

**Cases of aneurism of the aorta, treated by the iodide of potassium / by
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CASES

OF

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ANEURISM OF THE AORTA,

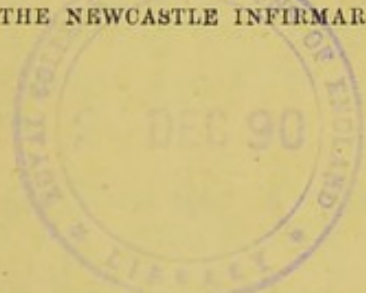
TREATED BY THE

IODIDE OF POTASSIUM.

BY

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CASES OF ANEURISM OF THE AORTA, TREATED BY IODIDE OF POTASSIUM.

MR PRESIDENT AND GENTLEMEN,—During the past three years six cases of aneurism of the aorta, and one case of aneurism of the innominate artery, have been admitted to the Newcastle-on-Tyne Infirmary under my care. In this paper I propose to record, as briefly as is consistent with scientific accuracy, the notes of these cases. I have also added the notes of three other cases, which, for various reasons, are interesting.

The treatment adopted in the seven Infirmary cases was the administration of iodide of potassium, after the manner recommended by Dr George W. Balfour. In all, rest in bed was enforced as far as possible. The results obtained were, on the whole, satisfactory, though the patients remained too short a time in hospital to be permanently benefited.

CASE I.—*Aneurism of the Ascending Thoracic Aorta. Unilateral Sweating of the right side of the Head and Face. Intercurrent Pericarditis. Discharged Relieved.*

J. D., æt. 40, a pitman, single, was admitted to the Newcastle-on-Tyne Infirmary under my care on the 16th January 1875, suffering from an aneurism of the ascending thoracic aorta.

Previous History.—Until his present complaints commenced he enjoyed excellent health. On 17th August 1874, while lying in bed, he happened to place his hand on the upper part of the right breast, and was astonished to feel a strong pulsation. The next day he consulted a doctor, who advised him to leave off work. He has been under medical treatment since, but has got worse instead of better. Previous to August 1874 he suffered for a year at least from pain in the left shoulder-blade and shoulder. Nine years ago he had syphilis.

Family History unimportant.

State on Admission.—Patient is of middle height, dark hair, light brown eyes, complexion pale, mucous membranes anæmic. He is somewhat emaciated. He complains of pain and beating in the right breast, palpitation, shortness of breath on going up stairs or up a hill, and occasional cough. The pain is constant. At times it is very severe, shooting through to the back, up to the shoulder and down the right arm to the tips of the fingers. For several nights past it has been intolerable, and has prevented all attempts at sleep.

On Inspection.—A slight pulsating prominence is seen between the second and third right costal cartilages. A double impulse and systolic thrill are felt over the prominent area, which is the size of a five-shilling piece. Pain and tenderness on pressure are complained of over the prominence, and at a spot between the superior angle of the right scapula and the spine.

On Percussion, there is absolute dullness over a space two inches square. The centre of this area is the pulsating prominence. There is also impaired percussion over the inner half of the right infraclavicular and over the upper sternal region. (See Plate I. Fig. 1.)

On Auscultation, a double impulse and soft systolic murmur are audible over the aneurism. The respiratory murmur and vocal resonance are absent over the dull area. There is impaired percussion between the superior angle of the right scapula and the spine. A double sound is audible over the same spot.

The Pupils vary in size, the right being sometimes larger, sometimes smaller than the left. There is also right-sided unilateral sweating of the head and face. The patient states that he has noticed this for nine years.

The Respiratory Murmur and vocal resonance are weaker in the right than in the left lung. The voice is hoarser than it used to be. There is slight difficulty in swallowing.

The Cardiac Apex can be felt in the sixth left interspace, three inches below the nipple. *Cardiac dullness* extends transversely from the left border of the sternum to the left nipple, a distance of $3\frac{3}{4}$ inches. Vertically it measures $4\frac{1}{2}$ inches, extending from the fourth to the seventh rib. A soft systolic murmur is audible at the apex. The pulmonary sounds are not accentuated. The aortic second sound is very loud over the mid-sternum at the level of the nipple. It is much louder at this spot than over the aneurism itself. The pulse numbers 74, is regular, equal in the two wrists, slightly visible and jerking.

The other Systems and Organs are normal.

Treatment.—He was ordered half-drachm doses of the iodide of potassium three times a day, rest in bed, and a subcutaneous injection of morphia at bed-time.

Subsequent Progress of the Case.—22d January.—He is now almost free from pain, and able to sleep without the opiate.

8th February.—He is much worse, looks ill and collapsed; complains of severe pain, increased by pressure, in the pit of the epigastrium. On auscultation a double pericardial friction murmur is audible over the præcordia. The pulse is 128, weak. The temperature 97° F. He was ordered fifteen drops of the tincture of digitalis every four hours instead of the iodide.

10th.—Decidedly better, friction sound disappearing.

18th.—Still improving, friction gone. Ordered a mixture containing half a drachm of the citrate of iron, quinine, and strychnia.

1st March.—Has suffered from headache for the past twenty-four hours. Is otherwise the same. To take half a drachm of the iodide three times daily.

2d April.—Is now quite free from pain. Has gained a stone in weight since his admission, and feels himself much stronger.

28th.—He was to-day discharged at his own request. Since last note the improvement has continued. The prominence is not now perceptible. He has no pain, nor difficulty in swallowing. The other physical signs are the same.

Remarks.—In this case the iodide was well borne, the pain was speedily relieved, and there was apparently a diminution in the size of the tumour. I say apparently, for it is necessary to remember "that the cure may be simulated by the pulsation becoming less or disappearing, the tumour nevertheless extending in other directions" (Ziemssen, vol. vi. p. 449). At the date of his discharge the prominence was no longer visible, dysphagia and cough had disappeared, and the voice had to a great extent regained its natural tone.

The occurrence of *Unilateral Sweating* is a point of great interest. Since the publication of Professor Gairdner's case in the *Edinburgh Medical Journal* for 1856, several cases have been reported in which this symptom was caused by an aneurism pressing upon the sympathetic. In this case it is doubtful whether the aneurism was in any way the cause of the condition. The unilateral sweating had been observed for nine years, and the first symptom of aneurism, viz., pain, only dated back fifteen months.

The association was, however, interesting, and the condition of the parts was carefully noted on several occasions. I found, *firstly*, that the sweating was sometimes accurately limited by the middle line; *secondly*, when unilateral sweating occurred the right pupil was always smaller than the left, and the temperature under the right ear was at least one degree lower than on the opposite side; *thirdly*, in the intervals, on the contrary, the right pupil was either equal to or larger than the left, and the temperature on the right side equal to or higher than that on the opposite side.

These results are seen in the following table:—

Date.	State of Skin of Right Side of Face.	Condition of Pupils.	Temperature under Right Ear.	Temperature under Left Ear.	Temperature Right Axilla.	Temperature Left Axilla.
Jan. 2.	Sweating (left dry).	Right smaller than left.	95·6	96·7	Not noted.	Not noted.
Jan. 26.	Not Sweating.	Right larger than left. ¹	98·6	97·	97·9	98·
Jan. 27.	Sweating (left dry).	Right smaller than left.	97·	98·7	98·2	98·5

Pericarditis is not a common complication of aortic aneurism. In 68 cases tabulated by Hayden, effusion into the pericardium, presumably inflammatory, is noted only once.

The occurrence of pericarditis with a temperature of 97° F. is perhaps worth noting.

The cause of the pericarditis in this particular case is doubtful. Possibly it was due to some portion of the aneurismal sac pressing upon and irritating the pericardium. Such was apparently the cause of an adherent pericardium which I met with some years ago. That case is interesting from the large size and somewhat unusual situation of the external tumour.

The notes are as follows :—

CASE II.—Large Aneurism of the Base of the Aorta perforating the lower part of the Sternum, and forming an External Tumour the size of a Child's Head. Death from External Rupture. Adherent Pericardium.

J. S., æt. 36, married, a striker, formerly for eight years a soldier, came under my care on 7th April 1873.

Previous History.—His health was excellent until two years ago, when he began to suffer from pain over the region of the liver, in the right shoulder, and right breast. For at least three years he has been short of breath on going up stairs or up a hill. For some months his breast has been swollen. Ten years ago he had syphilis.

Present Condition.—He complains of constant pain in the breast and right shoulder. Has a frequent short cough. A conical tumour, the size of a large orange, projects from the anterior wall of the chest. The appearance of the tumour at this stage of the case is seen in the very excellent drawing (Plate VI. Fig. 2), for which I

¹ It is somewhat difficult to account for the temperature being higher in this observation.

am indebted to the skill of my friend Dr Barron of Durham. The base of the cone rests upon the sternum, and covers the cartilages of the 4th, 5th, 6th, 7th, and 8th right ribs. The apex of the cone is shiny and discoloured. It is evident that, at this point the external wall of the tumour is very thin indeed.

Strong heaving pulsation is felt in the tumour, and all over the anterior wall of the chest.

On Auscultation over the tumour and in the pit of the epigastrium, where there is well-marked pulsation, two sounds are heard of a superficial dull muffled character, and free from murmur. Over the cardiac apex, which is indistinctly felt in the 6th left interspace, the first sound is prolonged into a dull roll. At the manubrium and over the upper and inner part of the base of the tumour a loud double bellows-murmur is heard. Before the diastolic portion of the murmur there is a distinct thud. The pulse is slightly jerking and visible, the right being considerably stronger than the left.

