An inaugural dissertation on apoplexy : submitted to the consideration of the honourable Robert Smith, provost, and of the regents of the University of Maryland / by Grafton Marsh, of Baltimore County, Maryland, vice-president of the Baltimore Medical Society.

For Doctr Baker with highest esteem and best wishes of the Auth

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INAUGURAL DISSERTATION

ON

APOPLEXY,

SUBMITTED TO THE CONSIDERATION

OF

THE HONOURABLE ROBERT SMITH, PROVOST,

AND OF THE

REGENTS OF THE UNIVERSITY OF MARYLAND,

BY

GRAFTON MARSH,

OF BALTIMORE COUNTY, MARYLAND,

VICE-PRESIDENT OF THE BALTIMORE MEDICAL SOCIETY.

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TO

DOCTOR HENRY HOWARD,

OF BALTIMORE.

DEAR SIR,

PERMIT me to dedicate to you, this Inaugural Essay, as a slender tribute of gratitude and esteem, for the many useful instructions and advantages which I have derived from you, whilst I had the honour of prosecuting my studies under your direction; they were ever thankfully received, and with gratitude will be remembered.

Of the polite and friendly manner in which you and your amiable family have always treated me, I shall ever retain a grateful recollection, and, be assured, that neither the powers of time nor absence shall ever erase their impressions from the mind of

Your sincere friend,

And pupil,

GRAFTON MARSH.

INAUGURAL DISSERTATION

ON

APOPLEXY.

When we take into view the different diseases which affect the human system, and which have made their appearances in different ages and countries, none appear to be of greater antiquity and of more importance than apoplexy. We find it mentioned by Hippocrates, who has been styled the father of physic, and by most practical writers since his time. And although it has been elaborately treated of by many of them, yet its cause, and what is of still more importance, its cure was ill understood and explained by most of them; and even at this day many of the physicians at London and practitioners of France, persist in the absurd and fatal practice of giving emetics.

In a medical treatise, as it is usual, it is proper first to give the reader a general introduction to the disease under review, and then the state of the various functions during the attack.

Some of the appearances observed before the apoplectic fit, which are vulgarly thought to promise long life, are in reality the effects of disease; the fulness of the body is often attended by a debility of the bronchial membrane, as is evinced by wheezing and frequent attacks of catarrh; there is langour, inactivity and muscular debility; and, to the discovering observer, the ruddiness of the

complexion often demonstrates a diseased state of the cutaneous vessels, connected with morbid actions of the stomach and liver.

Many of those fallacious perceptions which are known to arise from increased activity of the circulation in the head, have been observed for some time before a stroke of apoplexy. Such as muscae volitantes, tinnitus aurium, and various modifications of vertigo, and along with these is often a feeling of weight, tightness or tensive pain across the forehead, with painful throbbing of the temples, flushings of the countenance, heaviness of the eyes, temporary fits of blindness, and unusual flashes of light, are complained of; a hemorrhage often takes place from the nose and has frequently been known to avert an attack of apoplexy.

Some have sensations of loud and discordant sounds, like the boiling of an immense cauldron, the roarings of the sea or the clamors of an unruly crowd; their nights are often restless, from anxiety, palpitations of the heart, &c. On the contrary, the patient is often lethargic, sleeping longer than usual, and dosing during the day; his articulations are less distinct, he has no mental energy, he is forgetful, timid, irresolute and confused. Various slight paralytic affections occur, as weakness of a part of the body, sometimes of one side only, spasms of particular muscles, and numbness in the course of particular nerves. Before the apoplectic fit we may often observe great disorder of the chylopoetic viscera, and all the symptoms which might indicate a constitution impaired in every vital organ.

But it is not to be denied that apoplexy sometimes seizes those whose health, to every appearance, was unbroken, and who had felt themselves unusually vigorous for some-

time before the attack. Most of the foregoing symptoms generally precede a fit of apoplexy; though sometimes the patient is instantaneously stricken dead without a single premonition. Hence the disease acquired its name. The scene was considered portentous, and not to be explained by any of those marks or signs of decay which are part of our constitution, in so much that the sufferers were called attoniti or thunder struck.

