AN

INAUGURAL ESSAY

ON

PHRENITIS,

FOR THE DEGREE OF DOCTOR OF PHYSICK:

Submitted to the consideration

OF

THE HON. ROBERT SMITH, PROVOST,

AND OF THE REGENTS,

OF THE

University of Maryland.

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TO

WASHINGTON M. CRAIG, M. D.

OF CAMBRIDGE, MARYLAND,

THIS INAUGURAL ESSAY IS

DEDICATED,

As a small tribute of respect, for the uninterrupted attentions and experienced advantages

Received by his pupil,

THE AUTHOR.

PHRENITIS.

THE disease I propose to treat of, is termed by medical writers Phrenitis, or Phrensy, and belongs to the second order of the first class of doctor Cullen's Nosology. By dissection, it has been discovered, that this disease consists either in an inflammation of the brain, or of the membranes investing that organ. It is said by some writers, that the symptoms differ according to the part affected; that when the membranes are inflamed, the pain is always more acute; but as the particular seat of the local affection does not affect the plan of treatment, I shall speak of both, under the name of Phrenitis. We have also, by dissection, been enabled to distinguish this disease from an idiopathick fever, in which the sanguiferous and nervous systems are affected, by the existence in this disease, of a sensible local affection. There is great difficulty in forming a diagnosis between phrenitis and idiopathick fevers, as the latter sometimes become a true phrenitis. The pulse, which points out to us many secret internal derangements, is the best criterion, in forming a correct diagnosis between phrenitis and idiopathick fevers. For the pulse, which is much dis-

turbed in idiopathick fevers, is almost natural in the early period of this disease, even after the organs of sense are much deranged. There is also, a difficulty attending the diagnosis between phrenitis and the other phlegmasiæ; but when the inflammation is seated in the brain, the symptoms are not local, but general; for on the brain depends the sensation and motion of every part of the system. It may be also necessary to distinguish phrenitis from cephalitis, which is conceived by some persons to be the same disease. Cephalitis is merely a congestion in the larger vessels, which occasions comparatively but little pain, little increase of temperature, and inconsiderable fever; whereas, in inflammation there is always acute pain, great increase of temperature, and considerable fever.

There has generally been discovered by anatomical investigation, in fatal cases of phrenitis, a considerable serous effusion, general or particular, according to the degree or seat of inflammation; which has been attributed by many, to an increased arterial action in the part; but it is at present most generally believed, that the effusion is a consequence of debility induced on the parts affected, the smaller arteries becoming dilated by the vis a tergo or the current of blood sent on from the heart, and readily permitting an extravasation of the serum.

Believing then, that inflammation is first induced, and that the effusion of the serum is the consequence of the local inflammation, we must at once admit the divisions of the disease into two stages, the primary inflamed condition with its phenomena local and gene-

ral, and the consequences of each; or the change thereby induced, both in the heart and the general system.

SYMPTOMS.

Phrenitis most commonly commences with a sense of fullness in the head, flushing of the countenance, and turgescense of the face and eyes, pulse full and not greatly different from its natural state; though sometimes, when there is much general fever, the pulse is quick and hard. Saalman, who once saw the disease epidemick, observes that it came on with "uneasiness of the head, back, and loins, tremors of the limbs, nausea, and sometimes vomiting." After the symptoms above noticed, pain in the head becomes very severe; impatience of light and noise; constant watching, and sooner or later, delirium.

The redness of the face and eyes increase with the pain, and the countenance acquires a peculiar fierceness. Many of the organs of sense now become impaired; the hearing is at one time very acute, at another time the patient is entirely deaf. The senses of smelling, tasting, and touching, become less acute. Respiration is generally slow, and difficult, though sometimes hurried and attended with hickup. The stomach is frequently oppressed with bile, and the skin and urine completely tinged yellow. Hemorrhage, Saalman observes, sometimes takes place, from the intestines and even from the eyes. The same author remarks his having seen the disease intermittent.

These are the symptoms which characterise the first stage of this disease, and appear to be owing to an enlargement of the capillary vessels of the brain, and consequent pressure upon the surrounding parts, for every part is now in a highly irritable state. But after this stage has continued for some hours, and sometimes for several days, the vessels become so dilated, that the effusion of serum takes place, which marks the second stage of the disease: and now, instead of the prominent eye, violent pain, and strong pulse, which were characteristick symptoms of the first stage, we discover a pallid countenance, dilated pupil, strabismus, sick stomach, with a quick, tense pulse, stupour, and lastly convulsions, which for the most part close the scene. As we, in the first stage, accounted for the symptoms by an increased quantity of blood, so we must account for the symptoms of this stage, depending on a diminution of blood in the part, for as the effused serum must occupy a given space, so according to the quantity of effused serum, will be the pressure upon the vessels of the brain, and the consequent diminished quantity of blood in the vessels. As the life of every part is dependant on a certain portion of blood, many of the phenomena of this stage become thus explicable. Charles Bell observes, that in sanguineous apoplexy, he has found the brain almost bloodless; for as the coagulum was formed, the vessels of the brain became compressed. Also, the pressure made by the effused serum on the extremities of the nerves, renders them insensible to customary

impressions, for sometimes every sense becomes affected, and complete stupor supervenes.