He is troubled with a tickling cough. With the exception of the pain already described, there are no pressure signs. The area of liver dulness is increased downwards. The urine contains a small quantity of albumen.

The *subsequent history* of the case was short. The tumour daily increased in size until it was fully the size of a child's head. The base extended from nipple to nipple, and projected fully an inch and a half below the xiphoid. (See Plate I. Fig. 2.) Death was instantaneous, and was caused by external rupture.

Autopsy.—A large ragged opening was seen on removing the external covering of plaster, etc., which had been applied as a support to the tumour during life. The base of the large external tumour was circular, and extended from the level of the third interspace above to a point an inch below the xiphoid cartilage, a distance of six inches. Transversely, its widest diameter was five inches. (See Plate III.)

The external tumour contained a large quantity of firm laminated clot. The lower end of the sternum was eroded. A circular opening, larger than a five-shilling piece, communicated between the external and internal tumours. Below the lower end of the sternum, in the position of the xiphoid, there was another opening, triangular in shape, and almost as large as the circular one already described.

The edges of the circular aperture were in places beautifully smooth, evidently blood-worn. The internal tumour was of large size and sacculated. It sprang from the very base of the aorta on its right side, and was firmly adherent to the exterior of the right cavities of the heart. The internal portion of the tumour consisted of three sacs; the first was the size of an orange, the second somewhat larger, and the third the size of a hen's egg. All three sacs freely communicated one with the other. The first sprang

directly from the aorta, the second and third communicated with the external tumour through the openings above described. The contents of the internal aneurisms were chiefly recent clots and fluid blood. The walls of the internal aneurism were very thin. In the dried preparation they are transparent. The two surfaces of the pericardium were firmly adherent. The aortic valves were incompetent, the edges of the segments being firmly joined together. The aorta was slightly atheromatous.

CASE III.—*Aneurism of Ascending Thoracic Aorta. Great relief from large doses of Iodide of Potassium.*

H. P., æt. 42, married, a labourer, was admitted to the Newcastle-on-Tyne Infirmary on 4th February 1875, suffering from an aneurism of the ascending part of the aortic arch.

Previous History.—He had smallpox three years ago, but, with this exception, has been very healthy. His present illness commenced six months ago with pain in the chest. Fifteen weeks ago he gave up work. There was then a slight prominence in the upper part of the right chest. He has never had syphilis nor rheumatism, and knows no cause for his illness.

Family History.—Good.

Present Condition.—He is a stout muscular man, 5 feet 9½ inches in height, ruddy complexion, anxious expression, hair brown. He complains of a constant gnawing pain and a sensation of heat in the chest. At times the pain shoots up to the right shoulder, and down the right arm as far as the elbow. He is short of breath on exertion.

A prominence, the size of a hen's egg, is visible between the first and third right costal cartilages. A strong single impulse is felt over the tumour, which is soft and yielding. There is absolute dulness on percussion over the prominence; impaired percussion over an area measuring five inches transversely and four vertically. (See Plate I. Fig. 3.)

On Auscultation, a strong impulse is communicated to the ear, and a double murmur is heard. The systolic portion of the murmur is soft, the diastolic almost musical. The murmur is heard very distinctly posteriorly in the right supra-scapular region, and all down the right side of the spinal column. Two inches to the right of the 6th dorsal vertebra it is more distinct than elsewhere. At this spot the murmur is of a cooing character. The respiratory murmur and vocal resonance are absent over the absolutely dull area anteriorly.

Respiration is weaker in the right than in the left lung. The size of the heart is normal. A soft systolic murmur, distinct from that over the aneurism, and propagated upwards towards the left axilla, is audible at the apex. The pulmonary sounds are not accentuated. Over the sternum, at the level of the 4th costal

cartilage, a loud systolic and faint diastolic murmur are audible. At the ensiform cartilage the second sound can be faintly heard.

(It was particularly noted that the diastolic murmur was much less loud at the base of the heart and down the sternum than over the tumour itself.)

In the vessels of the neck, especially on the right side, a loud systolic murmur is heard. The radial pulse is 66, regular, equal in the two wrists, and just visible. The pupils are equal and dilated. He sleeps badly because of pain in the chest. The other systems and organs are normal.

Treatment.—He was told to remain in bed, and half a drachm of the iodide three times daily was prescribed.

Subsequent Progress of the Case.—He made rapid and continuous improvement, and in a few days was much easier.

On 4th and 5th March the pain returned, and he spat a little blood.

On 9th March the iodide had to be discontinued owing to dyspepsia.

On 12th March he complained of numbness in the right arm, and of cramp in the left thigh and leg. The iodide was repeated.

On 4th April he discharged himself, saying he felt quite well. The prominence was very much less. There had been no pain since 5th March. He promised faithfully to continue the medicine.

Remarks.—In this case the beneficial effects of the medicine are undoubted. When admitted the patient was suffering from severe pain, and was totally unable to undertake the least exertion. The aneurism, too, was increasing very rapidly. After his discharge he returned, in spite of advice, to heavy work (lifting timber). He continued to work for nineteen months without pain or inconvenience. In November 1876 the tumour again began to increase in size. He presented himself for examination on 14th December 1876. His general condition was good. The aneurism was larger than at the time of his discharge from hospital (April 1875). The heart was now considerably hypertrophied. The other physical signs were the same. He was advised to discontinue work, and to take the iodide as before. I have not heard of him since. A point of great interest was the fact that the diastolic murmur was much louder over the aneurismal sac than over the position of the aortic valves and the lower end of the sternum. The question arises whether this was one of those rare cases in which a diastolic murmur is generated in the sac itself.

CASE IV.—*Aneurism of the Transverse Portion of the Aortic Arch.*

J. F., æt. 55, a labourer, was admitted on 1st June 1875, complaining of pain in the chest, shortness of breath, and difficulty in swallowing.

Previous History.—His present complaints commenced five

months ago. Has always been very healthy. Has not had syphilis nor rheumatism.

State on Admission.—He is a very stoutly-built, muscular man, light hair, ruddy complexion. The thorax is well formed. The left external jugular and left brachio-cephalic veins are distended and prominent. There is marked dulness on percussion over the manubrium sterni and to the left of it. The dull area measures three inches by four. (See Plate I. Fig. 4.)

A systolic murmur is audible all over the dull area, and in the left subclavian artery. A well-marked thrill is felt in the same vessel. The murmur is heard, though faintly, in the left supra-spinous fossa. It is loudest immediately below the left sterno-clavicular articulation. It is less distinctly heard at the second right costal cartilage. The aortic second sound is markedly accentuated. The heart is of normal size and healthy.

The left radial pulse is of good strength, and numbers 80 in the minute. The artery feels rigid. The right radial pulse is imperceptible. Respiration is weaker in the left than in the right lung. He suffers from a clanging paroxysmal cough. He spits a little frothy mucus. On laryngoscopic examination nothing abnormal is to be detected. The voice is somewhat husky. He has difficulty in swallowing, and complains of a choking sensation in the throat. The left pupil is slightly larger than the right. Both are contracted.

He occasionally feels pain in the pit of the epigastrium. This pain is relieved by pressure. The other systems and organs are normal. Two enlarged glands are to be felt above the left clavicle.

Treatment.—Half a drachm of the iodide was given three times daily, and he was confined to bed.

Subsequent Progress of the Case.—He quickly improved, and discharged himself on 8th July, saying he felt fit for work. The cough and dysphagia had gone.

22d July.—He was re-admitted very much worse, the cough constant and severe, the dyspnœa amounting to orthopnœa; severe pain in the pit of the epigastrium. The same treatment was adopted.

13th September.—The iodide was discontinued, as it had caused painful swelling of the ankles. The drug was repeated more than once with the same result. A tonic containing iron and quinine was substituted.

28th September.—He was discharged, feeling very well. The physical signs were the same as on his admission.

10th January 1876.—He presented himself to-day, saying that he had been at work ever since his discharge. He still suffers from cough and shortness of breath on exertion. Otherwise he feels well.

Remarks.—The nature of this case was not so absolutely certain as in the cases previously related, for there was no external

tumour. The facts which led me to diagnose an aneurism were—

1. The rapid growth of the intra-thoracic tumour. (The symptoms only dated back five months.)
2. The general appearance and good condition of the patient.
3. The accentuation of the aortic second sound.
4. The pulsation in the supra-sternal notch.
5. The absence of œdema, in spite of the large size of the tumour, the obliteration of the right radial pulse, and the engorgement of the left brachio-cephalic and external jugular veins.

The diagnosis was fully justified by the subsequent history. All the cases of intra-thoracic tumour (non-aneurismal) with which I am acquainted have gone on steadily from bad to worse, and have soon been attended with marked constitutional disturbance, emaciation, etc. Nor is this to be wondered at, when it is remembered that the forms of morbid growth occurring in this situation are rapidly growing sarcomata and carcinomata. (Fibromata and lipomata being so very rare that practically they may be ignored.) Since this paper was read I have met with a remarkable case, in which a cyst the size of an egg was in close contact with the aortic arch at the junction of the ascending and transverse portions. The physical signs were, in many respects, identical with those of aneurism.

CASE V.—Large Aneurism of the Lower Part of the Thoracic and Upper Part of the Abdominal Aorta. Extreme Emaciation, Pain, and Sleeplessness. Greatly relieved by Large Doses of Iodide of Potassium. Death after Discharge from Hospital from Rupture of the Sac into the Left Pleural Cavity.

