, for we find that in some parts of the body and in some constitutions that these morbid actions proceed more slowly than in others producing all the bad effects of inflammatory action, without the patient being at all aware of it, or without the practitioners detecting it. The acute form of inflammation is the most active and destructive form of the disease, and in which we find all the signs of inflammation beautifully exhibited. Redness, The first and most important sign of

inflammation to be noticed. It is by this sign alone that we are enabled at once to diagnose correctly the existence of inflammation. It is always found on the surface depending on a congested or an engorged condition of the minute terminations of the arteries externally. For an example of this sign of inflammation we have it beautifully exhibited in an inflamed conjunctiva.

In subjects that have recently died of violent inflammation of some of the internal organs, a good opportunity is also, frequently afforded of observing the enlarged and injected state of the capillaries with the red particles of the blood on which their colour depends. But because we do not

always find the capillaries of an
inflamed part after the death of the
patient injected with blood, is no
proof that inflammation did not
exist. To account then for the
paleness of an inflamed part after
the death of the patient, it is only
necessary to bear in mind, that
when the patient is in articulo
mortis the vessels all contract
and as a consequence of this contraction
the blood is thrown out of the
capillaries into the veins and
the surface is left destitute of
blood and of course pale. It has been
contended by some writers that
redness is not essential to inflammation
upon the ground that serous vessels

may be altered in size and function by inflammatory action and yet not become sufficiently dilated to receive the red particles of the blood again, these vessels may become sufficiently dilated to receive the red part of the blood, and though the membrane was colourless before it was inflamed it now becomes perfectly red. To admit this to be true would be admitting at once the existence of serous vessels and also that redness depended on the red part of the blood flowing where none flowed before.

According to the microscopic examinations of the capillary system of vessels ~~no~~ ^{one} has been able to demonstrate the existence of serous

vessels in them. No vessel belonging to the sanguiferous system has ever been observed less in size than a bloodglobule and these very minute capillaries carrying only one or two series of the red particles of the blood would of course appear colourless and these are what have been called serous vessels. Redness then is not a consequence of red particles flowing where none flowed before but from the capillaries becoming very much dilated or distended with an unusual quantity of blood which becomes stagnated in the central point of the part inflamed

Swelling. This symptom of inflammation is subject to equal di-

sensitiveness with the other phenomena.

It is sometimes slight as is observed in the mucous membrane, and sometimes enormous as is seen when the lymphatic glands and testicles are in a high state of inflammation.

Swelling is produced by the overloaded and distended capillaries relieving themselves by effusion of their contents into the surrounding cellular texture. This effusion varies greatly in its extent and consistence it is first serous and then mixed with fibrin, and consequently coagulates. These changes are caused by the intensity of the inflammatory action and the species of resistance offer by the surrounding

parts, the greater the resistance the less the effusion and more violent the inflammation and a speedy and favourable termination is retarded to a great extent

The next sign which attracts our notice taking them as they arise in this disease is, Pain. It is not to be associated with inflammation alone for there are numerous diseases attended with the ^{most} excruciating and long continued paroxysms of pain and yet there is not a vestige of inflammation to be discovered.

If we were to conclude that pain only accompanied inflammation we would often be lead into highly prejudicial proceedings, such as

the use of the lancet, in exhausting
the vital powers of patients who
are already worn out by disease,
the consequence of which would be
death. Although pain does not
depend on inflammation exclusively
for its existence, there being many
other sources by which it may be
created, yet, is one of the great
causes of pain and therefore pain
to a greater or less degree always
attends inflammatory action, and
fortunately for the patient that
it does. Were it not for this symptom
the patient would be totally unaware
of the existence of this morbid action
and would continue to use the part
affected quite to its destruction

Pain then is of more importance to the patient than any one else, by it alone he is told that something is wrong, and is compelled to resort to such means for its removal as reason dictates, of which none is more effectual than disusing the part affected.

The question arises what is the cause of the pain that is experienced in inflammation. When we think of the relative anatomy between the sanguiferous and nervous systems we find the bloodvessels and nerves coursing along in the same sheath and intimately ramifying throughout their whole extent.

