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Alexander

Thesis

by

Charles Bowman Alexander.

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Angina Pectoris.

In no disease has there been more indulgence in hypothetical speculations, or greater diversity in opinion as to its nature and cause than in the one now before us. This no doubt is greatly to be attributed to the extreme diversity of morbid appearances which have been observed on examination after death, for, like epilepsy, it has presented almost every appearance of disease, to which the organs it affects are liable. This accounts for the great discrepancy in opinion, which so generally
prevails among authors, respecting the various and precise modes, in which this most distressing disease derives its origin. Unfortunately the lesions which appear to produce it constitute a long list of diseases, some of which are of an untreatable or nature, as to baffie all human skill, and frustrate the best directed efforts of our art. We are at no period of our lives, from the cradle to the grave, free from their invasion. They are often born with us, or sometimes we are made their prey, when far advanced in years.

For the present Essay, I shall treat of the history and symptoms of Angina Pectoris, then its Causes, Predispousing, Exciting and Proximate, and lastly the various means which have been had recourse to, for the alleviation or removal of such
causes and morbid conditions. This disease has been described by different authors under various misleading appellations, such as Syncope Anginosa, Asthma Dolorificum or Arthriticum, Orthopnoea Cardiaca, Sternocardia, Sternalgia, and various other names. The name prefixed to this Essay was given to the disease by Dr. Heberden, on account of its seat, and the sense of strangling and anxiety with which it is attended. The word Angina having been applied by the ancients to all diseases of the throat accompanied by a feeling of suffocation or strangulation. If we search into the medical literature of former times we shall find not obscure notices of affections of this nature. The earliest and most unequivocal cases of Angina are to be found in the works of Hoffmann & Morgagni, & the great interest which has of late years
been excited by this remarkable disease may be reasonably ascribed to its singular symptoms, and to the able manner in which Dr. Heberden first delineated these symptoms upwards of sixty years ago. The want of post mortem examinations on his part necessarily render his information partial & inconclusive, for when we consider Angina in the most strict interpretation of the term, it will be obvious that he described it solely from one or two of its most prominent symptoms. Therefore any two physicians may be equally authorized to employ the same term to designate phenomena of a similar description, though arising from morbid affections of a very different nature. This, as I have said, explains to us, why there should be so much discordance of opinion, respecting the nature of this disease, some ascribing it to one cause, some to another. It has
been minutely described and well illustrated by many modern authors of established reputation, as Dr. T. G. D. Dr. Dunsan, Percival, Darwin, Macbride, Hamilton, Hazggarth & Parry, most of whom have accompanied their description with a speculative inquiry into the causes of the complaint.

Definition. — By anginapectoris is understood an affection, in which there is acute constrictory pain at the lower part of the sternum, inclining to the left side, extending up along the throat, from left side of the neck, down the left arm, sometimes both arms, coming on by paroxysms, which are characterized by an intolerable sense of anguish, difficulty of breathing, tendency to syncope, and a dread of immediate dissolution.
History—This disease is of an intermittent character, in which the patient has intervals of comparative ease or of perfect health, between paroxysms of greater or less suffering. The paroxysm usually makes its first attack while the patient is taking exercise. The face becomes pale, the expression of the countenance haggard, the whole body covered with a cold sweat, & death appears to be impending no less to the inexperienced spectator than to the miserable patient. Such in fact, is sometimes the termination of the paroxysm, but rarely, or scarcely ever in the early stage of the disease. After suffering for some time, longer or shorter according to the severity of the paroxysm, the patient suddenly or gradually returns to his former state of health.
an attack of Angina, there is frequently considerable disorder of the chylopoietic viscera, manifested by flatulence, acid or aerid eruptions, and various other symptoms of dyspepsia, torpid bowels, general pains, & chronic spasms about the chest.

It not infrequently comes on without any appreciable cause or the slightest premonitory symptom. The patient is suddenly seized with an intolerable sense of anguish or pain in the cardiac region about the lower half of the sternum & towards the left side.