Great changes may be observed in the state of the different functions in the course of every attack of apoplexy. It has every appearance, to a common observer, of a profound sleep, or rather like the sleep after intoxication: but the patient is not to be roused by shouting in his ears, &c.

We first discover confusion of ideas, a loss of voluntary motion, and of speech, then of consciousness, yet, generally, although the brain is much affected, sensation is not altogether destroyed for a considerable time, even after the brain appears incapable of *distinctly* receiving any impression conveyed by the senses, yet it is still alive to sensation in itself; the pupils are much contracted, the sufferer is evidently sensible of pain, and generally starts when pricked smartly with the lancet. But as the disease advances the organs of sense entirely lose their faculty of receiving impressions: the respiration becomes slow, laborious and irregular, the countenance flushed, the pulse slow and heavy, the pupil becomes dilated, the eye dead, the jaw falls, and the countenance is sunk and has a cadaverous aspect, the extremeties gradually become colder, and sphincters become palsied, permiting urine and fæces to pass involuntarily, convulsions supervene, and the paroxysm terminates generally in death, sometimes in palsy, but rarely in health.

This disease, like many others to which humanity is prone, exempts no age nor sex from its ravages. It attacks persons in youth, in middle age, and in the decline of life, though the latter period is supposed to be the most subject to its influence; it generally affects persons who have large heads and short necks, persons of a corpulent habit, who have passed an indolent life and used a rich and full diet, and especially those who have indulged in frequent intoxication.

Apoplexy has been considered by many medical writers as a hereditary disease, this to a certain extent may be true; but we seldom observe the disease to attack any but persons who have lived an indolent life and are fond of the luxuries of the table.

This disease is said to occur more frequeutly in the winter, or warm springs succeeding to cold winters, as the phlogistic diathesis is well known to prevail more at these seasons than at any other; there may be some foundation for the opinion, nevertheless it may occur at any period, as experienced observation establish.

Apoplexy also occurs more frequently during the night, or on rising out of bed in the morning, than at any time during the day. We know of frequent instances of people going to bed in apparantly good health, and being found in the morning lifeless and cold.

The diagnostic symptoms of this disease are sometimes difficult to be comprehended. Nosologists commonly make two species of apoplexy, the serous and sanguineous. Of the propriety of this division I am not prepared to determine. That serous effusions do take place in the brain is not to be denied, but these I consider as effects of inflammation and not as a cause of apoplexy.

There are several diseases taken notice of by authors under the name of carus, cataphora, coma, lethargus, &c. all of which are either symptomatic, or, as Dr. Cullen supposes, differ from apoplexy only in degree. Apoplexy differs from palsy by a suspension of all the powers of sense and voluntary motion; and from syncopy or asphyxia by the continuation of the action of the heart and arteries. It differs from natural sleep by its coming on suddenly and without previous fatigue, and the difficulty of rousing the patient from his apoplectic paroxysm.

Intoxication frequently presents phenomena very analogous to those of apoplexy, and even the physician of observation and experience may be deceived, if he does not attend particularly to the state of the breathing, which is generally saturated with the effluvia of the liquor which produced the intoxication.

All narcotic substances, such as opium, atropa, belladona, &c. when taken in an over dose produce symptoms nearly allied to apoplexy. The history of the case, and experience, so justly valued by the physician, must be your guide.

Large quantities of food taken into the stomach, which is difficult to digest, has sometimes produced phenomena resembling this disease. When the symptoms rise from this cause the pulse is not slow, full, or oppressed as in apoplexy.

It will be proper in every case of this kind, which comes on shortly after eating freely, to unload the stomach. If the patient does not vomit of his own accord, he should drink plentifully of warm water, or take a gentle emetic.

The causes which predispose the system to be affected with apoplexy, are all such circumstances as produce an

accumulation of blood in the vessels of the brain; such as excess in eating and drinking, probably by the sympathy which exists between the head and the stomach, or the increased circulation arising from the stimulus of a full meal. Some writers, overlooking these considerations, have laid great stress on the mere mechanical effects of the food.

