1856

Aneurism of the arch of the aorta

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I. DEFINITION

The term Aneurism of the Aorta is generally understood to mean a pulsating tumour, formed by the dilatation of the whole, or the rupture of the middle and internal coats, of the Aorta. The tumour may arise either from the whole or a part of the circumference of the Aorta, which causes it to be irregular in shape. Remembering the anatomical relations of the parts, in contact with the artery, every one must be struck with the necessity of a correct diagnosis. So that, although we cannot expect a cure, we can so ameliorate the patient's condition as to render life less burdensome to him, and thus enable him to recognise the disease at its very earliest period, that we may adopt those means which are best calculated to arrest, or at least retard its progress.
II. ETIOLOGY

The causes of aortic aneurism may be divided into two orders, namely, 1st. Those which are intrinsic and seated in the artery, and 2nd. Those which are extrinsic or act as external on the artery. The intrinsic causes correspond to those called predisposing; the extrinsic to the exciting causes.

The intrinsic causes of aneurism are those which chiefly affect the arterial tunics. It has been ascertained by various observers that the arterial tunics are liable to become affected with various changes, if the nature of deposits. These may consist of calcareous, scarring, or otherwise. Whatever the cause, there is good reason to believe that these deposits are the result either of a process of chronic inflammation, or are accompanied therewith, or it may be that they are the effect of abnormal nutrition. But whatever be the cause which tends to produce them, it seems to be ascertained by the observations of Dr. William Stevens, that in the human body after the age of 34 or 35 years, these changes are liable to take place in various parts of the arterial system, chiefly at the bifurcations. The effect of these changes, and probably the state of abnormal nutrition,
or chronic inflammation by which they are accompanied, or to impair greatly the planed and elasticity of the arterial tubes, which then become brittle and less able to bear mechanical shocks, than in the state of health. In addition to this, the internal surface of the artery rendered rough, does not allow the blood to pass along its walls so readily as in the normal state, and occasionally a deposit of thin plastic lymph is extended along the whole interior of an artery.

The causes now mentioned, are common to all arteries. But the aorta is liable to particular forms of these degenerations. The first of these is generally seated at the commencement of the aorta, immediately beyond the semilunar valves, called the sinuses of Valsalva. The site most in frequency is at the arch of the aorta, where the bifurcation of its branches takes place. The third is at the highest part of the descending portion of the aorta, where its walls are more in contact with the blood. The fourth is opposite the bifurcation of the celiac artery in the abdominal aorta. It is a natural question with any one who observes these changes in the tunics of the aorta, and indeed in arteries in general, to enquire what are the causes upon which these changes depend. Upon this point it is not easy to obtain positive information. It seems, however, to be ascertained that the middle and internal coats of the arteries perish a natural
tendency to become diseased after a certain period of life. That is to say, these changes will take place under all kinds of mode of living. There are, nevertheless, two causes under the operation of either of which this disease frequently occurs. These are intemperate and habitual use of alcoholic drinks, and the use of mercury in long continued and repeated courses.

With regard to the first of these causes, the fact is so well ascertained that it is scarcely due to adduce proof. The bodies of almost all who have been in the habit of drinking, if taking these liquors, show the deposit of fatty and calcareous deposits. Much more extensively diffused over the arterial system, than in such persons as have avoided the intemperate use of these liquors.

Regarding the second cause, it has long been observed among the patients of large hospitals, that in the bodies of those who have been subjected to repeated courses of mercury, diseases of the arterial system, and especially arteriosclerosis, are of frequent occurrence. Of this fact that must be admitted, it is unnecessary probably to attempt any explanation. It is sufficient to know that the effect of mercurial tinctures taken into the system, is to produce a morbid state of the blood, analogous to chronic inflammation, and to produce chronic inflammation.
in the arterial tunic; some may be disposed to call this, Intercutaneous, but it is unnecessary to dispute about the name or term employed. The nature of the change is the only subject of our present inquiry.

Connected with the etiology of Aneurism there is another important fact which deserves mention in this place. It has been observed that occasionally Aneurism occurs at two different points in the arterial system of the same individual. Thus, it has been observed that the same person may have an Aneurism in one of the posttemporal arteries, and an Aneurism also in the Arch of the Aorta. Instances have occurred for example in which a person undergoing the operation of dilation of an external artery has died suddenly during the operation: the cause of death being an internal Aneurism which had either burst, or had undergone some sudden change which put an immediate stop to the action of the heart. These facts render it of the utmost importance to obtain correct means for recognising the existence, in doubtful cases, of Aneurism of the Arch of the Aorta.

The intrinsic or exciting causes of Aneurism may be divided into two heads. Those which are owing to laborious occupations, or violent muscular efforts; and those depending on disease.
of the heart.

W. Porter denies that peculiar trades predispose to Aneurism. This is opposed to the general opinion. But, he brings forward as a reason, that this disease is as common in the higher classes as in the lower. This is a point that is difficult to prove by statistics; admitting, however, the fact, may it not be accounted for in this way, that the intrinsic causes are much the same in both classes, while in a great many instances the patient's history showed that if he was in the higher ranks of life, he was devoted to athletic pursuits. No one will say that labor causes the arterial coats to be degenerated. But, if they should become so, violent muscular efforts might be easily understood to produce Aneurism. These same muscular efforts, suddenly exciting the circulatory system, do readily produce arterial dilatation in those who are subject to the Aneurism mal de Mer. Diseases of the heart may be an exciting cause of Aneurism, and more especially does hypostrophy of that organ seem to bring about that result. Hypostrophy is often consequent upon incompetency of the semilunar valves, and regurgitation taking place into the left auricle, an increased force is required to force the blood
Extrait de "Médecin Praticien", par T. L. J. Balleys. Tome II
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Towards, and such disturbance in the arterial system, may pursue as to induce aneurismal dilatation at some point.

Stokes mentions hypertrophy of the left ventricle as a consequence of aneurism, but says it is only accidental. The artery, though increased in bulk, and containing a great quantity of blood within the aneurismal cavity, does not permit of the blood flowing freely as in those parts not affected. This partial stoppage of the circulation readily accounts for hypertrophy of the left ventricle being a consequence of aneurism.

Among the intrinsic causes the abuse of alcoholic liquors has been mentioned. This abuse may also be noticed among the exciting causes for an excessive debauch may be sufficient to produce an aneurism, the arterial system being already predisposed, intrinsically, and being stimulated by an undue amount of alcohol to sudden disturbance.

As the female sex are less addicted to the abuse of spirituous liquors, this may be considered why they are partially, as compared with males, afflicted with this disease. Mr. Lapar however doubts the validity of this reason and alleges that the arterial tunic in females are less liable to
degeneration than in the other. Still, both Mr. Biggs and M.Sonyis (referred to the latter, an unpublished research) have clearly disproved M. Lopari's assertions.

Another cause may be mentioned as arising from violent mental emotion. An interesting case of this description is mentioned in the 5th vol. Dublin Hospital Reports, in which there was no doubt of the aneurism having immediately followed a violent fit of passion. In this case & a spontaneous case had taken place at the time, but I have been unable to find any further mention of this patient's history.
Perhaps the reason why those sites, which were mentioned in the foregoing chapter, as being the most common of aneurysm in the aorta, may be found at the point which many lately in front of the bifurcations of the aorta above mentioned, as also at the Sinus of Valsalva, there is a greater amount of dilatation of the aorta, causing a more in circulating blood, and as it is, as formerly stated, in an abnormal state of nutrition.

Having mentioned above what were the most frequent sites of aneurysm of the aorta, it may be asked why aneurysm should take place more especially there than in any other situation. At the Sinus of Valsalva, as well as at the bifurcation of the aorta, we find that the artery becomes dilated in its canal. The blood is as Chance attempted to run a state of constipation, and wherever a cross takes place in the circulating blood, the arterial tunics are most liable at that point to become degenerated, owing to the
blood having been longest in contact with the coats of the artery.
III. CASES.

1. Case.

Aneurism of the arch of the aorta, projecting externally through the perforated sternum. Special aneurismal space on the point of bursting. Broken continuity of the left pneumo-gastric nerve.

Curellet, Derracoeur III

Racine, aged 68, keeper, of a strong and good constitution, but gave up to all kind of dissipation, noticed for the last two years a tumour on the upper part of the sternum for which he could assign no cause.