This feeling is variously described, as a structure or weight, or sensation of a lacerating and burning pain, which is very various in degree, shooting upwards or downwards, or to the left side,
and very often through the right side of the chest, towards the shoulder & scapula, stretching along the left arm as far as the middle of the humerus, but after the pain reaches successively to the elbow, wrist & fingers. The pain in the last named situation is sometimes extremely acute; frequently similar sensations are experienced in the lower extremities. The mildest form of this affection generally disappears with the exciting cause, but in the more violent forms again, these sensations of pain & constriction in the chest become so poignant & excruciating that they frequently induce a dread of immediate dissolution; hence the patient, if walking, makes a sudden pause, to which he feels himself compelled, from an apprehension that were he to persevere, the powers of life would be totally
suspended. The pulse is found to vary considerably in different cases; sometimes it is regular, at other times irregular; in one patient it is frequent, in another slow; sometimes it is feeble, sometimes strong and full; occasionally altogether suppressed; most commonly, perhaps, it is regular, but small and weak. Patients are almost invariably troubled with an accumulation of flatus in the stomach, the discharge of which gives temporary relief. In the slightest case, rest will give relief, but this does not happen in the more protracted severe forms of the disease. Riding on horseback may bring on attacks, but they are not induced by it, nor by exercise that is of short duration, at an early period of the disease.
The disease appears to become stationary for an indefinite length of time, and after a while gradually increases in severity, as well as frequency, but in other cases, the complaint is characterized from its commencement by more or less intense cracy. After the lapse of a variable period of time, paroxysms are more readily induced, are of longer duration, return with angi- mented severity, even by the slightest mental excitement, or by the evacuation of the urine. Previous causes which were formerly insufficient for their production, sometimes the paroxysms affect the patient without any obvious provocation, often during sleep, in consequence of which he is suddenly awaked, is forced to assume the 'tuck posture. This suffering now assume a more formidable aspect, & the victim
energies of the frame begin to give way. Marked disorder of the digestive functions, with impaired respiration, great derangement of the circulation, edema, stricture, frequently hydrotherapy, at last supervene, and an end to the patient's suffering.

Predisposing Causes. — There is no situation in life peculiarly exempt from this disease, but it attacks some persons of certain habits and conditions of body much more than others. It is said that those affected with it have usually attained the middle period of life. This however is not universally the case, as we meet with some well authenticated instances on record.
of this affection occurring in early life. It is of more frequent occurrence in the male than in the female sex, or in those who are robust & corpulent. This last however is disputed by Irvine, Chapman, Cuspland & others, perhaps they are most correct, who ascribe its greater prevalence to the gouty and rheumatic diathesis, those who lead an indolent life, or who are subject to much distress of mind from disappointment, anxiety & other depressing passions, or who indulge in much good & spirituous liquors. Some think that they can trace an hereditary disposition in this affection, as do those who consider it of gouty origin, as Butler, Asner, Macquade.

Exciting Causes. — These are whatever stimulate the heart to inordinate action, as strong
Muscular exertion in walking, running &c.
It is frequently brought on by irritable habits
by the more powerful emotions of the mind,
and even by the simple act of turning in bed,
breathing, sneezing, or sometimes even by the presence
of a full meal in the stomach.

Proximate Causes. — Among the chief of these may
be adduced the following, 1st. An occluded state
of the coronary arteries, or any other diseased
state by which their caliber is diminished, or an
occlusion of that part of the aorta where the
coronary arteries arise, thereby diminishing their
mortal aperture, which will as eventually prevent
the heart from receiving a necessary quantity
of blood for its nourishment, as if there
was a deprivation of all nourishment throughout.
their whole extent. II. Dilatation and enlargement of the valves of the heart, also contractions of the various orifices, preventing the free transmission of blood through one or more of its cavities, producing enlargement of some of them, either with diminished or increased thickness of their parietes, but most commonly with softness, swelling, and tenacity of the muscular structure of the organ, according to Borda, varicose dilatation of the coronary veins. III. Aneurism with ossification of the thoracic aorta. IV. Effusions of serum within the pericardium, or within the cavity of the pleura, also depictions of adipose tissue about the heart, to such an extent as to impede its function.
V. Disorder of the digestive organs, producing dyspepsia. In some cases there exists either no structural disease, or none that can be detected. Sometimes the heart and large adjacent vessels are found to be exempt from structural disease, and the morbid lesions are found in other organs, such as ulcers or tumours of the mediastinum, adhesions between the pleura, pulmonalis, costata, thickening of the mucous membrane of the bronchi, ossification of the cartilages of the ribs, and tubercles & enlargement of the liver, with scarlatina of it. The Hygeias, Butter, Macqueen, Chapman and others consider argina as nothing more than
a form of gout, and Dr. Forbes remarks, "When stated with due regard to philosophical accuracy of language, there can be little doubt that this opinion is correct in a very considerable number of cases of angina, for in a certain proportion of such cases, we have all the local characteristic phenomena of gout, either coexisting or alternating with angina." In Dr. Parry's work on angina, we find the opinion advanced, that a mal-organized state of the coronary arteries might probably be reckoned a cause of this affection, and he, as well as Burn, Freytag, others have viewed this affection as a species of syncope occasioned by an accumulation of blood in the heart, from the condition.
of its arteries which we have described.

Laennec denies such a state of the coronary arteries existing. There are certainly cases reported by many eminent Pathologists of ossified coronary arteries, in which there were not developed the usual characteristic phenomena of this disease. But we apprehend they are few in comparison to the number in which characteristic signs have been evinced.