In order that both perform their functions perfectly there must be a

reciprocal influence, for each is dependent upon the other for its efficient action. These being the facts in the case we can infer at once why there should be pain produced by inflammation. When the circulation is excited the nerves accompanying the excited and distended vessels become overstimulated and compressed, and in this manner pain is produced. Pain like all the other symptoms of inflammation is subject to various changes and modifications.

The degrees of pain which are experienced in an inflamed part depends principally on the intensity of the inflammatory action and the distensibility of the part affected. When bones or tendons
are

which in a healthy state are almost insensible. become inflamed they give rise to the most excruciating pain showing that the most sensitive parts in health do not necessarily become the most painful when inflamed.

Pain is not always present in an inflamed part, it may be persistent, intermittent or periodical, and may also be felt in parts remote from the part affected. The latter is exemplified in the hipjoint disease of children in which the pain is felt in the corresponding knee.

Heat. The last and according to some writers the only unequivocal symptom of inflammation.

Some writers contend that the temperature of an ar

of an inflamed part is considerably increased, while others contend that there is but little if any difference in the temperature of a part inflamed and one that is not. The heat of an inflamed part is generally supposed to be much greater than it really is. The sensation of heat is considerable to the patient as well as to the observer although the real temperature is but little increased. Mr. Hunter has proved by decided experiments on the mucous canals of inferior animals when in health, and in a state of violent inflammation, that, little or no variation of temperature can be observed. If there is increase of temperature in a part inflamed it never reaches

to more than a degree. The blood being the great source of heat, when an increased quantity is circulated in a part it is reasonable to suppose that its temperature should be elevated slightly above that of the surrounding parts. Although a part inflamed may be warmer than the neighbouring parts, yet this increase of temperature can never surpass the temperature of the heart it being the center of the circulation, and the point at which the blood has the greatest amount of caloric.

Causes. To give a minute detail of all the causes of inflammation, would extend the limits of this article far beyond the design of the author and therefore I shall only speak of a few of the most prominent

causes of the disease. The causes of inflammation are divided into pre-disposing, and exciting. Among the exciting causes of inflammation, Stimulents bear a conspicuous part in the production of this action, and is well shown by ^{the} application of blistering articles, and various ^{other} stimulating articles to the skin. Any solid substance, though by no means acrimonious in its quality, may act as an exciting cause, as by pressure or friction. Wounds when of considerable size, and occurring whilst the constitution is in an unhealthy condition give rise to local, and occasionally general inflammatory action. This action is frequently produced by injury from an obtuse body, causing a bruise or fracture; by the lodgement of foreign substances.

such as splinters of bone pieces of wood &c, into the system, or by irritating matter generated in the system itself. Cold is one of the most frequent causes of inflammation; the action of which is not well understood. In some instances it appears to act directly, as in inflammation of the mucous membrane of the organs of respiration, in others its action is ~~indirect~~ indirect, from some unfavourable alteration in the circulation, and the part inflamed is some distance from the part subjected to the influence of cold.

Terminations. Resolution is the most favorable termination, and is that to which our remedial agents should aim. But to produce restoration of the part affected, that is to leave not a vestige of the disease is almost beyond the power of our art, yet it

may be so nearly effected that the former locality of the vanquished disease can scarcely be designated. We know that inflammation may suddenly subside in a part leaving nothing behind to mark its ^{pre}cedations, but then it as suddenly appears in some other part and there vents its redoubled force.

This we term Metastasis. Serum may be effused from the bloodvessels and thus terminate the disease, or lymph may be found out ~~alone~~ or combined with serum, and then the part may gradually return to its normal condition, but in either case a deposit is left for the system to dispose of before the part can be termed normal.

The cause of the effusion of serum or lymph may be stated in few words, viz. Congestion of the capillaries amounting to distension, which

distension forces out of the overpowered vessels
the above mentioned fluids. Suppuration
is a termination of the disease, when by
its continuation the effusion of serum
and lymph have been forcibly prolonged
until the tissues of the affected part have
become infiltrated, and rendered partially
inaccessible to the circulating blood.