Before that time he was in perfect health, nor was now troubled with pain, or palpitation of the heart.

He entered the Maison Royal de Sante, under the care of M. Dumeil, who recognised an aneurism of the Arch of the Aorta, and recommended a regimen to which the patient only partially submitted.

During the two years which intervened between the first appearance of the tumour and his death, Racine at various times passed some months in the Royal Hospital. His general health was good: he had no pain and it was difficult to impress upon this intractable patient the necessity of a
patient proffered: indeed he still continued his former habits. On the 22nd September he entered the Hospital for the last time. The tumour did not appear to be sensibly increased in bulk, it was covered by very round skin which is also non-adherent, but his emaciation is extreme, and he complains of pulsation after the slightest movement, fainting fits, and giddiness with sweats. In addition to that there were frequent coughs, accompanied with mucus expectoration, vomiting of every kind of solid food, pulse small and rather past. The patient lies reclining on his right side, dispirited, insensible, awaiting the approaching death which he so ardently desires.

The stethoscope applied over the tumour detected a double heat, synchronous with the heat of the heart. The heart was drawn back behind the sternum. Respiration on the left is natural, but on the right side the voice and breathing became tubular at a great many joints.

During the following days a feeling of faintness of sudden accession took place, and disappeared for a quarter or half length of time, or as the patient expressed it "the dark side of heart" (la gente que se pone a oscuras).

Now time during a fit the pulse was perceptible, slightly oscillating. The heart appeared to have no other movement than a muscular trembling. I have several times observed the squeam of the heart among quiet persons.
29th September. The patient was seized with an ice-cold fit, without shivering or trembling. He complained of cold to bone, that warm blankets in addition to warm applications could not dissipate. This lasted two hours. The same kind of chill appeared on the following day at the same time. On the 4th of October it lasted four hours; on the 5th, ten hours. Every one believed the patient would expire. The persistence, intensity, and periodicity of this symptom demanded all my attention. It was a malignaund fever of a cold type. Ten grains of the sulphate of quinine were administered immediately. The next day the chill only lasted five hours, and the same means were continued.

On the 9th this phenomenon disappeared completely, but the heaving became more frequent and noisy. It appeared to me evident that the headache was compressed. Pulse very small, face purple. Death took place between the night of the 14th and the day of the 15th.

Appearances after death. The tumour viewed anteriorly was of an oval form and corresponded below to the upper external angle, and appeared to spring from the space at the root of the sternum and costal cartilages of the same side. The skin was healthy and unbroken, and consequently there was no sign of an immediate
rupture externally. The anterior wall of the thorax having been raised along with all the contained viscera in the thoracic cavity, we view into the subternal part of the same tumour, from the base of which and on the left side arose three arteries; namely, the subclavian, carotid, and internal carotid arteries and upon the right the trunk of the brachial cephalic. The left subclavian vein which crossed obliquely over the posterior aspect of the tumour was obliterated. A distinct brown layer was seen interposed between the opposite coats of the vein, where there was complete obliteration. A vein of considerable size emptied itself into the right subclavian at the place where it entered the pericardium. This vein, which I was not able to follow to its origin, probably replaced the left subclavian vein.

Independently of the large muscular tumour, there was seen springing from the margin of the left subclavian and carotid arteries another tumour, greatly smaller than the preceding. It was subdivided into two other tumours; one above and one below, separated by a narrow circular band. The left lung was deeply hollowed out to receive the left part of the smaller muscular tumour. It was united in such a way that it was
impossible to separate it without tearing, from and the superficial tissues of the lung had been encroached upon. The trachea being opened posteriorly presented to us its anterior wall partly driven back by the tumour (whence arose the difficulty of separation). The mucous membrane was peeled at the point of the bifurcation of the trachea.

The left pulmonary plexus dome was flattened, indeed thin, and in fact reduced to a slender plate having been pressed back by the lower part of the small aortic caval tumour. It was firm to the extent of some lines, and it appeared to me that its continuity was completely broken, for I could find no trace of nervous tissue. Suspecting the destruction of nervous tissue in this actual case was not complete, still it was easy to understand how this interruption resulted from a slow increase of life in the tumour. The left subclavian vein was obliterated behind the larger tumour.

The aortic caval sac was opened on its posterior aspect. Immediately above the aortic surface was seen a large empty dilatation of a spheroidal shape. The panicles were studded with plates of calcification, a wide or incomplete ring forming two distinct arcs on the side where the aorta originates, but complete where it terminates.
formed the boundary of this dilatation. The fibrous ring was in some places externally prominent and composed of circular fibres combining with one another. From this large dilatation proceeded as so many appendages, 1st. The great auricular tumour; 2nd. a small auricular tumour which projected within the pericardium like a nipple. 3rd. Another auricular still smaller abutted against the trachea, facing it backwards and eroding the interior. These three tumours were occupied with clot. Below the apex of the left subclavian artery, the aorta presented a bladder-like dilatation, from which proceeded again two appendages or auricular pouches, an upper or smaller and a lower or larger, each containing indurated clot as did the others. The 2nd tumour shaped like a nipple, and projecting into the pericardium had extremely thin walls. One might have said that its wall was reduced to the second layer of the pericardium, which at the apex of the sac presented the commencement of incipient absorption. And had it not been for the very dense blood clot which filled it in the manner of a cork: rupture into the pericardium would have taken place at an early period.

The tumours (marked by the smallest arising from the side of the trachea, was likewise full of blood clot,
which are resting immediately on the ring of the
windpipe, stripped of the fistula layer with which they
were invested, and which ring was also slightly eroded,
and where there was inflammation and absorption
of the mucous membrane of the trachea, so that
if the patient had lived some time longer, the occu-
pierial sac would have opened into the trachea.
The large auriculars belong to the same class
as the small one, the only difference being its enormous
volume. It arose from the highest part of the dilatation
between the innominate atery on the right side, and
the left carotid, vertebral and subclavian arteries
on the other. This tumour was divided into two parts:
the subternal portion being the largest; and the pos-
terior portion which communicated with the sternum.
On making a vertical section of the tumour it
was found entirely filled with blood clots, placed in
concentric layers, but not at around a common centre.
There were several layers of blood clots, which were
not contemporaneous. Three nearest the arterial coats
were in several distinct period; but these were numerous
exceptions in this respect. Thus in the centre of the mass
of clots there was one of a very considerable size. It
was easy to guess that this clot communicated with
the circulating blood: in fact a female catheter was
introduced into this point passed very easily by a
Large opening into the cavity of the distalation. Behind this central abode named point was seen another areolar bloody mass, or rather in the form of a bloody Cavern (gêride). For, it presented a cavity lined with white memhranized masses and full of fluid which gave to this mass a mufsid appearance. This communicated like the preceding, with the blood in the circulation recently coagulated. Around each of these points there was a system of concentric layers forming a description of circulation points or pores, in the midst of the cells which lined the wall of the tumour and the blood spaces which were found between the series of layers, one filled with the cells exactly imbedded in the adjacent lamellae, lastly the layers which were next to the distalation appeared to complete this distalation above, and to constitute a particular system. The internal areolar aspect of these, as it divided into layers, at all times in contact with the blood, seemed gradually increased by the successive and unequal accumulation of the cells formed at the expense of the blood. These concentric, undulating, irregular, and circular concretions, I cannot better compare to any thing than to the concentric layers in a piece of wood. Like the latter they were successively formed and allowed us in some degree to distinguish their period of formation, by their colour and difference.
Each layer itself was composed of a succession of extremely thin plates, sprinkled over with white epithelium in a linear series. Under the microscope we see an auricular form, a meridional plane without a trace of villi. Lastly, nothing was more variable than the cohesion and color of these different plates. The layer near the wall of the sac, and which had not undergone the process of decomposition, one of such a density as at first sight to render them liable to be confused with the sac itself. They had the yellowish color of the pericardium of arteries, whence has arisen the opinion of the reproduction of arterial tissue presupposed by some authors. The layer of a more recent date presented the same transparent appearance and the aspect of three convolutions known to the old physicians under the name of protopyle of the heart. Lastly, a certain number of layers presented respectively a brownish discoloration, or a cheerfulness, or a dirty brown color. These were slightly adherent and of a great extent reduced to a part of the same color. They filled up almost the whole of the posterior face and had evidently undergone incipient change. Further, the corresponding part of the sac presented that canary yellow, and yellownish brown color which is the characteristic of carotid caused by asphyxia. The left common carotid
Artery arose from the aneurismal sac itself. It was completely obliterated by a semitransparent thin dense clot, intimately united to the arterial wall. The orifice of the vertebral, left subclavian, and internal carotid arteries were free. On uncasing the parietes of the aneurismal sac, it was noticed that the dilatation was studded over with osseous coni- 
siduous and calcaneus plates of different di-
concinuous, which occupied especially the inner mem-
brane. That thick arterial tunics were manifestly 
present throughout the whole extent of that dilatation.
But that the small tumours were formed across a separa-
tion of the middle and internal memhrane.
Their parietes were in fact reduced to a thin cellu-
lar membrane, intimately united to the concentric 
and thick clots which filled up the tumours. The internal and middle coats evidently ceased at the commencement of the principal tumour. They are replaced by a dense fibrinous sac, almost of the consistence of cartilage, with no linear dis-
section, perforated like a bladder, lacernated in a great number of points, a very evident snare of the process 
of destruction which goes on continually on the parietes 
of aneurismal tumours. Already thin sac has in 
part detached at the neighborhood of the tumours. The blood had insinuated itself between it and the
adjacent cellular structure. There is no doubt that rupture would have followed very speedily, except at this point, if the patient had lived. The sternum was perforated in the following manner. The right half of that bone had been broken away at the level of the cartilage of the first and second ribs. Its posterior aspect had been scooped out into cellular cartilage, a large cell, separated by kind of ridges, cartilages and ridges which the line this with a thin film or false membrane, separating the bone from the circulating blood. The cartilages of the first and second ribs which were irregularly torn away and isolated on all sides, protruded into the sac-like empyema. The right clavicle was scooped out at its external paternity into a profuse deep cavity, which was lined by a fibrinous membrane which appeared to me to be continuous with the costo-clavicular ligament. This was the first time that I have seen the destruction of the cause of mediastitis and therefore I do not think the result of any chemical action of the blood. The whole of the inferior lobe of the right lung was studded with innumerable abscesses, or if you choose with cysts. There was besides numerous whitish tubercles, excepted only. Nothing appeared to me here to prove the analogy
Painting between tubercular matter and pus.
II. CASE

