AN INAUGURAL DISSERTATION ON

INFAMATION

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BY

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Inflammation

First, inflammation is a perverted condition of the blood and blood vessels of a part interrupting its healthy function and changing its normal structure, ordinarily attended with redness, pain, heat, and swelling, and involving more or less disturbance of the general system. The term is limited to processes essentially morbid. The transition from health to inflammation may be divided into three stages, first simple vascular excitement, second active congestion, third true inflammation. First simple vascular excitement is where an irritant is applied to the skin and it
makes an impression on the nervous system which is manifested particularly in the blood vessels, at first the blood circulates with great rapidity, although the small arteries and capillaries are of diminished calibre, afterwards the vessels yield, and are dilated, and an increased quantity of Blood Circulated with great rapidity, with a tendency to serous & plastic exudation, the function of the part is exalted and this may be manifested by excessive nutrition or secretion, this is called simple vascular excitement, second active Congestion more Blood.
is sent to the part, and the capillaries and minute arteries begin to give way under the increased pulsation of larger arterial trunks, by over-distension the vascular coats lose their tenacity, and partly from this cause partly on account of change in the blood itself, which seems more viscous with its corpuscles less distinct and when examined by the microscope it is said to possess an increased number of colorless lymph globules, which are said to be unusually adhesive to each other and to the walls of the vessel.
the circulation it is said loses
its acquired rapidity, becomes
slower even than in Health.
The red corpuscles are not
merely not limited to the
Central Current, but are
ever soaching step by step
on Lateral and Clear Lymph
Spaces. Involvement is more
Copious than in the previous
Stage. It consists of Serum
and of Liquor Sanguinosis
the Latter usually predominating
and when the action has been
for some time sustained
and as it were established
in the part Fibrin alone
may be deposited. The natural
Function of the Part is not
simply exalted but begins to be prevented that is distorted; corrupted. For example secretion is not only increased but changed in its character. Nutrition is becoming more and more disturbed. This is the commencement of diseased action. This action may resolve after the removal of its simple exciting cause, or it may be sustained for some time, as in the Healing of Wounds and the Closing of Ulcers, or it may advance to true inflammation. The change which had begun in the blood
is now completed, the over-
distention of the Capillaries
is established. The Capillary
power is for a time gone.
Perhaps in consequence of
Diminution or actual Suspension
of the Nervous influence
and the Coats of the Capillaries
and other Vessels are thickened
softened and it is said to
be impaired in Cohesion
being themselves the subject
of structural change. The languor
of Circulation approaches
Stagnation and it is
said to have actually
occurred at some points
each part of the distended
Capillaries is occupied by
Crowded, coloured, and colonnade, Capillaries, partly it may be from increased attraction between the former and the surrounding Parenchyma, partly by accumulation and adhesion of the latter to each other and to the Capillary walls, the altered Liqueor, Sangvinis, is exuded in profusion. The Capillaries also give way in their coats, and from the lesion blood is extravasated in mass. Suppuration supervenes, from degeneration of the Fibrinovascular effusion, or else secretory elaboration of it ere yet it has left the vessel.
breaking up and disintegration of texture ensue according to the extent of extravasation and suppuration, and the disintegrated texture is commingled with the effusion. The formative power has ceased and the opposite condition, a tendency to disintegration from diminution of vitality, has become established. Disorder of function is complete. Secretion, for example, being in the first arrested and when arrested more vitiated than before. The local symptoms are redness, swelling, heat, pain and throbbing increased sensibility disorder of function, arrest and change
of secretion. Redness this is due to an afflux of blood to the part or in other words it arises from an increased quantity of blood in the inflamed part, not only in the larger vessels, but also in the capillaries. The vessels become distended and the capillaries convey red blood. The proportion of the red globules is also increased by the circulation of the serum. The degree varies in different tissues, and according to the intensity of the action. Compare for instance an inflamed tendon with an inflamed mucous membrane.
the Tint varies between a bright Scarlet and a deep purple, permanency is characteristic of inflammation, the redness of Blushing is not indicative of inflammation, because it is momentary. In some inflammations the redness is partly caused by extravasation of Blood, but in most instances it depends on an enlargement of the Capillaries and the consequent increase in the quantity of blood containing by them. There are also varieties as to Tint, extent and form. The Tint of the redness varies in different inflammations. in Common Acute and Sthenic
inflammation it is bright and vivid and the color of arterial blood, in chronic and athermic inflammation it is more of a dark or purplish tone, in Erythema it is said to be of bright rosy red, and perfectly continuous. In Erysipelas it is of a darker red. In Erysipelas attended with great Bilious arrangement it is of a yellowish red. Syphilitic inflammations has something of a copper tinge, in Scrofulous inflammation it presents a peculiar soft appearance, and when inflammation is about to result in Gangrene it is said to be of a dark purple
on a blackish line. The extent and form of the redness vary according to the character and intensity of the inflammation and the nature of tissue principally involved. The presence or absence of redness is not by itself a proof of the presence or absence of inflammation, for it often exists without inflammation, as in the Crimson Spot of the Hectic Cheek, or in the Blush of Shame, or when produced by Friction, or by the application of Heat, or by the Cupping Glasses, or by Leeches. On the other hand, the absence of redness is no