P. M'C., æt. 41, married, a marine store dealer, formerly a sailor, was admitted on 20th October 1875, complaining of agonizing pain in the small of the back, sleeplessness, debility, and constipation.

Previous History.—His present illness commenced three years ago with pain in the small of the back. Previous to that date he was very healthy. Eighteen years ago he had syphilis. For the last six months the pain has been "terrible." He has been almost constantly under the influence of morphia. He has been under many medical men, but has got no benefit.

Family History.—Very good.

State on Admission.—He is a perfect skeleton, and wears an expression of great suffering. He is very pale and anæmic, though naturally ruddy. His hair is red. The left thigh is slightly flexed on the abdomen. He can only sleep in one position—on his right side, with the thigh well flexed on the abdomen, and the head and chest propped up by pillows.

There is a marked feeling of fulness, hardness, and resistance

in the pit of the epigastrium. A powerful heaving pulsation and thrill are felt over the same region. No defined tumour can be made out, even under chloroform. The epigastrium is dull on percussion; the rest of the abdomen is resonant. A loud systolic murmur is heard over the seat of the epigastric pulsation. No murmur is audible posteriorly. There is dulness over the lower part of the right chest posteriorly.

The *heart* is of normal size, the first sound at the apex is short and valvular; the pulmonary sounds are accentuated; the aortic normal. The radial pulse is 96, regular and weak. The tongue is flabby; there are several discolorations on the buccal mucous membrane; the colour of the skin is normal. There is no difficulty in swallowing, but he is afraid to eat, as food always causes pain in the pit of the stomach. He never vomits. The bowels are never relieved except by medicine. A very small dose of castor-oil is sufficient for the purpose.

The other Organs and Systems are normal.

Treatment.—He was ordered half a drachm of the iodide three times daily and a subcutaneous injection of morphia when required.

Subsequent Progress of the Case.—Three days after admission he was comparatively easy and was able to sleep without opiates. In a fortnight all pain was gone, he was able to stand and walk, had gained flesh, and looked wonderfully improved.

He discharged himself on 24th November. (He was in good circumstances, and thought he could be as well attended to at home as in hospital.)

He presented himself several times afterwards, and always reported himself better.

He died suddenly some months after his discharge. Dr Bates of North Shields, who made a post-mortem, very kindly sent me the specimen. Death was caused by rupture into the left pleural cavity.

Description of the Specimen.—At the junction of the transverse with the descending portion of the aortic arch, there was a bulging the size of a small plum. An inch below this the aorta was uniformly dilated to the size of a hen's egg. Immediately below the second dilatation there was a large aneurism. It was heart-shaped, the size of a child's head, and involved the whole of the descending and the upper part of the abdominal aorta. (See Plate IV.)

The greater part of the tumour bulged downwards into the abdominal cavity. The sac of the aneurism contained a large quantity of firm laminated clot. The diaphragm was stretched over its surface; the 7th, 8th, and 9th dorsal vertebræ were eroded. The aneurism had burst into the left pleural cavity. The aorta was extensively atheromatous. The heart was of normal weight. The mitral orifice was very much narrowed, owing to the deposit

of a large quantity of calcareous matter in and around it; one calcareous nodule was fully the size of a large cherry. The calcareous deposit was very hard and irregular, and was partly embedded in the muscular substance of the organ. The aortic valves were healthy.

Remarks.—This patient on his admission was in constant agony, emaciated to the last degree. For more than six months he had been under the constant influence of large opiates. After a few days of the iodide his sufferings were completely relieved; he gained flesh, was able to move about, and at the end of a month persisted in leaving the hospital. A better result, considering the short period of treatment, could not have been wished for. Had he submitted to remain in bed and to continue the treatment, the fatal result might have been very much longer delayed.

The case is interesting in another respect. It is highly probable, I think, that the extensive arterial degeneration was the result of the previous syphilis. And I am disposed to think that the large calcareous mass about the mitral valve was due to the same cause. This hypothesis must be received with considerable caution. No less an authority than Dr C. Hilton Fagge says, "I confess I have met with no facts either of observation or by reading that would lead me to believe that syphilis had anything to do with the diseases under consideration. (Article in Russel Reynolds's *System of Medicine*, vol. iv., "Disease of the Valves of the Heart," p. 628.)

I have in my possession another specimen which affords, I think, some corroborative evidence. A patient who had previously had syphilis died from the rupture of an aortic aneurism into the pericardium. The arterial system generally was extensively diseased, and in the walls of the left ventricle there was a large calcareous deposit similar in character to the one I have described. One of the papillary muscles at its base had undergone the same form of degeneration. The valves were healthy. Walshe, too, believes that syphilis may be the cause of cardiac valvular disease. He says, "As far as my observation goes, it supports the notion that in its tertiary and ultimate development syphilis may lay the groundwork of aneurism, *as it apparently does of valvular disease also.*"¹ (No italics in the original.) And again, "We are sometimes led to surmise in examining cases of valvular disease, where every ordinary cause of such affection can be excluded, where the defect is known from past examination not to be congenital, and where the patient is tertiary syphilitic, that the structural changes in the valvular apparatus may be the result of syphilitic action. But proof is yet deficient."²

The aneurism ruptured into the left pleural cavity, the usual termination of aneurism of the lower part of the thoracic aorta. Abdominal aneurisms, too, frequently burst in the same direction. Of sixteen cases tabulated by Hayden, three ruptured into the

¹ Walshe *On the Heart and Aorta*, page 391.

² *Ibid.*, page 500.

lung and pleura. The termination in the remaining thirteen was as follows:—

Rupture into retro-peritoneal tissue,	6
Rupture into peritoneum,	1
Syncope,	2
Asthenia,	1
Bright's disease,	1
Not noted,	2
	<hr/>
	13

Of nine cases of abdominal aneurism, recorded in the *Transactions of the Northumberland and Durham Medical Society*, the termination was as follows:—

Rupture into retro-peritoneal tissue,	4
Rupture into peritoneum,	2
Rupture into left chest,	1
Rupture externally through a bed-sore,	1
Cured,	1
	<hr/>
	9

The case, which ruptured externally through a bed-sore, is, so far as I know, unique, and I feel quite justified in quoting it at length. The patient was seen from time to time by Drs Heath, White, and Hawthorn in consultation with Dr Cargill. It is reported by Dr John Cargill as follows (*Transactions of Northumberland and Durham Medical Society*, Session 1851-52, page 38):—

CASE VI.—*Enormous Aneurism of the Abdominal Aorta. Death from External Rupture through a Bed-sore.*

"The patient, a gentleman, æt. 33, enjoyed good health until Christmas 1849. He then began to complain without any known cause of pain in the back, especially on stooping, or sitting long in a stooping position. He consulted Dr Taylor of Huddersfield, who treated him for sciatica. The only thing which gave him relief was large doses of Battley's solution. He was first seen by me (Dr Cargill) on the 4th January 1851. The pain was then very constant, sometimes in the hip, sometimes in the middle of the thigh. Aneurism of the abdominal aorta was suspected, but no trace of it could be discovered.

"By-and-by there came a different species of pain. This was of a scalding nature, and it was confined precisely to the anterior surface of the right thigh, the skin alone being the seat of it.

"During all this time there was no paralysis of the limb, nor any œdema of the feet, but there was a slight halt in walking.

"He now, after four months of treatment, improved wonderfully, so as to be able to return to business, and continued writing for

four or five hours together, never entirely without pain, but that pain only trifling. He also gained flesh and looked well.

"*In August* all the symptoms returned; he got worse and worse, thin and pale, his appetite left him, and the opiates had to be repeated in large doses.

"*On the 15th of December* a tumour, about the size of a small apple, was discovered two inches to the left of the first two lumbar vertebræ. It was oblong, and pulsated strongly. A very faint rasping murmur was heard on auscultation.

"In seven days the tumour had acquired thrice the size in the lumbar region, and had crept round the left loin anteriorly to within two inches of the umbilicus. It felt elastic and somewhat tough, and the same loud rasping murmur was distinguishable both in front and behind.

"In a few weeks it attained an immense size, pushing up the diaphragm, and often impeding respiration. It pressed down into the left groin, and the left limb was almost entirely paralyzed, the foot was swollen, and the toes became intensely painful.

"The cutaneous burning pain before mentioned as affecting the thigh now frequently assailed the surface of the right side and the right back, and was best relieved by the same application, viz., cold water.

"About four weeks before his death Mr S. was seized with a dreadful attack of bilious vomiting, which continued at intervals for two days, preceded by delirium and jaundice, and followed by obstinate constipation.

"At last the tumour became so large (see Plate II., Fig. 5) and hard, extending for three inches to the right of the umbilicus, that it seemed to some almost Utopian to regard it any more as an aneurism; but the result showed that its nature had been correctly appreciated, for, on the 19th February, he was seized with alarming prostration and difficulty of breathing, and in two hours he expired.

"When I came in two hours after his death, suspecting the proximate cause, I turned his body on to the right side, and found that the tumour had given way by a small opening in a deep bed-sore which had formed on the back, and that the bed and floor beneath were soaked with blood. The tumour was collapsed and soft.