Dr. Turine supposed the proximate cause to be a neuralgic affection of the pulmonary nerves, disturbing the function of the lungs, consequent upon imperfect oxygenation of the blood. Laennec and Desportes have
taken nearly a similar view of it. They suppose it to be sometimes confined to one part, but frequently extending at the same time or vicariously over a greater or less portion of the stomach, lungs, and also extending by nervous communication to other parts, so that the organic lesions found in fatal cases may be viewed either as accidental concomitants or as concurrent causes, or not infrequently as results of repeated functional disturbance occurring in a series of attacks. The great anxiety which a person ex-
periences during a paroxysm of angina pectoris, on the supposition of its depending upon an added or more or
In a obstructed state of the coronary arteries, may perhaps be accounted for in the following manner. The blood returns usual by the vena cava to the right auricle but the heart being impoverished, is unable to perform its healthy function; the blood is imperfectly expelled, it accumulates, the heart becomes so oppressed, that a spasmodic contraction ensues, which is no other than an effort of the constitution to unload itself of the burden. This oppression arising from the accumulation or stagnation of blood in the cavity of the heart, is no doubt, the source of those distressing feelings, which harass the
patient so much, to relieve which, he makes frequent efforts at full inspiration. The readiness with which paroxysms are brought on is in proportion to the degree in which the heart's action is accelerated. This accounts for the paroxysms being more readily induced on taking exercise immediately after a meal, than when the patient is subjected to the same causes at other times. Nocturnal paroxysms are probably owing to the accumulation of blood in the heart and large vessels in its vicinity occasioned by late suppers, as Parry supposes to an accumulation of gases in the colon, pressing upon the aorta, so much as to impede the flow of blood along that vessel. In consequence of the
impediment thus occasioned, the heart attempts
to overcome it by an increased effort, but
from its organic derangement, it cannot
support the additional exertion, and a
paroxysm ensues. These symptoms pro-
duced by derangement of the digestive
organs are probably consequent on the
 generation of a great quantity of flatus
in the stomach & intestines distending
the former & possibly the lower part
of the oesophagus, & so compressing in
some degree the heart. This is evinced
by its evacuation affording instant
relief to the patient. But this effect
of a collection of a uniform fluid in the
stomach is not sufficient to explain
the whole of the phenomena, we must
Therefore attribute it to a direct sympathy between these organs.

Treatment.—Angina Pectoris arising from organic lesion in the structure of the heart can only admit of palliation. The functional variety, or that which arises from irritation of the digestive mucous membrane or from a general disordered state of the constitution can sometimes be entirely removed. We shall first consider what may be done for the removal or mitigation of the paroxysms and then endeavour to state those measures which seem best adapted for the relief of the patient during the intervals for preventing the recurrence of attacks.

During the paroxysm, especially if the patient be of a plethoric habit, there can be no doubt as to the propriety of
abstracting a few ounces of blood, in order to relieve the overloaded condition of the heart. Some recommend it even when the pulse at the wrist is with difficulty or not at all to be felt; others again consider it doubtful whether or not cupping should be employed under such circumstances. The states of general and local plethora frequently found in those subject to &rightrairr's, fully justify the use of &rightrairr's when employed with discretion, as is proved by the practice of several eminent men, as Perceval, St John, Burns. The patient should be laid in the horizontal posture as soon as the paroxysm comes on, and free circulation of cool air admitted. If he has a struggling pulse with considerable
power, the greatest benefit will be derived from the abstraction of a few ounces of blood, after which diffusible stimuli may be cautiously administered such as brandy or ammonia or sulphuric ether. In dyspeptic complications, urinary there exists distention of the stomach by flatus, carminatives are more particularly indicated. Perhaps the simple aromatic waters as peppermint will be found as effectual as any other. Anodynes have been used, but their good effects seem to have been counteracted by the mental distress which in this disease exists along with corporeal suffering. Frictions with stimulating lotions over the thorax are very useful and counterirritation has been very much
launched by those who consider this affection as a form of misplaced gout, & it is found to be beneficial under all circumstances. Emetics have been favourably spoken of by Dr. Mason Good & Percival.

Nothing has been more recommended by those who have had much experience in the treatment of these complaints. The means which may be employed during the interval consist in a great measure in guarding against the causes which obviously excite the attacks, i.e., in observing a most cautious and rigid regimen. The cure of the disease, if it is curable, or its efficient relief, must depend upon measures more of a dietetical than medicinal agency. The digestive organs must be restored to the proper performance of their functions, & the diet should be as little nutritious and stimulating as possible. Alterative aperients...
may be occasionally administered, conjointly with antispasmodics as the state of the patient may require, & gentle exercise may be allowed under favourable cir-
cumstances. in all cases, the patient should be so far instructed in the nature of his complaint, as to make him aware of the necessity of avoiding all exciting causes. All mental emotions, especially that of anger, as they have the effect of exciting the heart to inordinate action, must be avoided with the greatest care. With respect to the topical means which have been found beneficial, we may mention sponges, issues, blister or artificial eruptions with Tartar Emetic ointment, to which we may add magnetism.
as applied by Laennec & others. But although these or other means may occasionally afford relief, or may even ward off death, it is evident that every kind of treatment confined to the paroxysm is of very slight importance with that which is to be employed in the interval; the former can, at most, afford temporary relief; the latter may cure the disease.

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