Proof that inflammation does not exist, for some inflammations, as those of the Cornea, and of the Arachnoid membrane, are attended with Opacity instead of redness, it is only in Conjunction with other local indications that redness is regarded as a symptom of inflammation. The diagnostic peculiarity of Inflammatory Redness is its Continuance so long as the Inflammatory Action which causes it remains. Swelling may in the early stage of the inflammation, be occasioned in some slight degree by the increased quantity of Blood
but it is chiefly caused by the effusion into the intervascular spaces of some matters called products of inflammation, the nature of these matters will first be reconsidered. The swelling of inflammation must be conjoined with other symptoms also. For in Edema there is swelling, but not inflammation. It must be gradual in its development. The sudden swelling produced by a Hernia or dislocation is not that of inflammation. It must also be recent, not like the growth of a Tumor.
Swelling may be injurious as in the Brain or Orbit of the Eye, or it may be useful as in a Fracture to. It is said to be most remarkable in loose Textures, also in the Breast, Testicles and Lymphatic Glands. It depends upon the kind and violence of the inflammation. The more violent the action the greater generally is the effusion, and partly on the nature of the part affected being greater in loose and dilatable Textures of a supple and dilatable Character, such as cellular tissue than is those of a hard unyielding nature, such as Bones. In loose Textures
generally, the swelling is most remarkable. The consequences of swelling vary much according to the importance, the delicate nature, the situations and relations of the part affected, in textures superficially situated which do not perform a function of great importance, which are loose and dilatable, and so placed that the swelling cannot prevent the performance of any function essential to the animal economy. the occurrence of swelling is followed by relief and is therefore favorably regarded.
by the Surgeon. Whereas, in
some internal organs, in
the sub-mucous cellular
structure of the Glottis, and
in many tenitures a delicate
nature, a very slight
degree of effusion is sufficient
to lead to a result. In
some firm and unyielding
structures it not infrequently
causes the total destruction
of the part inflamed. Swelling
as a symptom of inflammation,
it may be remarked, that
like redness it is generally
greatest at the Centre of
the inflammation, that it in
most cases is gradually lost
in the surrounding parts.
and that alone, as may be proved by many examples, it is no certain evidence of inflammation. Heat this depends upon a rapid oxidation of the tissues, which are also supplied with an increased quantity of blood. Heat of inflammation may be partly actual, as ascertained by the touch or the thermometer, and partly the result of a perverted nervous function. It must be permanent and conjoined with other symptoms to be characteristic, for in Hectic as I have before mentioned there is burning.
of the hands and feet, yet no inflammation is there. Pain varies in kind depending on the part principally affected. It may be of a burning, tingling, or pruriginous character, as in certain inflammations of the skin, or throbbing as when the cellular tissue is affected, or extremely acute, sharp, and lancinating, and greatly increased by stretching the inflamed part, as in inflammation of serous membrane, sometimes it is dull, heavy, obtuse, of an exceedingly oppressive character and attended
with a feeling of buzzing, as in inflammations of some glandular organs, and sometimes it is of a severe bursting character, as in inflammations of ligaments, fascia, peristeam or bone. Pain is caused partly by pressure upon the nerves of the inflamed spot, and the distension of the arteries which are supplied by small nerves, and partly by disorder of function. Mechanical pressure increases it, for instance, by the by the hand in Peritonitis, or inspiration in Pleurisy. Pain varies with the natural sensibility.
of the part affected, hence inflammation of the skin is more painful than that of cellular tissue. It is proportionate to the yielding nature of the structure affected, thus inflammation produces more pains in bones and ligaments than in mucous membranes. Pain is not always indicative of inflammation for example, in spasm the pain comes on suddenly and is relieved by pressure. In Neuralgia it is intermittent not so with inflammation in the latter the gradually increases from the first. If it suddenly disappears suspicion is excited lest
Gangrene has supervened, it may be sympathetic,
and referred to a part at a distance, in Caudalia the
pain is at the knee, in Liver disease the pain is in
the shoulder, in disease of the Kidney at the orifice
of the Urethra. Pain in different kinds of inflammation
varies much in degree, being in some kinds exceedingly
intense, so as to constitute by far the most urgent symptom;
while in others it is comparatively slight. In some
inflammations under certain circumstances it is said that
pain is absent, or in other
Words there is none usually
the intensity of the pain
is in direct ratio of the
firmness and unyielding nature
of the part affected. For
instance ligament, bone,
and fascia, structures which,
when sound are endowed
with little sensibility, are
extremely painful when
they become the subjects
of inflammation. There is
generally more pain in
external inflammations of the
investing membranes than
in those which affect the
substance of the viscera or
mucous membranes. In
inflammation of some parts
of Mucous Membranes, there is only a sense of heat and uneasiness not amounting to actual pain. It is generally greater in common than in specific inflammations, with the exception of gout. Of inflammation unattended with pain, the following examples may be enumerated. Ruminations and indolent forms of seroputinous inflammations, in which extensive disorganization is often produced without the patient having ever been conscious of actual pain. The absence of pain therefore is no certain evidence that inflammation does not
exist, and it is equally true that its presence is no proof of its existence of this we have examples in Cases of Neuralgia, the inflammatory pains are aggravated by pressure, whereas in Neuralgia it is often relieved by pressure, it is generally intense from the commencement and sometimes doubles suddenly. Inflammatory pain steadily increases while the inflammation advances, having been at first perhaps nothing more than a slight increase of the natural sensibility.
The sudden subsidence of pain in violent inflammations is more to be dreaded, than desired, as it gives ground to suspect that the part has lost its vitality, from the inflammation having gone on to gangrene.