"*The Autopsy* was made twenty-eight hours after death by Dr Gibb, house-surgeon of the Infirmary, in the presence of Dr Heath, sen., Dr Glover, and myself (Dr Cargill). Organs of the chest healthy, liver enlarged and fatty. The stomach was pushed upwards, and the whole of the small intestines were pushed over to the right side of the abdomen (where they occupied a small space only) by a solid tumour of immense size, over the anterior surface of which ran the tranverse arch of the colon and its descending portion. They were firmly agglutinated to the tumour,

and narrowed in their calibre in consequence. The internal surface was very dark, as if the mucous membrane had been secreting carbon, and that tract of the tumour to which they were attached was as though painted with the same black deposit. The descending colon found its way into the pelvis by coursing over the right border of the tumour. The tumour had a hard, tough, leathery investiture, composed evidently of dense interwoven layers of cellular tissue, having a fibrous appearance. The following were its position, boundaries, and dimensions:—Superiorly it was bounded by the diaphragm, which formed the highest part of its wall. Hence it extended down the left side of the whole abdomen into the lumbar region, and forward to the pelvis, where it finished by pushing before it the fascia under Poupart's ligament for about an inch into the crural region, the psoas and iliacus muscles being lifted over its inner and lower surface, and by their inseparable attachment to it materially strengthening its wall.

“Thus, its lower termination was conical in form. The sacro-sciatic plexus was flattened and attenuated everywhere. To the right the tumour extended across the abdomen for three inches beyond the umbilicus, pushing the liver and stomach upwards, and the small intestine outwards and downwards, and resting on the vertebral column and the right lumbar floor, immediately internal to the right kidney, which it just cleared, leaving it in the undisturbed possession of its functions. Its length horizontally—*i.e.*, from the diaphragm to the thigh—was 16 inches; its transverse breadth—*i.e.*, from the junction of the sac with the left abdominal wall across its centre to its termination at the vertebral column—was 13 inches; from its anterior surface, through it to the anterior face of the vertebral column, was 6 inches, and composed of layer upon layer of dense fibrinous clot; and the weight of the whole mass was 14 lbs. The two last dorsal and the three first lumbar vertebræ were carious, two of them very much eaten away, and the interior of the canal itself in two cases only barricaded by its thickened and tough internal periosteal lining, which was exposed. The intervertebral cartilages were unaffected. The tenth rib was greatly absorbed. The eleventh was converted into a substance like a thin layer of cartilage, the chief portion of it being absent. The twelfth had entirely disappeared. On now detaching the aorta from the vertebral column from above downwards, we perceived an open orifice an inch long in its posterior wall close to the cæliac axis, and being a passage leading backwards to a true aneurismal dilatation of all the coats of the artery, and which for size might contain the fist. The direction of the passage of the aorta was through the right side of the mass, and therefore a few inches to the right of its natural position. During life the femoral arteries could be felt pulsating, and of equal strength. What happened to the left kidney was very remarkable. It nowhere appeared on the tumour being removed from

the body, and we conjectured it would be found embedded in the sac. This was the case, for incising the tumour on its lower third in front, and towards its left side, we came upon it immediately under the first dense outer layer of the sac. It was perfectly flattened, and, as it were, pressed out, but preserved the usual pale, smooth, and compact aspect of the kidney. The artery and vein were flattened and obliterated, as was also the ureter. The right kidney was almost half as large again as it should have been to be natural."

The cure recorded in the Transactions of the Society is Dr William Murray's well-known case, the first case in which the rapid pressure method was adopted.

Great improvement followed the same plan of treatment in the following case.

CASE VII.—*Abdominal Aneurism partly Cured by Pressure.*

W. P., æt. 38, a sailor, was admitted to the Tynemouth Union Workhouse under the care of my brother, Dr J. W. Bramwell, on 9th December 1874, complaining of rheumatic pains, and of an abdominal aneurism.

I examined him on 10th December, with the following result:—

Previous History.—Nine years ago he had syphilis. Five years ago he first perceived a pulsating tumour in the abdomen. It was then about the size of an egg. The tumour gradually increased in size until two years ago. At that time he was admitted to the Royal Infirmary, Liverpool, and pressure was made upon the abdomen. Since this treatment the tumour has been harder, and has not increased in size. He says he has consulted 200 doctors. All, with one exception, Professor Henderson of Edinburgh, told him it was an aneurism. For the last two years he has been able to go to sea. He is unable to do heavy work. The aneurism causes, he says, considerable inconvenience, and he constantly feels the beating. He has been treated by iodide of potassium, and the aneurism has on more than one occasion been compressed (probably below the sac). His present attack of rheumatism commenced about a fortnight ago.

Present Condition.—He is a short, dark-haired, dark complexioned man. Pale and anæmic. None of the joints are swollen. The pains are worse at night. The temperature is normal. A large irregular-shaped tumour occupies the epigastric, umbilical, and left hypochondriac regions. It is broad above, narrow and rounded below. (See Plate II., Fig. 6.) The narrow part is very firm and hard, the upper part softer. Strong expansile pulsation is to be felt in the upper part of the tumour. The cartilages of the lower ribs are heaved forwards by the pulsation.

On Percussion, there is dulness over that part of the tumour which is situated in the epigastric and left hypochondriac regions.

There is also dulness over the lower part of the left infra-mammary region.

On Auscultation, a very strong heaving pulsation is communicated to the ear through the stethoscope. A faint murmur is heard towards the end of the impulse. No murmur is heard posteriorly. There are no pressure signs. The heart is normal, but very weak. The radial pulse is 54. There are several scars and partly healed abscesses over the front of the chest. The glands in each groin are enlarged. The other systems and organs seem normal. The patient was treated by full doses of iodide of potassium. In a few days his pains were relieved. He discharged himself, saying he would go to sea again.

CASE VIII.—*Large Aneurism of Thoracic Aorta. Severe Pain. Relieved by large Doses of Iodide of Potassium.*

M. M'L., æt. 37, married, washerwoman, was admitted on the 20th April 1876, suffering from an aneurism of the ascending portion of the thoracic arch.

Previous History.—Two months ago she felt a severe pain under the right shoulder-blade. A week afterwards she noticed a lump above the right breast. The lump has steadily increased in size, the pain has become more severe, and she has been troubled with a tickling cough.

She never ailed anything before the commencement of the pain two months ago. She has not suffered from rheumatism. Has been a steady woman. Has always been accustomed to hard work, but never remembers having strained herself. She has had three children, no miscarriages.

Family History.—Unknown to her.

State on Admission.—She is a well-conditioned, healthy-looking woman. Hair dark brown. She complains of a "heavy beating" in the chest, and of constant pain in the right breast and shoulder. The pain is at times constrictive, and shoots into the right shoulder, and down the right arm to the tips of the fingers.

A pulsating prominence, the size of a hen's egg, is seen between the second and fourth right costal cartilages. On pulsation a double impulse is perceived, and the tumour is very soft and liquid-feeling. There is impaired percussion from the clavicle to the second rib. Absolute dulness from this point to the fourth rib (See Plate II., Fig. 7); impaired percussion from the fourth to the inferior border of the fifth rib, where the liver dulness commences. Transversely the absolute dulness commences at the right border of the sternum, and extends outwards two inches. There is impaired percussion over the manubrium sterni and between the right scapula and the spine. The chest-wall is here (posteriorly) more prominent than on the left side. On auscultation over the aneurism two sounds are heard, both have a soft muffled character, the second

being the louder of the two. There is no murmur. The same sounds are heard very distinctly in the right scapula and spinal region.

The veins on the right side of the neck are prominent, and the base of the neck above the right clavicle is slightly swollen. There is marked difficulty in swallowing, the stoppage being referred to a point corresponding to the manubrium sterni. Respiration in the right lung is weak and jerking. Sibilant and sonorous râles are heard all over the chest; the cough is frequent; inspiration is attended with a marked stridor; the voice is hoarser than it used to be.

The heart is of normal size, the aortic second sound accentuated. The radial pulse is 84, regular, the right somewhat stronger than the left. The carotid pulsations are equal on the two sides. She sleeps very badly because of the pain. She complains of a constant roaring in the right ear. Hearing on the right side is not so good as it used to be. She suffers occasionally from frontal headache.

The other organs and systems are normal.

Treatment.—Thirty grains of the iodide were ordered three times a day, and she was confined to bed.

Subsequent progress of the case.—After three or four days she was free from pain.

On 29th May she was obliged to go home to attend upon her husband, who was ill. At the time of her discharge she said she felt quite well. There had been no pain since the date of the last note. The prominence was less marked, but the pulsation was still strong and liquid-feeling. Dysphagia and cough had gone.

CASE IX.—*Aneurism of the Abdominal Aorta at the point of origin of the Renal Arteries. Occlusion of the Vessel below the Seat of the Aneurism. Establishment of the Collateral Circulation. Death. Autopsy.*

J. W., æt. 35, a labourer, was admitted on the 15th June 1876, complaining of pain in the back, great palpitation, and numbness and coldness in the lower extremities.

Previous History.—Patient states that he has been an unusually strong healthy man. Fifteen months ago he first felt pain in the small of the back. A year ago his legs turned weak, and he experienced a numb feeling in the outer part of each thigh. Eleven weeks ago he began to suffer from headache, pain in the right breast, and palpitation. He has been off work for nine weeks, and has been daily getting worse. Seven years ago he had syphilis. He has been a very heavy drinker. Has never had rheumatism, and knows no cause for his illness.

Present Condition.—Is very pale in the face. The left pupil is

larger than the right. There is most violent jerking collapsing pulsation in the vessels of the head, neck, upper extremities, and upper half of the trunk. No pulsation is to be felt in the lower half of the abdominal aorta nor in the femorals.