American of Moracic Orto

June, aged 41. Anxious, residing at 16, place du Château, Montpellier. He was admitted into L'Hôpital de la Charité on the 25th of September 1826.

Appearance on admission. He was in a raving state, his breathing very frequent, indeed so frequent that the patient was totally unable to sleep in bed. He was unable to make the slightest movement without suffering great pain. Very often during the night and sometimes during the day, fits of suffocation took place, during which the patient was conscious but terrified and believed that he would be stifled. The fits once passed, the whole appeared to him like a dream, the whole being so great.

The patient whose intelligence was above the general standard, gave a perfect account of his feelings during the fit. He said, he first felt a pain in the back, feeling of constriction, and acute pressure at the level of the last ribs. The pain of constriction appeared to reside in the intercostal spaces, for it occupied the whole length of the space which three fingers.
In short, in the intervals of the fit, the pain is usually permanent, but bearable on the whole length of the intercostal spaces. The pain might be called rheumatic, and in truth. The name (Mira's Common Error) was given to his pains, and to his disease by the physicians whom he had consulted.

The pulse is barely perceptible at each visit. It is a thread of extreme tenuity. The extremities are cold. I ascertained that all the arteries accessible to touch, and namely the carotids, the femoral, beat feebly, and that the diameter of the column of blood which is circulating, is extremely small. On examining the chest we have the following result;

1. On percussion, perfect clearness in front in the upper two thirds of the left side, and in the upper third of the right side. Complete dulness exists at the base on both sides, and complete dullness at the sides, and behind.

2. On applying the hand, a considerable feeling of pulsation is felt over all the right anterior region of the thorax. This pulsation is felt for all the upper part of this region, and seems to increase from above downwards. This pulsation is visible to the eye, and is felt by the hand.
it is a rigorous and strong impulse raising the thorax and pushing it forward from left to right, at first right one would have imagined a rigorous heart and filled up all the right side of the thorax.

On auscultation, the ear, or rather the head, or being applied over the anterior region and right side of the thorax, as forcibly rises within a bruit, by a very strong impulse like that which a very strong heart expects. This impulse feeble above where it is followed by a clapping sound (bruit de claquement) and where one hears the two beats of the heart increased, but without this clapping sound; in proportion as we descend towards the region of the liver, the impulse becomes stronger; one would say that this region is replaced by a pulsatile rise.

The same bulge, the same strong, violent impulse, without any bruit, one observes behind and on the side over the whole of the upper part of the thorax.

At other points, the heart's actions are less but feebly in their ordinary place.

Diagnosis: Anemia of the thoracic sort. We cannot account for the observable phenomena in any other way than this, but as I could not judge
And how a solitary aneurismal tumor could occupy such a large extent. I suspected the existence of two aneurismal tumors; the one on the right side, the other on the left; the left pulsating tumor appeared to arise from the descending aorta, the right from the ascending aorta. But again I could not understand how an aneurism of the ascending part of the arch of the aorta could extend downward near to the right side, enroaching on more of the hepatic region.

This formed a different diagnosis of the case. According to them it was an enormously large tumor, which gave such a remarkable influence to the whole thorax. It was necessary, they admitted, at the same time, to account for the remarkable pleural effusion by coincident pleuritic effusion. A phenomenon supervened some few days after the patient's admission, which seemed to give some force to this opinion. To write biventricular, with pleuritic effusion, behind and to the left, there was then pleuritic effusion. What this effusion was or recent? Its presence was not further in opposition with the idea of an aneurism, for it might be easily conceived that irritation arose to the pleura by an aneurismal sac, or the embarranment.
of the circulation, which might result from compression, of which that side appeared on the chest, might account for the pleuritic effusion.

I could not therefore entertain the idea of disease of the heart, and held that the heart was not the organ affected in all this case. I believe that the heart was left quiescent, and more especially, left quiescent, considering the feebleness of its pulsations, I adhered then to my original diagnosis, viz. that the pulsating tumors were essentially caused by a dilatation of the porta.

In other respects—patient's appetite was good; mental powers excellent; spirits bore hope of a recovery. The patient meekly begged me to cure him of the paroxysms. For without those, he said, he would be in full health as would be in full

Levure remained in identically the same state from the 25th September, (the day of his admission) up to the 31st October.

Every Sunday I examined this latter and I declared it to be studied by those who followed my visit, and me at all times recognised till help, with violent the pulse, over every part of the chest but more especially in front, behind, and to the right side, that the pulse was ca-
Desirable. At each stitch, all had manual and ocular demonstration of the flaps being bilaterally elevated, with a strong forward movement, and towards the right side, as could not sufficiently wonder at the contrast which existed between the shallowness of the pulse, the weakness of the contractions of the heart on the front, and the rise of the impulse on the other. The pain felt in the left side, which the patient complained of, subsided, was followed by pain in the lower part of the right side, immediately below the mammary, from which time the feeling of ease during the interval of the party was not accompanied, and had been succeeded by an habitual feeling of oppression, which is hourly increasing. The patient having complained of a constant dull pain in the intercostal spaces, a numbness, and a painful insensitivity of the skin covering the last ribs, seemed to be excruciating applied over the affected parts. Several temporary blisters, which succeeded in removing the pain, without remedy. The numbness and troubles began to be obstructed on the 16th of October, when I ceased on applying the Stethoscope and Sharp Sound like
like the cry of an owl crying sound, their
was evidently from the fibrillation of bronchial
membrane. On the 31st October the patient
came into a cold sweat and pulplus, great
oppression at the sternum, faccilities quite sla
was in great of his situation. The com-
plained of several aneurysms, coupled with
peat feeling of suffocation. Further the
febrile symptoms are paralleled. He was in them
an delirium, nor can he cure them. He
was still alive on the 1st December. Pulse for
several felt it in the anus viscaus. The
Curtsies the breath, and for a very feeble mi-
pulse, and in understanding in this convulsion
state the pulse is still very strong in the
lower part keene, and in the right of the thorace.
The patient died between the night of the 1st
and morning of the 2nd December. Mr. Russell
Richard and George to request his nearest to
thanks me for the care I have bestowed on him
inspection of the body.