Indolence and a rich diet may dispose to this disease by producing plethora.

The spontaneous ceasing, or suppression of any customary discharge, such as bleeding from the nose after it has become habitual, discharges from hemorrhoidal vessels, the suppression or cessation of the menses in women, by producing a fullness of the system, may act as a predisposing cause to apoplexy.

It has been observed by all writers that a large head and short neck, dispose to this disease; perhaps more stress than is proper has been laid on this form of the body. I am persuaded that there is so much more in the habits, than either in the original form or diathesis, that I might venture to say that nineteen out of twenty of those who die of apoplexy, might have averted, or postponed the disease by temperance.

Corpulency is also another of the predisposing causes. It is supposed to act by pressing on all the vessels of the body, except those of the head, and preventing the free passage of the blood through the lungs.

It is well known that continued and deep study, and despondence in consequence of great misfortunes, have a tendency to produce apoplexy.

The diseases which dispose to apoplexy are, gout, hemorrhages, &c. And the conditions of the system are pregnancy and old age. Unless the remote cause operates power-

fully, apoplexy seldom occurs in youth. Exposure of the feet to wet and cold, produce a languid circulation in the lower extremeties, and thereby cause the blood to flow in greater quantity to the head.

The existing causes of this disease come next in order to be spoken of. They are all such powers as when applied either generally or partially to the body, are capable of exciting a paroxysm of apoplexy.

Their operation is either to increase the momentum of the circulation through the vessels of the head, or such as prevent the free return of the venous blood from the head to the right auricle of the heart, thereby augmenting the volume of blood in the vessels of the brain, and distending them beyond their power of reaction, cause them to give way to the propelling force of the heart.

Violent exercise after a full inspiration is a very frequent cause of apoplexy, it acts by quickening the general circulation.

The general or partial application of heat is also an exciting cause of this disease. Reapers in the southern states who are exposed to the rays of the sun bareheaded, have been frequently known to die suddenly of apoplexy.

Violent passions of the mind, as anger, joy, grief, &c. appear to act in a powerful manner in producing this disease. It is said that the sudden drying up of eruptions, issues or setons, &c. has produced this disease.

Great muscular exertions, sleeping with the head low, or stooping for a considerable time, and mechanical obstruction to the circulation of the blood, are mentioned with great probability, as existing causes; they act either directly by increasing arterial action, or indirectly by loading the venous system. The Eclamsia, or the convulsion, or natural throes of pregnant and puerperal women frequently give

rise to, or terminate in apoplexy. Finally, any shock, either to the mind or body, may give rise to this disease in those who are predisposed to it.

We shall now attempt to give a brief description of the morbid appearances which are usually displayed in the dissection of the body after death from the apoplexy.

In dividing the integuments and removing a part of the brain case there is an unusual flow of blood, first from the superficial veins, and then from the sinuses. The dura and pia matter, and the tunica arachnoides are sometimes much thickened and opake; and in particular parts, nay, sometimes over their whole extent, exhibit marks of high arterial action. There is often observed between the tunica arachnoides and pia matter, a serous effusion, which varies in its appearance; sometimes colourless, at other times turbid and bloody.

Blood is generally found extravated in the cranium, sometimes between the membranes, at other times in the substance of the brain. Coagulated blood has been found in various parts of the cerebrum, cerebellum and theca vertebrarum of the same subject.

The ventricles are often enlarged, and sometimes contain a fluid resembling serum, and at other times coagulated blood, in considerable quantities; the communication between the ventricles are often enlarged; the vessels of the plexus choroides are often distended, and exhibit marks of high inflammation.

Extravations of blood is not invariably found, but we never fail to find the remains of greatly increased action, and great congestion, in the arterial and venous systems of the brain.