The superficial epigastric arteries are the size of large goose-quills, and stand prominently out in the abdominal walls. They are very tortuous, and can be grasped between the fingers. The course of the circulation in these vessels is from above downwards. (This was distinctly demonstrated by pressure.) The lower intercostals are greatly enlarged and pulsate strongly. The terminal branches of the internal mammaries can be felt pulsating in the upper part of the abdominal wall. The superficial epigastric arteries are of a blue colour and look like veins.

There is a strong heaving pulsation and marked thrill in the pit of the epigastrium. No distinct tumour can be defined. There is dulness on percussion over the area of pulsation. On auscultation a loud systolic murmur is audible. Posteriorly there is dulness on percussion on both sides of the spine in the lower dorsal region, most marked on the left side. On auscultation over this dull area two sounds, but no murmur, are audible. The sounds give one the impression of being heard in a large vessel. It is over this dull area and in the right lumbar region that he feels so much pain. Two inches to the right of the last dorsal vertebra a loud rasping systolic murmur is audible. The murmur is audible over an area an inch square and seems very superficial.

The patient complains of constant pain in the epigastrium and back (lower dorsal and lumbar regions), of coldness and numbness in the lower extremities, of headache, giddiness, and of palpitation.

There is powerful heaving pulsation all over the præcordia. A thrill is felt in the second and third right interspaces, just outside the sternum. He complains of tenderness on pressure all over the præcordia. The apex beat is seen and felt in the fifth left interspace, an inch and a half below and slightly outside the nipple. The area of cardiac dulness is increased. There is impaired percussion over the manubrium sterni, and in the second and third right interspaces. All over the præcordia a rough double murmur is heard. The systolic portion of the murmur is louder than the aortic. The point of maximum intensity is the base, and the murmur is propagated upwards along the course of the great vessels. No second aortic sound is audible. The cardiac pulsations are heard all over the chest posteriorly, but are quite distinct from the sounds heard over the lower part of the thoracic aorta. A marked thrill and systolic murmur are present in the carotids. The radial pulse is 102, regular, visible and jerking to an extreme degree.

The *pulmonary, digestive, urinary, nervous, and integumentary systems* seem normal.

Treatment.—Rest in bed, and half-drachm doses of the iodide three times a day were prescribed.

Subsequent progress of the case.—After a few days the pain was much relieved, and the patient felt better.

On 8th September it was noted :—He is now free from pain, the palpitation is much less, and he is gaining flesh and strength.

On 20th he begged hard to get up, and was allowed to do so for a short time during the afternoon.

On 29th he was suddenly seized during the night with a pain under the right eye. The next morning that part of the face was swollen and painful to the touch. The iodide was discontinued, and he was ordered thirty grains of compound jalap powder. (I fancy this attack must have been the result of an embolism, unfortunately the matter escaped my memory at the post-mortem.)

On 2d October he was very much worse, complaining of severe pain in the pit of the epigastrium and of vomiting. He was pale and sunken, the pulse weak and collapsed. The strong pulsation and murmur in the epigastric region had disappeared. The urine contained one-third of albumen, a few pus corpuscles, but no casts. A subcutaneous injection of morphia and a mixture containing dilute hydrocyanic acid were prescribed.

On 5th October there was constant and violent hiccup. Every now and again he was seized with a choking sensation at the upper end of the sternum, apparently due to tonic spasm of the diaphragm. He looked as if he were dying. (So prostrate, pale, and collapsed was he, that I was of opinion that the aneurism had ruptured.)

On 8th October he was very much better.

On 3d November it was noted :—The improvement has still continued. The urine still contains a trace of albumen. The iodide was again prescribed ; half-drachm three times daily.

On 14th November the epigastric pulsation and murmur are again present, but not nearly to the same extent as on his admission. The arterial pulsation throughout the body is less violent.

24th November.—For the last two nights there has been a return of the pain in the right breast. Has also vomited once or twice at bedtime. To take the iodide five times daily.

1st December.—Very much better. Has gained more than two stones in weight since his admission. Is now quite free from pain.

On 14th December the patient was shown to the members of the Northumberland and Durham Medical Society, and I made the following remarks :—

“The abdominal aorta is evidently obstructed. What is the nature of the obstruction ?

“Local contractions or obliterations of arteries, says Quinke,¹ may occur—

“1st, As a congenital condition.

“2d, As the result of disease of the arterial tunics (arterio-

¹ Ziemssen's *Cyclopædia of Medicine*, vol. vi. page 471.

sclerosis, acute inflammation with the formation of an abscess, tumefaction of the walls of the artery).

"3d, As the result of external pressure (from tumours or cicatrices).

"4th, From coagulation of the blood (thrombosis and embolism).

"In this case the causes classified under the second heading may, I think, be excluded, because of the position of the obstruction, and the very gradual and insidious manner in which the symptoms commenced. That the obstruction is not due to the pressure of a cancerous tumour is proved by the 'good condition' of the patient and the marked improvement which has taken place under treatment. We are reduced, therefore, to the obstruction being either congenital or caused by an aneurism of the aorta itself, or by the formation of a thrombus round some prominent spiculum or point of calcification.

"Narrowing of the abdominal aorta has occasionally been observed as a congenital condition. Supposing cardiac changes, aortic disease, and hypertrophy to have been superadded, many of the physical signs and symptoms present in this case might have been produced. All the phenomena are, however, best explained by supposing the obliteration to have been caused by the occlusion of the vessel by an aneurismal clot. The following facts are in favour of this view:—

"1st, The previous history. The patient had been a strong healthy man until fifteen months before his admission to hospital.

"2d, The fact that he had had syphilis and had been subject to strain and hard work.

"3d, The characteristic pain in the back. The pulsation and murmur in the pit of the epigastrium. The dulness and arterial sound over the situation of the pain posteriorly (physical signs almost identical with those in Case V., P. M. C.)

"4th, The marked improvement which followed the treatment."

The patient discharged himself on 31st December. I saw nothing more of him until 22d March, when he returned very much worse. The pain constant and severe. The shortness of breath and palpitation increased. The physical signs at the seat of the aneurism were the same. The heart was considerably increased in size, the apex beat now corresponding to a point three and a half inches below and outside the left nipple. The arterial pulsation in the upper part of the body was very violent. Faint pulsation could now be perceived in the femorals. There was no pulsation whatever in the abdominal aorta below the seat of the aneurism. The same *treatment* as before was adopted. The pain was relieved, but the patient did not improve.

On 7th May it was noted:—For the past week he has been very much worse. He complains of great pain and tenderness in the pit of the stomach. He vomits everything. He has not made

water for twenty-six hours. A small quantity was drawn off by the catheter; it was bloody and highly albuminous.

9th May.—On going up to his bed I found him dead. He had spoken to the nurse a few minutes previously, and was thought by her and by his fellow-patient to be asleep.

The post-mortem was made twenty-four hours after death, the body having been previously injected with a coloured solution of plaster-of-Paris.

The collateral circulation in the anterior abdominal wall was carefully dissected out, and corresponded to the descriptions of the text-books.

The superficial epigastric arteries were larger than the radials, the deep epigastrics fully the size of the brachial. The collateral circulation within the abdomen seemed to follow the usual course. I cannot, however, be certain upon this point, for just as we were commencing the dissection of the abdomen, a body of Irish friends came to carry off the corpse, and as we had no permission to make a post-mortem, the examination had to be completed with all possible despatch. The abdominal aorta was removed for separate examination. At the point of origin of the renals and superior mesenteric the canal of the vessel was expanded, forming an aneurism about the size of a small egg (See Plate v. Fig. 1). The cavity of the aneurism was almost completely filled with dense laminated clot, the outermost layers of which were firmly adherent to the walls of the sac.

The aorta below the aneurism was completely occluded by a firm old clot which was directly continuous with the outer layers of the clot lining the aneurismal cavity. (See Plate v. Fig. 2.)

The aortic clot extended into the common iliac arteries to the point of bifurcation of those vessels. (Specimen exhibited.)

The right renal artery consisted of two branches. One of them was completely occluded by an old decolorised clot. The portion of the right kidney supplied by this artery is represented by a very large cicatricial depression. (Specimen exhibited.)

The condition of the right kidney and of its artery explain the attack of albuminuria, which at the time was difficult to account for. The orifices of the superior mesenteric and renal arteries are almost entirely concealed by the aneurismal clot, and it is extraordinary that the circulation in those vessels was not more completely interfered with. The spermatic arteries were completely occluded at their origin from the aorta, and yet there was no wasting of the testes. The inferior mesenteric was also obstructed at its origin from the aorta. The heart weighed 1 lb. 15 oz. The aortic valves were thickened and incompetent. The base of the aorta was atheromatous. The other organs of the chest and abdomen were healthy. The brain was not examined.

At the same time that this patient was in the Infirmary, I had under my care in the very next bed to him a case of varicose

enlargement of the abdominal veins; the coincidence was remarkable, and you will perhaps allow me to relate a few particulars of that case.

Varicose Enlargement of the Superficial Abdominal Veins from Obstruction of the Left Common Iliac Vein at its Junction with the Vena Cava.

H. M'L., æt. 45, married, a puddler, was admitted to the Newcastle-on-Tyne Infirmary under my care on 13th July 1876, suffering from eczema of the right leg.