A tremendous tumour
filled more than the half, perhaps two thirds of the
mucous cavity. Recent pneumoniae, character-
ized by a turbid fluid, mixed with albuminoid
flakes was observed, the heart presents
increased dimensions, in breadth, in height, but not in thickness; for it was flattened from before backward, being compressed by the tumour which presented at its level a depression or excavation remarkable for containing that organ. The two lungs, accordingly, were reduced to a third of their ordinary bulk. Half a glass of milky fluid occupied the pleural cavity. Independently of this enormous reduction in their bulk, the lung were found firm in the condition of tissue which confirmed the respiration within the narrowed limits. Thus the inferior lobe of the right lung infiltrated and softened, presenting here and there some reddened points, was moulded on the tumour, and adhered to it intimately. The lung throughout the rest of their extent were softened, infiltrated, and the bronchi filled with tubular concretions. This enormous tumour itself had been inferred by diagnosis, pilottary with two unequal lobes, of which the one occupied the left cavity of the thorax, the other, the lung, and which descended below the pillars of the diaphragm, occupied the right cavity. The two pillars had been raised by the tumour and were in some degree scattered on its
and in part transformed into a fibrous tissue.

The back of the right lung was strongly adherent to the tumour, which was at this point perforated by it, so that here the lung formed an integral portion of the parietes of the tumour which would not have been long in opening into the pulmonary tissue, or into a bronchial tube, on the anterior surface of this tumour ran the first bronchus, while across it ran the right and left into the great veins and arteries, obliterated by the ultimate and immediate adhesions of their walls, the large and small pleuropneumonia of the right side which had been pushed back by the tumour, were flattened likeutting for this, completely atrophied, and reduced to their pneumatisation. The Purves and equally pushed up before the tumour was laid. The Asecular pleura was present to the anterior and anterior to the vertebral column. It was visible that the Asecular pleura had been formed at the expense of a part of the circumference of the lung, namely the posterior and left half, so that the anterior and right half of its circumference was healthy, excepting the considerable dilatation of which
it had been subjected, in consequence of the Contraction and subsidence of its walls that this part simply dilated, was entirely permeable to the blood and suffered for the Circulation. It has been also on examining the Aorta on its external surface that the healthy part of this vessel was continuous with an altered arterial tissue. Now dissection has completely proved these data furnished by the potential appearance. The three arterial tissues located in their state of integrity being at the level of the heart simply dilated, beyond which one looked in vain for vestiges of arterial tissue on the walls of the see which is essentially made up of accidental fibrous tissue. The arterial column was attended on all the surface which corresponds to the periphery of the tumor. This attention superficial or the right side was my deep on the left, there is seen the destruction of the whole substance of the front surface, almost to the dura mater which was exposed so that it might be asked by symptoms of Compression of the medulla one not manifested
Manifested on the day before death—the posterior semicirculars of the two participated in the same process, in the same destruction. The tumour had laid open on each side of the vertebral column by a deep vertical incision. There was seen the section of the two sacs and of the cancellated canals, which lined it; the very large communication which existed between the right and left sac, both of which constituted one single, and at the same time lobular cavity, lined by thin cancellated canals and full of recent clots. These blood clots, which probably were only formed after death, prove that there had been going on during life an active circulation in the very midst of the tumour, and that at each muscular systole, the blood must have experienced the impulses which gave to the tumour that feeble and quick movement of expansion which allowed us to diagnose Anæmism. Already the blood had penetrated between two and three layers of disintegrated cancellae which immediately lined the sac. And the time seemed not to have been far distant when the blood would have reached the most external
Layer of the lamellae, and punctuated between them and the sac, a circumstance which would have singularly accelerated the rupture of that sac, since it would have rendered useless the resistance against the impulse of the blood, formed by the layers of lamellae between the circulating blood and the walls. — We observed the anciliarial sac was already perforated and filled up by the base of the lung. The internal surface of the right lung was near to the denuded lamellae at its upper part; below there was no adhesion. The external surface of the blood clots presented a firmish flocculent layer, which showed that the process of coagulation or alteration had begun to manifest itself in the corresponding walls of the anciliarial sac.

The internal surface of the aorta was covered by the denuded endothelium, so that there was really in the course of occlusion not only part of the circumference of the palpable vessel but also one alteration in tissue which cannot but call attention to the indicated condition, which the blood confined in the right sac presented.
and the differences observed in their discolored blood cells at one part lamellated and distinct, at another lamellated but separable at any part disposed in lamellated shapes of which the rounded enlargements projected to the centre of the eye.

III. CASE. Under the treatment of Dr. Bennett in the Edinburgh Hospital during the early part of the summer of 1855.

Alexander Calder, aged 33, schoolmaster, was in good health up to February last, then he felt a pain under the uniform cartilage cap, which seemed like the movement of a piece, and continued for a week, when it left him. About a fortnight after this, when walking towards Blackfaran, he felt as if something had given way immediately below the surface of the uniform cartilage, which caused him to clench his jaws and produced a feeling of sudden weakness. The night was hot and on reaching the house to which he was going, he sat some time in his hat clothes, and soon after went home to bed for some time remove them. The weakness continued, and at the end of the
days he sent for a Physician who applied a blister to the lower part of the abdomen. This, he states, did him some good but he still remained weak and began to cough and spit. During the next two months he continued to feel weak occasionally shed blood and was troubled with palpitations of the heart. About this time he passed blood with his stools—of this he recovered at the end of three days.

The weakness and palpitations have continued. There has been no spotting of blood for the last two months and the weakness is not as bad as before. About the beginning of April he first noticed the abdomen began to swell and his face and became so swollen as to produce occasional vomiting. By the end of April the limbs and face became puffy, and he observed his urine to be dark in quantity than usual and muddy. He has been troubled with occasional vomiting after meat or since the Congo became severe.

Fettle appetite. Some pain in the mouth on pressing and after vomiting. Tongue clean. Stools regular, except consts.
unless the cough is severe for an average
that in this case he is a day, and fully the
half of the previous meal usually.

The abdominal viscera seem normal in
size, but the abdomen is full of fluid.

Intestinal system. Their bowels are
dry, do not require considerable sedation
effort, and legs and thighs which put a fur
shine on their sides. The heart is

Circulatory system as investigated by
F. Blum. Immediately under the sternal
proximity of the left clavicle, a loud blowing
tonus is heard accompanying the period of
right sound. The same is audible but
voices in time on the Centre of the manubrium
of the sternum. The same prolonged blowing
audible under the left, is also audible under
the right clavicle. On the third dist. to the left
of the sternum two sounds are audible. The
first loud and gasping, the second short
abrupt and gasping. At the aorta a loud
distinct blowing is heard with the first sound.
The second sound is distinct and apparently
healthy. To the right of the manubrium of
the sternum, the long, distant, soft sound
is audible. Action of the heart regular.
unless the cough be severe, lest in an average
that in the case endure a day, and fully the
half of the former meal be ejected
The abdominal viscera seem natural in
life, but the abdomen is full of fluid
Integumentary system. Their arms and
dry. They do not present considerable oedema
of feet, and legs and thighs which put on fra
were also the limbs braw.
Circulatory system as investigated by
K. Bloom. Immediately under the sternal
proximity of the left clavicle, a loud blowing
torатур is heard, accompanying the period of
the sound. The same is audible but
softer on the side of the manubrium
of the sternum. The same prolonged blowing
audible under the left, it also audible under
the right clavicle. On the third rib to the left
of the sternum two sounds are audible. The
first loud and racing, the second short
abrupt and racing. At the above a loud
blowing is heard with the first sound.
The second sound is distinct and apparently
healthy. To the right of the manubrium of
the sternum, the long distant left sound
is audible. Action of the heart regular

...
Influenza diffuse. Pulse 120, weak and rapid. The patient found dead in the face and conjunctiva. Complaint of hemorrhage in the gums, which led to bleeding into the trachea and bronchi.


23rd June. Died at half-past 2.