A portion of inflamed organ or part
being in a great degree cut off from
the vitalizing influence of the blood,
a change is immediately set up in it,
the result of which is the formation
of pus. This by the most accredited
authors is considered a vital change
and not a chemical change - as was
once thought. This new formation is not
conspicuous as was believed by the ancients,

but its power of destroying or breaking down the tissues is due to its presence, as a foreign body acting by its weight and thus producing absorption and ulceration. Ulceration and sloughing are results of the fourth stage of inflammation, and are each due to the same cause, acting with different degrees of intensity - Ulceration has two causes for its production, absorption and molecular death. Sloughing is produced alone by the access of the part to the circulating fluid being entirely cut off by the pressure of the effused fluids, and nature responding to the belabored organ or member, severs the remaining communication and frees the system of the lifeless mass.

Treatment

The first point to be attended to by the practitioner is to remove the cause if it is in his power so to do. If called to treat inflammation resulting from a wound it is his duty to see that all foreign bodies are gotten rid of - If the disease is in the conjunctiva see that ^{the} membrane is free from all irritating substances as sand dust &c.

The cause being removed, the next object is to reduce the inflammation by antiphlogistic treatment, by which is understood first. Bloodletting

The object being to relieve the congested state of the capillaries of the affected part by abstracting from the general tide, a large free open-

ing should be made into the vein, not for the purpose of drawing a proportional amount of blood; but, that by a large stream a sedative effect may be produced on the heart with but little loss of blood. The action of the heart being in this way restrained the circulation is rendered less forcible, and the congested capillaries are relieved.

The patient should always be placed in the erect or semi erect posture that the effect of the bloodletting may be seen, or the bleeding may be carried too far, for if the patient is in the recumbent posture the loss of blood makes but little impression on him, and he may be bled to exhaustion. It is not necessary to bleed to actual

syncope, an approach to it, being sufficient to secure the object desired

Local Depletion. If the disease is situated in an unimportant part, or trivial in itself, then local bloodletting is preferable, and it is unnecessary to draw from the general system

Again in a feeble constitution general bloodletting will not be borne, and then local depletion is the only resort.

If the disease is far advanced, and the chance of relieving the part by general bloodletting is diminished to uncertainty then it is useless to abstract from the general tide, more especially if the disease is extensive, for then it will require the whole force of the circulating mass to support the system during

the destruction of the part by the disease,
and restore the normal condition of the
body. Local bloodletting in this
case would tend to relieve the
congested vessels, and prevent extension
of the disease, Besides the recommendations
of local bloodlettings when used alone,
there are others which call for its use as
an auxiliary to general bloodletting
Local depletion from near an inflamed
part serves to extract from the capillaries
and in the mean time it excites the
action of the capillaries of the part to which
it is applied, and in that way calls
the blood off from the inflamed part,
and assists the general depletion in
establishing equilibrium in the circu-
-lation. Local depletion is performed

either by Cups or Leeches and each have
their preference. Thus Leeches can be
applied where cups cannot, but cups
are more efficacious and less troublesome
Purgatives are given to free the alimentary
canal and favor the action of the other med-
icine and to assist the action of the lancet,
and when of a drastic nature they deplete
nearly as rapid as the lancet.

Absorption is also increased by drastic
purgatives, and in the effect we have
a potent remedy. and one also derivative

Emetics act secondarily in producing
a sedative action on the heart, they also
act lenificially on the skin they free
the stomach of its contents, and are
also derivative

Mercury is highly curative, as well as

a preventative to the organization of the effused lymph, and also impedes the effusion and assists in its removal when it is effused. Mercury should be given in small doses, and retained from passing off too soon by combining it with opium. The object in giving mercury is not to produce salivation, but merely to bring the system under its influence. Opium is given to allay pain and quiet the nervous system, as well as to act on the skin and produce a sedative effect on the heart.

Antimony should be given for its sedative effect and is a diaphoretic

The regimen of the patient should be strictly antiphlogistic. The local treatment consists first in placing the

inflamed part in a favorable position
and securing rest. Cold applications
may be applied to relieve the congested
state of the capillaries. Heat and mois-
ture by means of Cataplasms will be
continually called for to relieve pain
the hard and tense condition of the
inflamed part, and thereby relieve
pain, and promote suppuration.

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