The history of the case was as follows:—Fourteen years before admission the patient contracted syphilis. Six years ago while suffering from tertiary ulceration on the chest and legs, he was attacked with severe pain in the pelvis, corresponding, he says, to a point on a level with the lower end of the back bone (tip of the coccyx.) The pain lasted for a few days. When it passed off his left leg became "fearfully swollen." The leg was not inflamed, nor in the least painful. The veins in the left groin and on the left side of the abdominal wall now commenced to swell, and he suffered from piles. At the end of a year the veins attained their present enormous size. The swelling of the leg gradually disappeared. A year ago the right leg began to swell, and the veins in the right groin and in the right side of the abdominal wall began to enlarge. The patient's general health has been fairly good. He has suffered occasionally from syphilitic rheumatism and palpitation.

The superficial abdominal veins were enormously distended and tortuous. This varicose condition was much greater on the left than on the right side. Indeed, it was obvious that all the blood from the left lower extremity was being returned to the heart through this abnormal channel. The heart and great vessels were normal. No tumour could be discovered, even on careful rectal examination, in the pelvic cavity.

The enlargement of the veins is well seen in the drawing. (See Plate vi. Fig. 1.)

Remarks.—There can be little doubt that the left common iliac vein was alone obstructed in the first instance. The swelling of the veins on the right side showed that the vena cava itself or the right common iliac vein were subsequently partly occluded. The cause of the obstruction was probably some syphilitic lesion.

CASE X.—*Large Aneurism of the Innominate Artery. Death. Autopsy.*

George P., æt. 37, sailor, married, was admitted on 20th February 1877, complaining of great difficulty in breathing, paroxysmal cough, and pain at the root of the neck.

Previous History.—The patient states that, for the past ten years, he has not been very strong. He has frequently suffered from rheumatic pains, but has never had rheumatic fever. For three years he has been short of breath on exertion. For a year he has suffered from pain in the left breast. Six weeks ago he caught cold. He has been laid up for a fortnight, and is every day getting worse. A fortnight ago he first noticed a swelling at the root of the neck. He denies having had syphilis. He married when he was seventeen years of age. His wife has had four children and two miscarriages; all the children are healthy. He has been a sober man.

Family History.—Good.

Condition on Admission.—He is a strongly-built, muscular man. He says he has lost a great deal of flesh during the past fortnight. His expression is distressed and anxious. He is very short of breath, and obliged to rest in a sitting position. He is troubled with a frequent clanging paroxysmal cough. Expiration is attended with a hoarse stridor. There is some difficulty in swallowing. He complains of a constant pain and choking sensation at the root of the neck. *On Inspection*, the root of the neck is seen to be swollen. Each clavicle is projected forwards at its sternal end. Both brachiocephalic veins, and the veins on each side of the neck, are prominent and enlarged. *On Palpation*, strong heaving pulsation is felt in the supra-sternal notch, and over the swelling behind each sterno-clavicular articulation. Indeed, the prominence of the clavicles is seen to be due to a pulsating tumour situated immediately behind the manubrium sterni. *On Percussion*, there is dulness over the manubrium sterni and on adjacent part of each infra-clavicular region. The dulness is more extensive on the left than on the right side, and the left sterno-clavicular articulation is more prominent than the right. (See Plate ii. Fig. 8). *On Auscultation*, two muffled sounds are heard over the pulsating prominence; the second is the louder of the two. The radial and carotid pulses are regular, equal in strength, but very weak. I regret exceedingly that sphygmographic tracings of the radial pulses were not taken, as important diagnostic evidence would probably have been derived therefrom. The aneurismal sounds are heard very distinctly in the supra-scapular regions. The heart is normal.

Expiration is attended with a stridor. Sibilant, sonorous, and fine crepitant râles are heard all over both lungs, but there is no dulness. The respiratory sounds are of equal intensity on the two sides of the chest. The expectoration is scanty, and bronchitic. A laryngoscopic examination was attempted, but was unsuccessful, owing to the great distress it caused the patient.

The *urine* contained a trace of albumen and some phosphates. The other organs seemed natural. The temperature was normal.

Treatment.—A subcutaneous injection of morphia was administered soon after his admission, and a mixture containing Vin.

ipéc., Chloric ether, Sp. amm. arom., and Tr., card. co. was prescribed.

On 21st February, half a drachm of iodide of potassium was ordered to be given three times daily, and the subcutaneous injection of morphia to be repeated if necessary.

On 22d February he was rather better.

On 23d February much worse. Pulse, 126; temperature, 102°·6. The aneurismal swelling seemed larger. He had expectorated a considerable quantity of thick muco-purulent fluid. The iodide was discontinued, and icebags were applied over the tumour, which was thought to be an aneurism of the transverse portion of the aortic arch.

On 24th February he was in *statu quo*.

On 25th February there was some improvement. The dyspnœa and cough were easier.

On 26th February he was again worse.

On 27th February it was determined to have recourse to galvanopuncture; but on visiting the patient I found him *in extremis*, and the operation was not performed. He died on the morning of 28th February.

The *post-mortem* was made thirteen hours after death. The body was still warm.

An aneurism, fully the size of the closed fist, sprang from the anterior side of the innominate artery at a point a quarter of an inch above the origin of that vessel from the aorta. The innominate artery at its origin was much dilated, measuring $\frac{5}{8}$ ths of an inch in diameter. The aperture in its anterior wall, *i.e.*, the opening of communication between the artery and the aneurismal sac, measured $\frac{3}{8}$ ths of an inch from above downwards. The chief boundaries of the sac were as follows:—In front the manubrium sterni and the sternal ends of the clavicles (both sterno-clavicular articulations were opened into, and the clavicles dislocated forwards); behind, the trachea and œsophagus; laterally, the first ribs and the apices of the lungs; inferiorly, the aneurism was in close contact with, and rested upon, the aortic arch, and had made its way for some distance into the thorax in front of that structure. The walls of the sac were of considerable thickness. The cavity of the aneurism was almost completely filled with laminated fibrine. The aorta was atheromatous. The aortic valves somewhat thickened, but competent. The heart weighed 11 $\frac{3}{4}$ ounces, and was healthy. The lungs were œdematous and congested, and presented the usual appearances seen in acute bronchitis.

Remarks.—The case is chiefly interesting from the somewhat unusual situation of the aneurism—a circumstance which led me to suppose that the sac sprang from the transverse portion of the aortic arch. The position of the sac, immediately in front of the trachea and œsophagus, fully explained the dyspnœa and dysphagia symptoms, which are said to be rare in cases of innominate aneurism.

APPENDIX.

Since the foregoing paper was read, I have met with a case of cystic tumour in the anterior mediastinum simulating aneurism; a case of aneurism simulating solid tumour; and a case of aneurism of the left auricle of the heart. The notes of these cases are as follows:—

Case of Cystic Tumour in the Anterior Mediastinum simulating Aneurism.

A. C., æt. 50, single, a drayman, formerly a soldier, was first admitted to the Newcastle-on-Tyne Infirmary, under my care, on 17th February 1876, suffering from acute albuminuria of three weeks' duration.

Twenty years previously he had suffered from syphilis. For several years past he had been a hard drinker.

On examining the thorax, visible and tangible pulsation was perceived in the second right interspace (see Plate vii. Fig. 1). A slight systolic thrill could be felt when the hand was placed over the same spot, and there was well-marked and limited percussion dulness. A systolic murmur and somewhat accentuated second sound were heard on auscultation. (The thrill, systolic murmur, and accentuation of the second sound were perhaps better marked over the mid sternum at the level of the fourth costal cartilage than over the area of pulsation.)

There were no pressure signs; it was particularly noted that there never had been any pain. Shortness of breath and cough were complained of, but were evidently due to the presence of bronchial catarrh.

The heart was of normal size, the apex being situated an inch immediately below the left nipple.

The diagnosis, as regards the thoracic lesion, was an aneurism of the aortic arch.

On 6th April the patient discharged himself. The urine still contained a trace of albumen, the physical signs at the seat of the supposed aneurism being the same.

On 5th October he was again admitted, suffering from a relapse of the renal dropsy; and after remaining in hospital for a month was again discharged. The thoracic physical signs were still unchanged.

He continued well until September 1877, when he began to suffer from pain in the region of the stomach and from difficulty in swallowing.

On 14th November 1877, he was re-admitted under my care. He was now greatly emaciated, his expression was haggard and anxious, and he presented a remarkably cachectic appearance.

The physical signs within the thorax were as before, except that the apex-beat was somewhat elevated, corresponding to the left nipple.

Pain and tenderness on pressure were complained of in the epigastric region, but no tumour could be perceived. The epigastric pain was increased immediately after taking food. There had been no vomiting. The stomach seemed of normal size. There was marked dysphagia, the stoppage being referred to a point corresponding to the lower end of the sternum.

The right pupil was only half the size of the left. He complained of numbness in the fingers of the right hand.

The urine was copious, pale, sp. gr. 1010. It contained $\frac{1}{8}$ th albumen, and a few granular and hyaline casts.

I now discarded the notion of a true sacculated aneurism in favour of a general dilatation of the aortic arch. This opinion was based upon the continued absence of all pressure signs—especially pain—and the unaltered condition of the physical signs at the seat of pulsation.

On 21st January the patient was seized with a severe epileptiform convulsion, and died twelve hours afterwards.

The autopsy was made sixteen hours after death. The body was much emaciated. A cystic tumour, the size of a hen's egg, was situated in the anterior mediastinum, in immediate contact with the ascending, and the junction of the ascending and transverse portions of the aortic arch. (The specimen was exhibited at the May meeting of the Edinburgh Medico-Chirurgical Society.) The anterior surface of the tumour was partly covered by lung tissue, the uncovered portion being in contact with the chest-wall at a point corresponding to the second right interspace. The cyst contained a clear, watery-looking fluid of neutral reaction, and of sp. gr. 1010. The fluid was almost entirely coagulated by heat and nitric acid. On standing, it deposited a scanty sediment containing a few leucocytes, but no other formed elements.