Post mortem appearances. The pericardium was distended. It contained 3 oz of dark humour. On removing the heart the bulging was observed between the aorta and pulmonic artery. Accidentally, it appeared to rise from the latter where it was of a rounded cavity flattened form, and somewhat smaller than a chestnut. When removed the bulging persisted down the aorta, it entered this bulging which proved to be an aeurysm. A bulging rising from the root of the aorta by the semilunar valves which proved innocent.

Patient 12 days after. On opening the aorta, the tear in the valve was found to Commence immediately above the semilunar valve. Its opening into the baffle was of a wondrous form, rather smaller than a flax. The sac itself was of an irregular rounded form. Its greatest diameter from
The hole downwards being two inches, the capacity of that of a large walnut. The sac was empty, and no appearance of a clot formed at the apex of the tumour, was found an opening which passed into the pulmonary artery. The sac as already mentioned was closely applied to the vessel. When the pulmonary artery was cut open the communication became more distinct. This opening was about five lines in length, the lips about one and a half apart, so that it was oval in form, both the margins closely wound off. It was situated two-thirds of the length of the length of the pulmonary artery and was within one third an inch higher up than the pulmonary semilunar valves. All the cardiac valves were normal. The left ventricle was more capacious than natural and its walls of normal thickness. The right ventricle was also dilated, but its walls were slightly hypertrophied. The heart weighed 150 ounces.

The liver when out into, presented a confluent appearance due to the slight colour of its substance. Contraction with congestion was noticed. Many of these rice hovons were healthy, though they could be recognised with unusual distinction.
Edinburgh Medical and Surgical Journal, No. 118.
IV. CASE.

Extract from Dr. Craigie's Clinical Reports.

Samuel Hank, a married woman, aged 30.

Dr. Craigie now records the particulars of this case. On the 24th of January, he was entering the Hospital, I found a woman with the face reddish flushed and livid, sitting on the stair-case, and breathing with extreme difficulty; on asking her why she did not proceed to the waiting room, she answered that she was completely exhausted by walking from the Front Church to the Dispensary and that she was utterly unable to ascend a single step of the stairs by reason of the difficulty of her breathing. Though she was much anaesthetized, had frequent paroxysms of cough and a pulse of 140. Much mucous rattle in the bronchial tubes, and copious expectoration of thickened mucous and the duration and cause of these symptoms directed an impression of the lungs and bronchial tubes; it was evident that the degree of anaesthesia, and the livid and tinct of the Countenance indicated a much more serious disorder of the circulation than is usual in cases of chronic bronchial inflammation or tubercular asthma. I gave directions in the meantime that she should be carried.
up stairs and placed in bed for attentive examinatin. It was then found that though dyspnoea was constant it became occasionally apparent in an insufferable degree with great anxiety, and that she was barely so easy as to allow her to lie down in the horizontal position.

Excursion of any kind was followed by violent palpitations, for when present the sounds of the heart were natural. Right eyes were pretty regular and copious, and she expected a good deal of blood. On auscultation, moister with finger fluid, the former pointing to water.

The chest sounded dull on percussion with both hands. The sound was rather clear, but the surface was so tender and the anxiety to great that a complete and satisfactory examination of the chest was impracticable. These complaints she stated had only come on four months previous in consequence of exposure to cold. She had lost blood, and was shocked at their first approach, with some relief, but on their recurrence for about ten, bloodletting afforded no alleviation.

As this case had the general appearance of a complication of chronic pulmonary with disease of the heart, the nature of which however, could not be precisely ascertained, it was thought...
respondent first to relieve the urgent symptoms of diaphragm aspiration, in order afterwards to discover in her general health the exact nature of the lesion of the organs of respiration. She was therefore treated with an antiseptic mixture, consisting of tincture of capsaicin, iodine, and spirit of ammonia, as seemed indicated by the symptoms under these remedies. The constancy of the cough and oppression had been almost stationary. Afterward on the 28th, when the fits of coughing became more frequent, it was considered expedient to order her lozenges consisting of two parts of extract of Mentha, half a part of menthol, and six parts of sugar, which had the effect of quieting the dyspnoea and cough. Considerably on the 30th, while she was still rather improving and had recovered some appetite, an egg was added to the allowance of food. But on the 4th, though the cough had been troublesome, that it was found necessary to give an injection and apply a blister, which were followed by evident alleviation of the suffering. On the morning of the 6th, after taking a visit from her husband, and without any remarkable change in the symptoms, she suddenly sunk down in bed in an apparent swoon. That was found to be quite dead.
The peculiar dyspnea and asthenia during life, as well as the sudden mode in which death took place, indicated here a disease of the heart, its appendages, and the result was confirmed by dissection. The pleura of the right lung adhered firmly to the costal pleura at the side, and to the diaphragm below. The latter was united by a false membrane indicating the previous existence of pleurisy. The inferior lobe of the right lung was firmer than usual and kept its elastic character natural. Its substance was of a reddish-brown color, much loaded with bloody serum, and its adherent much distended with dark-colored blood. The bronchial tubes of this lobe were also filled with bloody sputum, and the whole filmamentous tissue of the lung was of a deep reddish-brown color. The middle lobe was redder and consolidated of a bluish-gray color, more papillary and elastic but few of tubules. The bronchial tubes of this portion bore cruelty and contained much thick, opaque, purulent mucus, which flowed freely from them on division and on pressure. The inferior lobe of the right lung was very much indurated, and of the same color as the middle, equally
melastic, and also void of tubercles. It presented, however, large carotids, irregular in size and shape, though generally cylindrical, mutually communicating and containing thick opaque pigment matter, slightly tinged with blood. These carotids communicated freely with the bronchial tubes, which was very much enlarged. Much matter issued from them in the attempt to detach the lungs from the ribs and diaphragm.

The left lung was perfectly healthy. The left auricle of the heart was dilated by a large fibrous clot attached to the muscular pediculate; and the ventricle was filled with a similar one attached to the walls and tenon sinus. The left auricle and ventricle were natural.

About half an inch beyond the anterior semilunar valves, the aorta was dilated into a globular sac, as large as a good sized pippin (at least two inches and a half in diameter), situated chiefly at the posterior part of the tube, and surrounded by the arch above, bounded on the right and left by the superior luna, above by the bifurcation of the aorta, on the left side and below by the pulmonary arteries, by which it was crossed. The aperture into this sac was more
than an inch in diameter. Slightly Circular, and
the inner surface was studded by patches
of hematomatic matter. The tumour
also encroached on the visceral margin of the
right lung. In this case it is evident that
the presence of the aortic aneurismal tumour
operated in two ways producing the extreme
difficulty of treating, the oedema, and the
insufficiency of the maintenance. By its situa-
tion it necessarily compressed both bronchial tubes
but especially the left one, and consequently
impaired the exit and entrance of atmospheric
air. But it also compressed so much the
pulmonary veins as to impede the transit of blood
from the lung into the left auricle of the heart.
IV. SYMPTOMS SEMEIOGRAPHY.

The symptoms of aneurism of the arch of the aorta vary according to the stage of the disease. In the early stage, while the tumour is still small, not much change is produced upon the functions of respiration and circulation, and the feelings of the patient. It is remarkable, indeed, that cases of aneurism of the arch of the aorta are of no un frequent occurrence in which death has taken place suddenly, without the existence of the disease having ever been suspected. In cases of this class, it is not easy to ascertain what symptoms had been produced, or whether the patient had any decided sensations. In some instances it has existed without any previous complaint. In others the patient has complained only of an obscure feeling of uneasiness, weight and oppression within the chest, as if something were there which prevented him from breathing freely. In other instances, however, pain and uneasiness are felt, the pain being represented by some patients, as extending from the region of the heart, upwards towards the top of the sternum; or along the side of the neck; or downwards to a certain point in the left arm. At the same time the complexion is paler than usual, though liable to become flushed,
and an air of languor and sickness is spread over the
visage. After some time, the features begin to be contracted,
and it is evident that the patient is losing flesh. These
may be regarded as all symptoms rather of the
early stage of the disease, before the tumour has attained
any great size. As the disease, however, advances, the
symptoms assume a more decided character. The sense
of weight and oppression within the chest becomes con-
stant, urgent, and generally aggravated by the recum-
 bent posture. The patient tries various postures of his
body, in order to relieve these feelings, but he rarely
succeeds in obtaining, even temporary suspension of
his sufferings. Any muscular effort, any corporal
exertion, the attempt, even, to walk about, or move
quickly, aggravate very much his sensations, and
he has almost constant difficulty of breathing,
which is occasionally intensified by severe paroxysms of
asthma, he gives the name of asthma. At this time,
however, in different patients, the symptoms present
considerable diversity. Some, it has been observed, present
little uneasiness, except the distressing breathlessness.
But others suffer peculiar tearing pains inside the
chest, and extending up along the neck, to which
they give the name of headache pains. It is probable
that these painful feelings are owing, in consequence
of the chemical and mechanical disturbances of parts of the
vascular walls.
If the Aneurismal tumour by its pressure upon, or stinging of the eighth pair of nerves, and the adjacent branches, there seems to be no doubt that the breathless fits and asthmatic fits are owing to the pressure of the Aneurismal tumour upon the bronchial tubes, and the windpipe itself.