Impairment of function in inflammation. Impairment or perversion of function is an almost invariable symptom varying much in character according to the organ affected, and the degree and progress of the inflammation. It is said to be in many cases first increased then preserved.
and afterwards, entirely arrested.

For instance, the Brain, when in inflammation no longer continues to perform its office as an Organ of intellect, having its function at first exalted as in delirium and afterwards entirely suspended on the supervision of coma, and other organs as the Stomach and Kidneys, and the Eye becomes intolerant of the slightest impression of Light.

The Causes of inflammation may be divided into predisposing and exciting. Predisposing Causes Sanguine temperament, excitability. Plethora, excess in food.
Drink or exercise debility. bad air and clothing previous disease to these may be considered as Constitutional or idiopathie, exciting Cause Acids Salts &c. or Mechanical effects of Wounds, pressure, and indirect or vital, such as heat and cold. Specific, as in the instance of Vaccine Virus, the duration and character of inflammation are modified by the nature situation and condition of the part affected, and the temperament and the diathesis of the patient age, sex, habit, atmosphere and season all exercise
An important influence in its progress and type. Results of inflammation resolution is the most favorable result, it is the restoration of the part. As regards both structure and function to its original and normal condition effusion takes place the vessels are relieved. The red globules move on, absorption takes place, and the usual symptoms subside. Which when serum is expressed and collected in serous membranes it constitutes Dropsy. Hemorrhage occasioned by the destruction of the coats of the vessels
if it occur in the interior it is termed extravasation, it is usually injurious, by producing pressure and exciting irritation as for instance in the human of the eye, or membranes of the brain, suppuration the formation of a fluid called brain, it is called tansable when it is yellow, creamy and opaque, insoluble in water but readily mixing with it, it has no odor, but a slightly sweetish taste it is not corrosive, but bland and protective to tender granulations until covered by cuticle it
Consists of a Fluid and Globules, the Fluid is the Liquor Sanguinis of the blood effused, when suppuration is profuse and long continued, in a debilitated frame it produces a Fever called Steetie, ulceration is supposed to be entirely the result of absorption; it is more properly a vital softening of a texture changed by inflammation & Suppuration becoming disintegrated and Fluid, it passes away with the pus; the greater the inflammation the more rapid is the destruction. Congestion is a predisposing
Cause of Ulceration. Those of intemperate habits, and of Scrofulous or Syphilitic Taint, are most liable to be affected. Those whose Circulation is weak and languid, Mortification is the Aying and Death of a part from injury or disease. Gangrene denotes the process of dying and is recognised by the following signs: redness is changed into a livid hue, Circulation is arrested, so is effusion, pain and heat abate, often suddenly, putreence commences and there is an offensive smell and visication.
The constitutional symptoms are of a Typhoid form, the pulse is small and frequent, irregular or intermittent, the countenance is anxious, the face livid, the nose pinched or contracted, anxiety is soon changed into stupidity of expression, as if the patient were under the influence of Opium or Alcohol, sighing, hiccup, and involuntary movements of the hands and fingers are now observed, such as picking at the bed clothes, appetite fails, the tongue is coated with a brown fur, except at the tip, end and edge the tips and
Mouth are dry and incrusted. Swallowing is difficult. The mind is stupid. Mortification may be acute or chronic. Acute comprehends the humud, inflammatory and Traumatic. The cause of Mortification is a want of vital power, and may be the result of high inflammation, Mechanical injury, pressure, heat, obstructions to the return of venous blood, deprivation of nervous energy.

I will offer a few words on the treatment, first remove the cause, and afterwards to prevent or diminish the inflammatory action, the chief means are
are termed Antiphlogistic and consist of general blood letting. This is only required when the inflammation is severe as in Erysipelas and Compound Fractures, when important organs are involved such as the Lungs, Bladder, Kidney, Eye and Peritonium. If resorted to unnecessarily it produce congestions, effusions &c.