The aorta was somewhat dilated and atheromatous at its base. The aortic valves were thickened and cartilaginous, but competent.

The heart weighed 13 oz.

The stomach was filled with a huge clot of black blood. A large ragged malignant ulcer surrounded the œsophageal opening. The coats of the stomach were very much thickened at the seat of the ulcer. The orifice of the œsophagus was partly obstructed by the new growth. The kidneys were in an early stage of the large white form of Bright's disease.

Remarks.—In the works at my disposal I cannot find any reference to the occurrence of a simple serous cyst in the anterior mediastinum. The case is obviously, therefore, of great pathological rarity. It is, however, in its clinical aspects that it is chiefly interesting; indeed, I have not, either in reading or in practice,

come across any case in which the direct¹ physical signs of an aortic aneurism were so closely simulated. The pulsation and limited dulness at the "seat of election" of aortic aneurisms resulted, of course, from the presence of the tumour and from the way in which it was related to the aortic arch. The accentuated second sound was due, chiefly, I think, to the increased arterial tension which resulted from the kidney disease, partly, to the dilated condition of the aortic arch. The systolic murmur and thrill were evidently caused by the passage of the blood over the thickened and roughened aortic valve.

Case of Aneurism of the Aorta, Innominate, Left Common Carotid, Right Common Carotid, and Left Subclavian Arteries, simulating Solid Intra-thoracic Tumour.

M. F., æt. 64, a striker, was admitted to the Newcastle-on-Tyne Infirmary under my care on 18th February 1878, suffering from œdema of the face, neck, and upper extremities, and complaining of shortness of breath on the least exertion.

Previous History.—The patient, who had been under my care for some days as an out-patient, stated that he had been through life an unusually strong healthy man. He had neither suffered from rheumatism nor syphilis. His present illness commenced some six weeks previous to admission with shortness of breath on exertion. This was followed by swelling of the face and hands. He had of late occasionally experienced a slight pain under the manubrium sterni and in each shoulder. He had lost flesh, his voice had become "thicker" than it used to be, and there had been some dysphagia.

Condition on Admission.—The patient was extremely dirty, the skin being of a deep brown colour; this was so marked that the case was sent to me as one of Addison's disease. The nipples, genitals, and axillæ, were not specially pigmented. The patient was fairly nourished, though he stated that he had lost flesh. The base of the neck was very much swollen and hard. The face, upper extremities, and upper part of the thoracic wall were œdematous. The superficial veins of the thorax and abdomen were engorged and prominent. (The veins of the head, neck, and upper extremities were also engorged, but were in great part hidden by the œdema.) There was well-marked præcordial vascularity.

The lips were swollen and blue.

The slightest exertion, such as getting out of bed to urinate, caused great shortness of breath. When at rest the breathing was natural. Food seemed to stick at a point corresponding to the manubrium sterni. There was some cough and frothy expectoration.

¹ *I.e.*, the physical signs at the seat of the aneurism, in contra-distinction to the indirect or pressure signs.

The pupils were equal and contracted. The larynx was not examined. The radial pulses were equal both in time and volume. The carotid pulses seemed equal, but the pulsation in these vessels was difficult to feel owing to the brawny œdema of the neck.

The heart was of natural size; its valves healthy; its action weak.

There was well-marked percussion dulness over the manubrium sterni, and on each side of it especially to the left (see Plate vii. Fig. 2). On auscultation, tubular breathing and greatly increased vocal resonance were heard under the right sterno-clavicular articulation. Over the manubrium the breath sounds were indistinct. The heart sounds were very faintly and distantly heard over the same part. Under the left sterno-clavicular articulation, and to the left of it, the breathing was bronchial. Posteriorly, the respiratory murmur was weaker in the right than in the left lung. Bronchial râles were heard here and there over the chest. There was no glandular enlargement. The blood was normal, except that the adhesiveness of the red globules was increased.

Diagnosis.—The diagnosis was an intra-thoracic tumour. It was thought to be solid—

1st. Because of the marked venous engorgement and local œdema.

2d. The absence of any decided pain.

3d. The somewhat extensive character of the dulness.

4th. The tubular breathing and increased vocal resonance under the right clavicle.

5th. The absence of any marked vascular sounds over the dull area.

6th. The non-accentuation of the aortic second sound at the base.

The Treatment consisted in rest in bed and the administration of full doses of iodide of potassium. (I may remark, in passing, that I believe we can, in many doubtful cases, differentiate aneurism and solid tumour by observing the effects produced by this drug. In cases of aneurism there is generally marked improvement, in cases of tumour, lymphosarcomata, and carcinomata, the effect, so far as my experience goes, is *nil*.)

Progress of the Case.—On 27th February the patient was decidedly better, the œdema was disappearing.

On 6th March, the œdema having almost gone, the thorax was again carefully examined, and important alterations were observed. The heart's action was considerably stronger than before. Well-marked pulsation could be felt in the supra-sternal notch over the manubrium sterni, the heart sounds could be distinctly heard, and they presented that toneless superficial character which is rightly considered so characteristic of an aneurism. The radial pulses were equal both in time and volume. A sphygmographic tracing showed nothing of importance, the only difference being that the percussion stroke was slightly shorter in the right than in the left.

(See Plate vii. Figs. 3 and 4.) (This is a point of some importance, for a good-sized aneurism of the innominate was found after death. The case does not, however, disprove Dr Mahomed's observations as to the diagnosis of innominate aneurism by means of the sphygmograph, for the sac of the aneurism was so filled with coagulum that the normal diameter of the blood channel was accurately preserved.)

On 8th March the patient was worse; the œdema had returned. At the time of my visit he was seized with a severe rigor, during which the temperature rose to $105^{\circ}2$ F.

On 9th March he spat up some muco-purulent matter mixed with blood. The base of the neck was very hard and brawny, and the skin had a red, erythematous appearance.

On 10th March he died.

The post-mortem was made twenty-seven hours after death. The base of the neck was much swollen and infiltrated with serum containing leucocytes.

The aorta, from its origin to the termination of the transverse portion of the aortic arch, was very much dilated and atheromatous. (Specimen exhibited at May meeting of Edinburgh Medico-Chirurgical Society.) A sacculated aneurism, the size of a small cherry, projected from the anterior surface of the aortic arch. This small aneurism, to the outer surface of which the lung was firmly adherent, was completely filled with firm decolorised clot. The base of the clot was level with the internal surface of the aortic arch.

The innominate artery was irregularly dilated to the size of a bantam's egg. The vessel, at its origin and at its termination, was of normal calibre. The sac of the aneurism pressed upon and was adherent to the trachea.

The left common carotid artery, immediately after arising from the aortic arch, was uniformly dilated to the size of a damson.

The right common carotid, immediately above its origin from the innominate, was dilated to the size of a small cherry.

The left subclavian, immediately above its origin from the aorta, was slightly dilated.

Firm coagula channelled in their centres filled the aneurisms of the innominate, left common carotid, right common carotid, and left subclavian arteries. The canals in the coagula exactly corresponded in their calibre to the normal size of these vessels.

The superior vena cava was pressed upon and greatly obstructed by the dilated arch.

The heart was normal, its weight 10 oz.

The other arteries throughout the body were natural.

Both lungs were adherent at their apices. The upper lobe of the left lung was in places consolidated owing to the deposit of small masses of black pigment. The trachea and bronchi were inflamed.

The other organs were normal.

The cause of the aneurismal dilatation of the arch and its branches was not ascertained.

Remarks.—After what I have already said, it is unnecessary to refer at greater length to the close manner in which this case simulated a solid intra-thoracic tumour. I pass on therefore to my last case, which is chiefly of pathological interest.

Case of Aneurism of the Left Auricle of the Heart.

J. L., æt. 47, married, an engineer, formerly a soldier, was admitted to the Newcastle-on-Tyne Infirmary, under my care, on 2d November 1876, complaining of shortness of breath, pain in the region of the heart, palpitation, and oedema of the feet.

He had had two attacks of rheumatic fever, had suffered from syphilis, and had drunk whisky to excess.

He was thin and sallow, the face presenting more the appearance of an aortic than of a mitral case.

The left ventricle was somewhat hypertrophied, the apex being situated an inch below, and slightly outside the left nipple. In addition to a soft systolic aortic murmur, and an accentuated second aortic sound, there was a well-marked and independent systolic murmur at the apex. The pulse numbered 68, was regular, and presented in some degree the visible jerking collapsing appearance which is so characteristic of aortic regurgitation.

The urine presented the usual characters seen in cases of the small red granular kidney, being copious, pale, of low specific gravity, and containing only a trace of albumen, and few casts.

The patient remained several weeks under treatment, and was then discharged greatly relieved. A faint diastolic aortic murmur had become audible during his stay in hospital. He continued to attend from time to time as an out-patient, until November 1877, when all his symptoms became greatly aggravated. He was re-admitted under my care and died on 28th January, with all the usual symptoms of advanced mitral disease.