At this stage of the complaint, a peculiar symptom takes place, viz., that often during the cases of Aneurism of the Arch of the Aorta, this consists in hoarseness, aphonia, or complete stop of voice, sometimes in a sort of croaking or character, too that when once heard it can seldom be mistaken. There is at the same time a good deal of cough, which is harsh, piercing, and what has been described as the "croupous" cough.

I have been informed by a Physician who has been several cases of Aneurism of the Aorta, that this affection of the voice and species of cough are accompaniments of Aneurism of the Aorta so frequent, that he has been enabled in the presence of the disease by this symptom alone. The breathing at the same time resembles the croupous.
Inspirations of Children, being done like the crowing of a Cock, than the sound of healthy Inspiration. These symptoms in the voice and breathing are occasioned chiefly by direct mechanical pressure of the tumour on the trachea and oesophagus, and when present it is rarely possible to doubt of their symptom, unless to be mentioned, precisely that a considerable tumour is compressing the trachea and bronchial tubes. It is supposed also that the phlegmasia, amy, and sometimes allusion of the imperfect laryngeal nerves may contribute to produce this state of the voice and breathing.

But at all events it is extremely important for the physician to be aware of the presence and significance of this symptom. For if he do not, he is liable to suppose the disease is laryngitis or some affection of the bronchial and not to think of cancer as the cause of the symptoms.
V. Physical signs and physical diagnosis.

From the incidence and concurrence of these symptoms already mentioned, especially the thinness of voice and respiration, it will in general cases be possible for the Physician to infer the existence of Aneurism of the aorta to be present.

More accurate information of the condition and careful examination of the body sheet will in many cases be necessary. Two possible conditions may at this stage of the disease take place: either a slight tumor may be perceptible at the tip of the sternum, especially at the right side, or no external appearance may be observed. In the first case, there is external indication, it is not always very distinct, and sometimes it escapes the eye of an observer, hasty, or inacustomed to seeing such; but in a certain class of cases there is slight elevation and protrusion of the right collar bone, and in the course of no long time a slight but general elevation of the parts below the collar bone is perceptible. If pulsation be not manifest to the eye, it is easily ascertained by placing the stethoscope on the parts. In general it is found that some thymuism sounds are audible, as if blood were passing through...
Laennec.

* Henry Mèrode, 1845.*

*Note: Mention of very loud, clear 2 sounds in stern, & mobility.*
In some instances a strong hollow sound preceded by a snapping sound is heard. The latter is called by the French "sifflet cataracte." The hollow sound according to M. Bache is most frequently heard in small aneurisms filled with Coagula.

Again the sound may be of a rasp-like character. M. Bache insists that in the cases of thoracic aneurism we have a double murmur, while Laënnec and Bertin consider that the single sound is characteristic of all cases of thoracic aneurism. The case of the double sound seems to be owing to pressure on the pericardium. This double sound is mentioned in case I as repeated by Dumas. And in most cases it is synchronous with the heart beats. Occasionally the beats of a double pulsating murmur (not due to chlo) being heard in cases of thoracic aneurism the second murmur being heard faster after the diastole.

In the cases in which an external tumour is perceptible, it will be deputed to examine by auscultation and percussion more minutely.
It is then found that immediately beneath the sternum there is heard within the chest a sound of fluid passing through a canal. This canal, or some of those drums which are heard in auricular tumours at the surface of the body, may account for the stimulation of the organ of which the sounds may often originate and mask those proceeding from the auricular tumour. Upon the right side in particular, the respiration enables the observer to hear the hard breathing sound produced by the air passing through the compressed bronchial tubes. This sound is generally a harsh, hoarse, snorting, phonation, quite audible, and then once heard, may persist. In some cases heard first in the auricular air posterior aspect of the thorax; and the distinctness with which it is heard, depends upon much on the position and size of the tumour. On the left side of the chest, the sounding is rarely felt, though it in some cases also audible. As regards the beats of the heart in this disease, it has
Seen in many instances difficult to app.

Once them, being often masked by the
louder sound of the Anemia—If
the heart be healthy be then hear the
normal sound—If however be here
ventricular hypertrophy be may have a
shifting Murmur with the Diastole and
if that is giving to a aolearens defect
be shall also have the rasping sound.

The impulse of the heart in many
such instances is unusually strong.
VI. Course and Termination.

The patient's strength becomes still more exalted, and the loss of flesh more apparent as the disease advances. While cough is a distinguishing symptom, and occasionally converted into orthopneic cough, to presurise on the trachea, bronchial tubes, and lungs, or as the pneumo-pustic zone. These symptoms, however, may all appear for a long time, and an aneurism of a small size may exist for a long period without the patient feeling great uneasiness. Its existence may often be unsuspected until the appearance of an external tumour or the accession of more infirm symptoms begin to arouse suspicion.

The symptoms now mentioned, however, will not be slow, but form one, or longer period of the disease, and appear suddenly or slowly, strongly or feebly according as the tumour is increased in size and helping parts essential to expiration.
In many examples of the disease their life is prolonged, the difficult breathing, as already stated, is aggravated by thirst, the complexion of the patient becomes livid or crimson, the whole face is injected and the cheeks and lips are generally purple. The patient is rarely able in this state to sleep in the horizontal position, but either requires to be supported in bed, or if he sleeps at all, he is awakened from sleep suddenly by a frightful and urgent sense of suffocation. At this stage of the disease the pulse at the wrist and humeral artery are generally small, feeble and thready, while the pulsations at the neck and over the thorax are performed with a distinct impulse.

Another marked condition taking place is the lump in certain forms of the disease at this stage has been noticed and described by Dr. Caijus and other observers. This consists in a peculiar species of bronchitis which arises from the tumour compressing the upper bronchial tubes of the right lung, and causing inflammation in them, with a partial occlusion of mucous which cannot be expelled.
Of this a good example has been given in the iv case already detailed, that of the Vomna, Saint Walter, a general account of the following terms is given by W. C. Baker - General and Pathological Anatomy. Up 605. etc.

...there is yet to be noticed a dilatation of the bronchial tubes, which according to my own observation, takes place either solely or principally in connection with aneurismal enlargement, and dilatation of the aorta or innominate. Of this Dr. Baker has seen several examples, and from them, especially one published, he gives the following