The causes of phrenitis may be divided into predisposing and exciting causes. As the early symptoms denote inflammation of the brain or membranes investing it, any thing applied to the living principle which acts as an undue stimulus, may be an exciting cause of this disease. Amongst the most common exciting causes may be ranked exposure to the sun, attended with much exercise in warm weather, also doctor Cullen ranks the passions of the mind and certain poisons, as exciting causes of phrenitis, but observes, "their mode of action is not well understood." I believe that phrenitis consists in a general excitement of the arterial system together with a local affection. All poisons taken into the stomach produce death by destroying the excitability of the system, but if taken in a smaller quantity they produce a general increased action of the arterial system, which appears, more particularly, to be determined to the brain. Violent exercise, intoxication, or any other cause tending to occasion an accumulation of blood in the head, may be exciting causes of this disease. These above mentioned are generally exciting causes of phrenitis though they may sometimes only be considered as predisposing. Among the predisposing causes, may be considered, fatigue of body and mind, and suppression of usual evacuations. May we not also rank amongst the predisposing causes, marsh miasmata, which, if we admit that the disease consists in a morbid excitement of the arterial system, with local inflammation, and the local inflam-

mation the consequence of previous local debility, must be a very common excuse: for marsh miasmata appears to act by inducing general debility of the system, so that any stimulus then applied may be the exciting cause of fever. In the same way, may cold in an excessive degree applied to the system, produce phrenitis, by first inducing debility of the system. Phrenitis sometimes arises from causes with which we are unacquainted. Sometimes it is symptomatick of fever and sometimes from a peculiar disposition of the atmosphere. Saalman in his observations on phrenitis, remarks his having seen the disease epidemick, and asserts that it was contagious. Like the other phlegmasiæ, it leaves behind it a predisposition to future attacks.

PROGNOSIS.

In forming a correct prognosis; in determining from the symptoms, the termination of the disease either fatally or favourably, we must strictly attend to the expression of the countenance. When the senses generally are much deranged, great debility, violent hemorrhage, pulse quick and strong or intermittent, we may then conclude that the disease will be fatal. But when we discover little or no stupor, breathing easy, slight hemorrhage and pulse full but not quick, or when the symptoms before violent after bloodletting, becoming mild, we may draw our conclusions favourably, for it evidently discovers the pressure made in the brain to have been diminished. There is frequently after the

local symptoms have been reduced, a typhus state of the system, which would induce us to draw an unfavourable conclusion, but almost as soon as the inflammatory symptoms have been subdued the system regains its former strength.

CURE.

Having a knowledge of the parts diseased in phrenitis and of the causes and symptoms, we are enabled to draw our conclusions as to the method of cure. The brain or membranes being in a high state of inflammation, we must first endeavour to subdue the impelling force, which is most promptly done by venæ section.

Bloodletting then, must be employed frequently, and the quantity proportioned to the violence of the disease, which should be in large quantities, as the disease so soon proves fatal. Topical bloodletting is preferred by many, and is supposed by all writers to be most effectual when drawn in the neighbourhood of the part affected; for it then serves the purpose of both local and general bloodletting. The temporal artery is the part most commonly directed by medical writers, from which blood should be drawn. Whether the bloodletting be general or topical, a sufficient quantity should be drawn to alleviate the symptoms, and even *ad deliquium animi*, should the symptoms not abate. By thus diminishing the quantity of blood, we permit the arteries to contract from their morbidly distended state, and to perform regularly the office as-

signed them. At the time we are employing bloodletting, all the antiphlogistick remedies should be brought into operation. Cathartieks are very serviceably employed by producing a discharge from the intestinal canal, also by a counter irritation. When spontaneous diarrhæa supervenes, we should be careful not to check it. After the bowels have been opened by some drastick purgation, the acidulated tartrite of potash, I would recommend, as it possesses a purgative quality together with a great capacity for heat. To assist in diminishing the blood in the vessels of the brain, the patient should be kept in an erect posture, in a dark room, the temperature of which should be considerably diminished. Cold applied to the head; for which purpose, ice would be found useful. The cold bath would have an excellent effect, if continued till the action of the heart and arteries were considerably diminished; but I believe (as yet,) it has never been experimentally proved.* Blisters are very generally recommended in this stage of the disease; but as they have a stimulant quality, they must be injurious in this early stage of the disease, for all stimulants, unless applied to the debilitated vessels themselves, would have a bad tendency. The remedies I have here recommended, are the only ones I should deem necessary in the first stage of the disease; but in the

* I find from a reference to the notes taken from doctor Potter's lecture on this subject, that so long ago as the year 1795, he effected a complete cure by immersing a patient in cold water, for the space of fifty five minutes. As soon as the pulse ceased to be perceptible, the patient was removed.

second stage, called *hydrocephalus internus*, where there is an effusion of serum into the ventricles of the brain, a different mode of treatment presents itself. It is supposed by many, that after effusion has once taken place in the brain, there can be no recovery; for they contend that the serum being once effused, never can be absorbed; that the absorbents are constitutionally formed to take up a peculiar substance, and the serum being different, is rejected by them; but as we have seen cases, in which every symptom evinced an effusion to have taken place, and the patient notwithstanding recovered, we have some reason to believe this second stage of the disease may be releived, though with more difficulty than that preceding it. As the cases alluded to, were relieved by mercury, we must consider this our first and most important remedy. What action the mercury exerts on the system, whether it act by its stimulant or diaphoretick quality, or by producing a different disease, I am not competent to determine; but as it appears to have a particular action on the absorbents, in many parts of the system where fluids have been effused, we may conclude that in this disease it has a similar action. Of the different preparations of mercury, its combinations with the muriatick acid, are preferable. The mild muriate of mercury, or calomel, so given as to act as a sialogogue, is most commonly employed, but as the disease sometimes terminates in a very short time, the corrosive sublimate might be preferable, as we can more readily with it induce a salivation. Issues and blisters may be serviceable in this species of

the disease, for they have proved so in many diseases in which we have discovered local inflammation, with a general affection of the system.

In several cases of phrenitis which came under my immediate attention, the remedies recommended in the first stage, were completely successful: as to the remedies in the second stage, I only recommend them on the practical information of the authors whom I have consulted.