It is the received opinion, "that the extravation of blood takes place from the rupture of a blood vessel into

the substance of the brain." Dr. Cheyne, of Leith, a man of great experience and observation, appears to doubt the fact. He says it generally proceeds, not from one considerable vessel, but from a number of smaller vessels; and consequently, the more the larger arteries, by communicating a greater impulse to the blood, which they are propelling, can add to the effect of the increased irritability of their ramifications; the more one would expect they would promote that action of the minute vessels, which end in extravasation.

A detail of the above appearances, which are usually found in the brain after apoplexy, seldom leads to a knowledge of that peculiar condition of the organ upon which the disease may be said to depend. And I shall observe, with respect to the doctrines which have been brought forward on this subject, dignified with the name of theories, but, in fact, the mere expressions of opinion in abstract terms, that our knowledge of the brain is still circumscribed within narrow limits; we derive from reflected light whatever information we possess of the functions of the brain, for, although it may appear singular, it is no less true, that the imperfect knowledge we have obtained of the production and nature of the sensorial influence, we owe chiefly to morbid anatomy and clinical observation.

In a disease so awful in its appearance and dreadful in its consequences as apoplexy, a physician should be always on his guard in giving a decided opinion with respect to its favorable termination.

In as far as the system of the brain alone is concerned, we draw our prognostics from the quantity of sensorial power which still exist in the body: thus we do not despair until the pupil ceases to contract; with any return of sen-

sibility our hope rises, and with the diminution of it they are destroyed.

The greatest danger is to be apprehended when the patient is seized with convulsions, though it is not invariably followed by death. An unfavorable prognostic is drawn from the patient's putting his hand to his forehead. And when the patient has lost the power of deglutition, it is always a mark of a violent disease.

When the sphincters of the anus and bladder become relaxed and permit the fœces and urine to pass involuntarily, death generally ensues. An irregular and frequent pulse is always an indication of the utmost danger, and we may consider the patient as lost when the pulse becomes thready and weak.

And, finally, when there is a cold and clammy sweat, the face having a cadaverous appearance, the eyes sunk and dull, there are little or no hopes of a recovery.

METHOD OF CURE.

The cure of apoplexy is of the utmost importance, and should be attended to with great diligence by every physician who values the life and health of his patient. For the disease frequently runs its course so soon that, unless he is punctual in his attendance and administers the most suitable remedies without delay, his patient will soon be beyond the reach of his art. He will often be compelled to stand an humble and compassionate spectator, seeing his patient expiring in the agonies of death, without being able to administer any assistance.

If a person has once been afflicted with this direful malady, however slight it may be, he will scarcely ever

enjoy his usual health of body and vigor of mind as before, and he is forever after subject to a return.

This will divide the cure into two distinct heads: the first is to employ such remedies during the paroxysm as will tend to relieve the patient; the second is, after the fit is removed, to employ such means as will prevent a return.

The remedies to be employed during the fit may be considered under three heads:—1st, bloodletting—2dly, purging—and 3dly, external applications.

1st, Of bloodletting. This remedy is objected to by many practitioners of medicine, especially those of London and France, notwithstanding the endeavors of the ablest physicians to bring it into general repute. It is not my intention to enter into any controversy on this subject, being fully persuaded of the inefficacy of all other remedies in comparison with bloodletting.

Extravasation of blood arises, as I believe does every symptom of apoplexy, from increased irritability and action of the vessels; and these states are not to be moderated with dispatch and certainty, but by diminishing the quantity of the circulating fluid, and if the view of the brain, destroyed by apoplexy, does not prove how indispensible venesection is, every other argument in favour of it must be accounted weak.

The propriety of blood-letting, then, being established on the true pathology of the disease, the physician should, without a moment's delay, let blood copiously. The blood may be taken from the temporal artery, the jugular veins, or a large vein in the arm. It may sometimes be necessary to open the veins of both arms. The orifice should be made large, and the blood permitted to flow in a full stream until the system is affected. No precise

limits can be laid down as to the quantity of blood it will be proper to take; this must, in a great measure, depend on the appearance and habit of the patient, a knowledge of the circumstances of the attack, its violence and duration, and the effects of previous evacuation; the appearance of the blood, which is often sizy, the state of the pulse and breathing, in all of which the physician must be guided by his own judgment.