"characteristics of that lesion. - The lesion is seated in the right lung, the lobes of which are generally solidified, and inelastic, of a reddish brown color, and loaded with this "the middle and lower one generally solidified and inelastic, of a reddish-brown color and "loaded with blood. - The middle lobe and the "lower one are generally done completely and use "through solidification than the upper; and the affections appears often to commence in the "lower lobe, and then to proceed to the middle "and upper ones. The great change however,
is in the bronchial tubes, which in all the three lobes are greatly enlarged, losing their conical figure and being converted within large cylindrical canals, or tubes, with wide dilated spaces in their courses. Bronchial tubes which in their natural state are not larger than ovo-quills, become especially in the lower and middle lobe not larger than the diameter of half an inch. Besides this, at various points in their course they undergo still greater dilatation so as to form cavities communicating apparently with the bronchial tubes, and thence with each other, but which when carefully examined are seen to be unusually enlarged portions of the bronchial tubes themselves. The bronchial tubes in this state are filled with thick, opaque, semisolid or puriform matter, in the amount of which the membrane is to be seen reddened, pitted and thickened. In some instances the dilatation, though sufficiently distinct, does not proceed to the extreme degree already noticed. The bronchial tubes of the middle and lower lobes are merely lined with cylindrical, like force-plates, and filled with a coat of viscid, albuminous matter.
The lung is also solidified, and losing its el.
activity does not expelate: and then dis-
vided uniform matter issues from
the out bronchial tubes. — This from of dilat.
ation I have seen only in Cases of Aneuris-
inal tumors of the Aorta, and innumerate
It appears to be caused principally by the
Compression exerted on the superior bronchial
tubes by the Anaeurismal swelling. — In the
Cases in which I have observed the lesion
the Anaeurismal tumour immediately comprised
moved the bronchial tubes of the upper lobe
near the intercartilaginaris, so as to flatten
them, and contract their area, and prevent
the free discharge of the matter secreted by
their mucous membranes. — The matter excreted
seemed to be one of the Causes of
the great dilatation produced in the bronchial
tubes of the middle and lower lobes.
At the same time it must be observed
that this same compression Causes a
inflammation of the bronchial tubes in
which it is secreted, and consequent inflam-
ntion of the pulmonic tissue with the usual
kid products. — In one Case the tumor
was so large as a good sized pumpkin, two
...inches and a half in diameter, and comes to press the right bronchus, and its divisions and the medial or internal margin of the lung. In another case the tumour was about the same size, though more ovoidal, and it equally compressed the right bronchus and its branches. That this dilatation of the bronchial tubes proceeds from the cause now specified, I must be induced to think, from the fact, that in the case in which it is observed, it is principally in the portion of the pipe, dilatation, and compression, the Poupart, of the aneurismal tumour, and that the lesion is confined to the bronchial tubes of the right lung, not affecting those of the left lung at all.

I am in doubt how entirely that from the tumour to be situated in that part and side of the aorta, in which it could compress the left lung, the same state of the bronchial tubes of that organ would be produced.

In general, this state of the bronchial tubes and lung can be known during life—the voice is hoarse and like that of a person in cough. The cough is peculiarly...
"Smoke and fumes, as if issuing through a Dresden tube. The difficulty of healing in a very great, and often amounts to paralyzing, and means battling a head in the middle and lower part of the right lung only, while at the upper region respiration is performed with a harsh croak of sound."

When the ooze of the lump and hemorrhoidal tubes, first mentioned, has taken place, the patient is seldom far from the termination of life. Death in most cases occurs within this late place suddenly or after a long and painful agony, lasting for hours.

In other instances however, life is terminated more suddenly and unexpectedly after some violent exertion, or exciting feeling or conversation, the patient falls down suddenly apparently in a swoon, or fainting fit. But upon examining the ground, near the place at the most it is no longer felt, and the action of the heart has at the same time become ceased.

Such are two of the modes in which pneumonia of the lungs may terminate. Thus
There are also other modes. His first, the aneurismal tumour may first way by an opening small or large into the windpipe, a part of blood comes up the throat, and the patient falls down lifeless. In this case usually a quantity of blood has found its way into the windpipe and bronchial tubes and the lung into which this effusion has taken place. Generally the light, is extensively sprinkled in the infected blood. In this case death is usually the result of asphyxiation, partly of suffocation.

Secondly, cases of intracranial aneurism have occurred in which the tumour taking a backwards and lateral direction, down down has burst into the cavity of the skull, and by compressing the brain, caused fatal subfasciitis. An aneurismal tumour of the brain may also burst into the pericranium.

In another class of cases, where the aneurismal tumour is still lower, and proceeds to the left side, it has been observed to have burst into the aorta, near the heart and...

Lastly, in thin instances, the aneurismal tumour, proceeding to the surface...
has destroyed the sternum and ribs, and partly by ablation, and partly by dragging his foot through the integuments, and immediate death has been the result.

From the accounts already given, it may be inferred that aneurism of the aorta only, of low steps in spontaneous cure. The cases of this kind are so rare, that such a fortunate result can hardly be expected.

Of this happy termination it is learned that the man, Howlin, an engineer by trade, Geaves and Stokes in the St. Bartholomew's Hospital Reports, is an example. I am also informed that in the Pathological Collection of the University, there is preserved the half of a spherical tumour, which was obliterative from the body of a man who died in the Royal Infirmary here under the care of one of the Physicians. This was supposed to have been an aneurismal tumour which had undergone spontaneous cure. It was rounded and consisted of dehydrized fluid of the blood, arranged in concentric lamellae.

But of the correctness of the inference that the tumour in question had been an aneurism, the gentleman who gave me this information...
entertain some doubt
VII  Differential Diagnosis.

Premun of the Arch of the Aorta is liable
to be mistaken for hypertrophy of the heart, aneurysm of the heart, pericarditis, aneurysm, rheumatic inflammation, pericarditis adhaerens, cephaloid tumors of the precardium, and abscess of the sternum. It is not always possible to establish a satisfactory diagnosis between it and these normal diseases. In general, however, the following rules may be of use.

In hypertrophy of the heart, the shape and size of the organ, and the fact that the apex is beating below the usual point of percussion, the most frequent symptoms of dysfunction will be sufficient to prevent the observer from forming an erroneous opinion. From laryngitis and laryngismus, and ulus, aneurism of the carotid artery is difficult to distinguish by the course of the disease and the subjects in whom it occurs. Laryngitis is an acute disease, and usually runs its course in from 3 to 5 days. Pain also arises from the thyroid cartilage.

From chronic laryngitis and the aphonia hence arising, it is more difficult to be
distinguished. Several instances have been in which the hoarseness, and aphonia and
bracing cough of Aneurism of the Aorta
have been ascribed to the presence of chronic
sepsis. The most effective way to
prove against mistakes is to examine care
fully and repeatedly by auscultation; and
if the double beat and whirring sound are
heard below the sternum, it will scarcely
be possible to doubt the existence of an
aneurismal tumor.
Saphyisms, stertor, or crowing inspiration
seems only in infants, often at the heart or
soon after waking.

It is perhaps not always easy

to distinguish Aneurism of the Aorta, from
Tracheal inflammation when chronic, for the
reason that Aortic Aneurism really produces
Tracheal inflammation. — But if it
is found that after the employment of those
means, calculated to abate the symptoms of
Tracheal inflammation, these symptoms
persist, there will be reason to conclude that
the Tracheal Inflammation is dependent upon
symptomatic of Aneurism of the Aorta.
The term Aneurism is so generally
applied to various clinical affections of the heart and lungs. The nature of which is not well known, and not easily ascertained. That it ought to be an established rule in all cases of symptoms of disease, to doubt the existence of such disorders, and to examine whether these symptoms, are not dependent upon an aneurism of the Arteria, Arteria pectoris, or some other diseased place of the heart.

In the case of anaphylactic tumors in the mediastinum, the diagnosis is attended with great difficulty. The only rule that can be given is to examine carefully the heart, listening for murmurs and checking pulsation for palpitation. But it cannot be determined that aneurism exists. On the other hand, when there are tingling of the skin, difficult breathing, strong pulsation, weak radial pulse. These symptoms together with the history of the patient, contribute to render the existence of an aneurismal tumor at least highly probable.

Any subsequent mistake in to describe the pain dependent upon arterial aneurism to rheumatism.
And in the great majority of cases of subclavian aneurism, the painful sensations felt by the patient, axillary aneurism, subclavian aneurism, and subclival aneurism, the painful sensations felt by the patient, have been in the first instance attributed to rheumatism. And with the view of relieving these pains, the usual amount of acetylene and subsequent camphors have been applied freely, and in some cases with great frequency. The disease ports aneurism of the aorta has been just as liable to the same species of confusion, pains of a tearing or pressing character being felt at the base of the sternum, in and to the shoulder down the arm, and sometimes within the chest itself. If these pains are aggravated during the night, and totally make company with difficult breathing, it may be suspected that the pulse is of a labile indurate character. But if they are as intense during the day, as during the night, if they are constant, above all if they are attended with difficult breathing, himself apoplectic, or with very deep of being within
The chest, it will be requisite to examine the chest, and the state of the respiration and circulation, with the greatest care, and to refrain from the use of all irritating and stimulating emulsions. If the pains are felt going up along the neck and by the side of the face, they indicate an affection of the interior of the arteries, probably arteritis. And in that case the best course is probably local bleeding by the application of leeches.
Pathology.