From the destruction of the organ, or the sinking of the strength there is doubtless in this as in every disease of increased vascular action a period after which general bleeding is a doubtful remedy; in such cases the head should be shaved and a number of leeches or cupping-glasses with extensive scarifications used.

2dly, PURGING has always been considered as a useful auxiliary in the cure of apoplexy, by all physicians who understand the nature of the disease, notwithstanding the declamations of vain theorists and idle speculators.

An active purge should be given to the patient as soon as convenient. Calomel is supposed to be the most suitable, particularly in the varieties of apoplexy connected with disorders of the abdominal viscera. To secure its speedy operation it ought to be followed by some of those cathartics which operate more particularly on the upper part of the alimentary canal, as gamboge, scammony, jallap, or a draught of the infusion of senna, if the patient has lost the power of deglutition an acid and stimulating enema should be thrown up the rectum.

3dly. EXTERNAL APPLICATIONS. I have observed that physicians generally order a blister to be applied to the scalp as soon as possible after the patient has been stricken with apoplexy. The propriety of this practice I think might be doubted with propriety. I believe it to be always injuri-

ous in the first stage of apoplexy, and were I to order a blister I should recommend it to be applied to the nape of the neck, as we often see it of signal service in relieving the headach which attends febrile diseases: blistering the scalp prevents the use of cold applications; as spunging the head, with cold water and vinegar, a solution of the muriate of amonia or iced water, which are applications of a less equivocal nature than blistering, and should never be omitted.

The management of a patient during the fit is of the utmost importance: he should be laid on a hard and firm matrass, in a large and airy apartment; his head should be shaved and exposed, uncovered, to a stream of cool air, and in order to restore the balance of the circulation, the heat of the extremities should be supported, if necessary, by warm fomentations: the head never should be permited to lie low, and an erect or at least half recumbent posture should always be preferred.

We come now to our second division, the cure of predisposition, a subject which has been much neglected by physicians. It is in the predisposition alone, that the physician can with confidence interfere, and stand as a barrier between his patient and death; for when the fit has actually taken place it often withstands the most active remedies, and the best directed art.

Bleeding, though it prevents present danger, produces no permanent effect, and should never be depended on in the cure of the predisposition. The patient who has once been stricken with this disease, or is threatened with an attack of it, should be carefully watched for months, and dieted for life, his diet should be almost entirely vegetable, since a vegetable diet is sufficiently nourishing for the purposes of life. He should allow himself no indulgences

at the table or in bed; should take no supper; should go to bed early and rise betimes; he should sleep cool on a hard matrass, with his head pillowed high; neither should he be permitted to have a fire in his bed-room; he should be purged freely and frequently with active cathartics; he should go a pleasant journey and seek a country residence; should avoid the air of populous cities and the heat of public assemblies; he should shun all mental exertion, all deep and abstruse studies and passionate altercations; he should be careful to preserve a serene and placid temper of mind, and sacrifice interest, pleasure, and even duties to health: his exercise should be equable and gentle; that of a carriage, or riding on horseback is the best: he should avoid the heat of the sun, especially in summer and autumn; should wear flannel next his skin, and bathe his head in cold water every morning; all spirituous liquors should be avoided, but if the patient has been accustomed to them he must abstain from them gradually. Issues and setons are frequently of great service; they should be applied to the nape of the neck.

This spare diet and cleanly living; these early hours and morning exercises in the fresh air produce a renovation of health and strength, and the pampered and self-indulgent patient, who engages with reluctance in this active mode of living, and is with difficulty inured to it, finds it at last, his happiest state, and is conscious of an alacrity of spirits, a clearness of intellect and vigour of health which he would not exchange for all those gross enjoyments, or that voluptuous languor in which he was wont to indulge.

Book taken apart. Leaves deacidified with magnesium bicarbonate. All leaves supported with lens tissue. Resewed on linen cords. New all-rag end paper signatures. Unbleached linen hinges. Rebound in quarter unbleached linen. Fabriano paper sides.

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