The subject of the pathology of Antec Alarism, some attention has already by
anticipated been given, both in the case addressed and also in the treating of the
progress, course, and termination of the disease.

But it is requisite to make a

few remarks on the subject separately.

Anatomic observation has shown that
Alarism of the Arch of the Antec Arises
in a large proportion of cases from
rupture or laceration of the two inner
coats, the blood escaping through this
rupture, is forced into the cellular
coat of the artery, which is thus dis-
tended, and forms the Ray of the Ana.
larism. At no very time that by one
of the Old Anatomists, it was main-
tained that Alarism consists in mere
uniform dilatation of the Arterial tubes.
But, it may be doubted whether this
influence be supported by the evidence
of Anatomical examination. From
the researches of many observers, the
Flural result seems to be this, that if the disease in any case commences
in dilatation, this is best a space in
cipient part of the change, and then
we come to laminated muralisms and
the dead body, the invariably that in
great laceration and destruction of
the two inner coats, and that the
blood has escaped from the interior
of the artery, in the first place, into
the space between the middle and cel-

dular coat, where in general it is de-

posed in the form of phlebous clots.
Of the final disposition of these clots
in some cases from above from Crumell's
her furnish good illustrative examples.
There is also great displacement of parts.
And in some instances of large muralial
tumors, the internal and middle coats
on the side of the lacer are observed
hanging in the form of separate shreds
and patches. The interior of the ar-

cial sac usually presents clots of
blood adhering to the inner surface
of the cellular coat on face of the artery.
The channel for the blood is generally
Much contracted, and where the remains of the inner and middle coats are seen they are merely occupied with ulcerous or pustulatous deposits — Through which this deficiency and destruction of the internal coats may be observed, varies in different cases, according to the age of the aeurismal tumor, and the duration of the disease — In the acetabulum seldom less than one inch and a half, and it may amount to three inches or a little more — Beyond the bounds of the aeurismal tumor, strictly so called, it is generally possible to trace the internal and middle coats some or all entire, but is free from ulceration, but by not means in a normal or healthy condition — The inner surface is reddened generally with different blood and lymph sometimes it is covered with adposa, pustulatous, and calcarious patches, and in some few points the inner coat has been abraded or worn off, and divides the middle coat. Scarcely and imperfect, all these
All these changes must be regarded as proof of the unequal condition or degeneration of the arterial tissue, previously to the formation of the auralinal tumor.

In the mass of diseased tissue which I have now attempted to describe, it is important to remark, that the clot of blood filling these vessels completely the interior of the sac, and deposed there apparently for the purpose of serving as a mound or barrier against the escape of the blood flowing from the heart; and in general those clot or fibrin deposits are the thickest and largest, and nearest and finest, where the impulso of the blood is likely to be most forcible.

I have already mentioned that there is one channel for the blood flowing through the auricular cavity. In some instances, however, two channels occur, and of these two, one is large, and the other small and tuberculate. Further, in instances of auricular atrial auricularism, though the cellular or atrial part may generally form the sac of the auricular, yet the parts contribute to strengthen the sac. The arch of the aural is situated in the...
preclude mediastinum, and in the thorax, vire and enlarges, it serves a sort of support from the cellular tissue of the mediastinum from both lungs, from the pericardium in the case of tumours, and occasionally from the left side, and in some cases, from the aorta.

The relation of an occasional tumour of the aorta, with the pericardium and bronchial tubes, has been already considered, as sufficient cause.

This probably is the most convenient place to mention that a particular form of rupture is occasionally observed in the aorta of the aorta. In certain circumstances, the internal and middle coat of the aorta is liable to give way transversely by a sort of transverse fracture or slit. The blood escapes, and is expelled by contraction of the heart, enlarging the slit and forcing the way between the outer surface of the middle coat, and the cellular coat, and separating the latter extensively from the former. Upon reanimation of the body, after death, these generally take place in a few days after the accident, sometimes...
Cases of dissecting aneurism, 12 that form of aneurismal affection, in which the sac is situated in the coats of the vessel.

By Thomas Beverill Peacock, M.D.

Edinburgh Medical and Surgical Journal

Volume LIX. July. Page 246. Edinburgh
In a few hours, the cellular coat is found to be thus dissected by a large quantity of blood from the interior of the vessel. This is what is called dissecting aneurysm of the aorta. It is not a very common lesion, but it has been known to occur. The circumstances in which its peculiar character depends are not well known.
Treatment.

From what has been already said under the previous heads it must be evident that in the management of such a disease as Aneuvesm of the Aorta, there is not much room for the use of remedies. It must be suprised that not only has a great and insuperable organic change taken place in the tissues of the artery, but that this change is also the effect of the previous changes of long duration and deeply seated in the arterial structure.

Aneuvesm indeed, is an organic change, the effect of a previous disease, and thus it is that the prognosis is always indeed decidedly unfavorable. In truth then, the physician has ascertained the existence of the Aneuvesm of the Aorta, he regards his patient as速度 with the dead, and the termination of life is only a question of time, and in certain cases the effect of mental question.

But though these are the suggestions of the history and pathology of this disease, the Physician has it still in his power to render the condition of
His patient being tolerable, and to alleviate
the severity of his suffering by adopting
appropriate treatment.

In general there will
be much breathlessness, great oppression
of the chest, and lacerating pain about
the neck; it is highly necessary to diminish
the free and excitation of the vascular
system. This may be done by
having recourse to one or two general blood
lettings, but large but moderate. The
best plan is to try the effect of the loss
of ten or twelve ounces of blood at first;
and if that precaution does not impair
strength, but affords relief, it may be
repeated by the same amount in the course
of a few days.

And this evacuation of the pent
device to the patient is local bleeding by means
of leeches, to the extent of ten, twelve, or twenty
applied on the front of the neck, and upper
part of the sternum. This may be repeated
twice, fourth or fifth day according to the state
of health, and the effect upon the patient.

It is scarcely necessary to say that the
bowels ought to be emptied periodically.
Acetate of Lead has also been recommended by the French Physicians.
Either daily or every second day. This object should be attempted to be obtained by means of diet; but if this has little effect, any of the ordinary laxatives may be given in moderate doses.

Several physicians have prepared, with the view of moderating the force of the circulation, the use of tincture of quinine, free-sweet, spruce acid, and similar depressant medicines—called tincture of hydrastine, or free-sweet. They may be tried in the usual doses, but the effects must be watched and then used not permitted to last.

Hydrocyanic acid I have not seen exhibited, but I understand it has been given. This also must be carefully watched.

A remedy of a much safer description than any of these is the nitrate of carabate in small doses, from three to five grains, twice or three times a day, doubtfully dissolved in water as a drink.

This salt acts as a depressant and diuretic, and very often its use is followed by considerable relief in the difficulty of breathing. When two saline medicines, simple salt of feeding in the same way, are
A dose of ammonia, and a dose of potash. It is scarcely necessary to say that the first acts upon the mind, the second upon the body. It is scarcely necessary to say that great attention must be paid to diet, and that the use of all stimulating articles of food and drink ought to be strictly interdicted. That right also to be enjoined, and all excitement of the mind or passions ought to be avoided.

There is a mode of treatment proposed by Galen, which at one time was much employed. Galen believed that this would effect a radical cure. This mode consists in strong starving and depleting the patient, as far as can be safely done, at the same time being as strict as the horizontal posture, maintaining at the same time as great bodily and mental rest as possible. Apparent it does not enjoy the confidence of physicians. Dr. Bennett had a patient last year in the Royal Infirmary in which an aneurysm was detected, and the same disappeared under this treatment, only however to return, and terminate the patient's life. In The Thoracic Duct, rarely present in immunity.
This treatment is so harsh and intolerable, that to carry it out to the extent that Balch recommends would in many cases aggravate the disease.

On examining the blood of patients affected with Americanism, we find that it has an alkaline reaction; that the blood is still in an unhealthy state, thereby feeding the disease. The exhibition then of the alkaline carbonates, such as the bicarbonate of soda or potash, (the latter being the more preferable) might give a healthy tone to the blood, and possibly relieve some of the symptoms, and delay the increase of the meningial tumor.

John Forrest Diercks.

31st March, 1856.