The post-mortem was made twenty-four hours after death. The heart was hypertrophied, weighing 19 oz. In the cavity of the left auricle there was an aneurism fully the size of a large plum. (See Plate viii.) (Specimen shown to Edinburgh Medico-Chirurgical Society on 1st May.) The cavity of the aneurism, which was partly filled with laminated fibrine, communicated with both chambers of the left heart, the posterior segment of the mitral valve being inserted as it were between the two orifices. The mitral valve itself was normal. The aortic segments were thickened and slightly incompetent. The kidneys were good examples of the small contracted form.

TABULAR STATEMENT OF DR BYROM BRAMWELL'S CASES OF ANEURISM.

No. of case and initials of Patient.	Age.	Sex.	Occupation.	Supposed Cause.	History of Syphilis.	Date of First Symptoms.	Complaints.	Physical Signs at the Seat of the Aneurism.	Pressure Signs.	Condition of the Heart.	Complications.	Treatment.	Progress of Case.	Result.	Days in Hospital.	Mode of Death.	Remarks, Postmortem, etc.
1. P. D.	40	M	Fitman.	Unknown.	Yes, 9 years before admission.	29 months before admission.	1. Pain in right breast, shoulder, back, and arm. 2. Beating in right breast and palpitation. 3. Shortness of breath on exertion. 4. Cough.	<i>Inspection</i> .—Pulsating prominence between 2 and 3 right costal cartilages. <i>Palpation</i> .—Double impulse and systolic thrill over prominence. Tenderness on pressure over prominence and between right scapula and spine. <i>Percussion</i> .—Absolute dullness over prominence; impaired percussion over inner half of right infra-clavicular region and over manubrium sterni. <i>Auscultation</i> .—Double sound and systolic murmur over aneurism.	1. Pain, generally constant and confined to position of aneurism; at times paroxysmal, shooting down right arm to fingers. 2. Inequality of pupils, the right sometimes smaller, sometimes larger, than left. Unilateral sweating. 3. Hoarseness of voice. 4. Slight dysphagia. 5. Cough.	Considerable hypertrophy. Systolic apex murmur. A contracted, pulsant ary second sound.	Dry. Pericarditis. Unilateral sweating.	Pot. lod. dr. i t. d. Feb. 8.—Tr. Digitalis. Feb. 17.—Better, friction gone, continuous improvement after this date. On his discharge, April 28, prominence almost gone, free from pain, dysphagia, and cough.	R 106			Speedy relief from pain. Worse on Feb. 8. Dry pericarditis Feb. 17.—Better, friction gone, continuous improvement after this date. On his discharge, April 28, prominence almost gone, free from pain, dysphagia, and cough.	
2. J. S.	36	M	Striker, formerly Soldier.	Unknown.	Yes, 10 years before admission.	3 years.	1. Pain in chest and right shoulder. 2. Cough. 3. Dyspnoea. 4. Inability to sleep.	<i>Inspection</i> .—Very large pulsating tumour, situated midway between nipples. <i>Palpation</i> .—Double impulse in tumour, which is soft and liquid feeling. <i>Percussion</i> .—Absolute dullness over the tumour and around it, over an extensive area. <i>Auscultation</i> .—Double sound, but no murmur, over the tumour.	1. Pain. 2. Cough. 3. Oedema of right arm. 4. Pulse in right wrist much stronger than in left.	Considerable hypertrophy. Double aortic murmur.	None.	Opiates.	D		External rupture.	Large aneurism springing from very base of aorta. Large perforation of sternum. Large external sac.	
3. H. P.	42	M	Labourer.	Unknown. (Strain?)	No.	6 months.	1. Severe pain, at times agonizing. 2. Beating in chest. 3. Shortness of breath. 4. Inability to sleep.	<i>Inspection</i> .—Pulsating prominence, size of an egg, between 1 and 3 right costal cartilages. <i>Palpation</i> .—Strong single impulse in tumour, which is soft and liquid feeling. <i>Percussion</i> .—Extensive dullness. <i>Auscultation</i> .—Loud double murmur, diastolic portion musical.	1. Pain. 2. Diminution of respiratory murmur in the right lung.	Natural size. Double aortic murmur, diastolic portion less loud than over the tumour.	None.	Pot. lod. dr. i t. d.	R 78			Continuous improvement. On discharge, April 4, he felt quite well; prominence much less marked. He returned 19 months afterwards, having worked in the interval, the tumour increasing, heart hypertrophied.	
4. J. F.	54	M	Labourer.	Unknown.	No.	5 months.	1. Dyspnoea. 2. Paroxysmal cough. 3. Slight dysphagia. 4. Numbness and weakness in right arm.	<i>Inspection</i> .—Left brachio-epiphic and external jugular veins distended. <i>Percussion</i> .—Dullness over manubrium sterni, and to the left of it (3 X 4 inches). <i>Auscultation</i> .—Blowing systolic murmur over dull area, in left supra scapular fossa, and in left subclavian artery.	1. Obliteration of right radial pulse. 2. Respiratory murmur weaker in left than right lung. 3. Paroxysmal clanging cough. 4. Dysphagia. 5. Left pupil larger than right.	Natural size. Soft bellows murmur at base, accentuation of aortic second sound.	None.	1. Pot. lod. dr. i t. d. 2. Sept. 13.—Mist. Quinine co.	R 80			Improved and discharged on July 8. Shortness of breath less, cough and dysphagia gone. Re-admitted worse, July 22. Discharged Sept. 28, very much better. Seen on Jan. 10, working regularly, still keeping well.	
5. P. M.	41	M	Marine store dealer, formerly Sailor.	Unknown.	Yes, 18 years before admission.	3 years.	1. Constant agonizing pain in back. 2. Sleeplessness. 3. Emaciation and extreme debility. 4. Constipation.	<i>Palpation</i> .—Pulses, hardness, and pulsation in pit of epigastrium, no defined tumour even under chloroform. <i>Percussion</i> .—Dullness in epigastrium and posteriorly over lower part of right chest. <i>Auscultation</i> .—Loud systolic murmur in epigastrium not audible posteriorly.	1. Pain. 2. Constipation. 3. Puncture of thigh on abdomen.	Natural size. Sounds short and valvular at apex. Pulmonary sounds accentuated.	None.	Pot. lod. or. i, five times daily. Subcutaneous injection for first three days.	R 35		Rupture into left pleura.	Large aneurism of lower thoracic and upper abdominal aorta; 8th and 9th dorsal vertebrae eroded; mitral valve much contracted, owing to calcareous deposits.	
6. *	33	M	Merchant.	Unknown.	Not noted.	1 year.	1. Pain in back and left hip.	When first seen, no physical signs. Dec. 15, 1851.—Pulsating tumour, size of half a small apple, detected to left of lumbar vertebrae. Systolic murmur in tumour, which rapidly increased in size, and almost filled the abdomen.	1. Pain.	Not noted.	None.	Opiates.	D		Rupture through bed sore.	Immense quantity of laminated clot, weighing 14 lbs., in abdomen. Aneurism, size of fist, springing from aorta close to coeliac axis. It had ruptured into retro-peritoneal tissue. Left kidney flattened out and atrophied.	
7. W. F.	38	M	Sailor.	Unknown.	Yes, 9 years previously admission.	5 years before admission.	1. Pulsating tumour in abdomen. 2. Syphilitic rheumatism.	Large irregular pulsating tumour in abdomen. Systolic murmur in tumour, which is very hard.	None.	Normal, but weak.	Rheumatism.	Pot. lod. dr. i t. d.	E			Aneurism partly cured by rapid pressure method, in Liverpool Royal Infirmary, two years previously.	
8. M. M.	37	F	Washer-woman.	Unknown.	No.	2 months.	1. Constant and severe pain in right breast and shoulder. 2. Heavy beating in chest. 3. Cough. 4. Dysphagia.	<i>Inspection</i> .—Pulsating tumour, size of hen's egg, between 2 and 3 right costal cartilages. Slight prominence between right scapula and spine. <i>Palpation</i> .—Double impulse over tumour, which is very soft and liquid feeling. <i>Percussion</i> .—Impaired from clavicle to second rib. Absolute dullness from 2 to 4 ribs; transverse, from middle of sternum outwards, 2 inches; impaired over manubrium, and in right scapular and upper part of spinal regions. <i>Auscultation</i> .—Double muffled sound over aneurism, but no murmur.	1. Pain. 2. Dysphagia. 3. Inequality of pupils, with diminished intensity of respiratory murmur in right lung; cough. 4. Prominence of right external jugular vein.	Normal size. Aortic second sound accentuated.	Slight bronchitis.	Pot. lod. dr. i t. d.	R 40			Pain relieved after four days. On discharge, prominence less, though still very liquid feeling. Cough and dysphagia gone.	
9. J. W.	35	M	Labourer.	Unknown.	Yes.	15 months.	1. Pain in back. 2. Numbness and coldness in lower extremities. 3. Beating in chest. 4. Headache, giddiness, shortness of breath.	<i>Inspection</i> .—Circular elevation in abdominal wall, beautifully visible. <i>Palpation</i> .—Strong heaving pulsation in epigastrium; no pulsation in lower part of abdominal aorta, nor in femoral. <i>Auscultation</i> .—Loud systolic murmur in epigastrium and behind 2 inches to right of last dorsal vertebra.	1. Pain in back.	Hypertrophy. Double aortic murmur.	Attack of submucous while in hospital. Aortic regurgitation and cardiac hypertrophy.	Pot. lod. dr. i t. d. 43.	D 244		Cardiac syncope.	Aneurism size of an egg at point of origin of superior mesenteric; complete occlusion of abdominal aorta below aneurism. Aortic valves incompetent. Weight of heart, 1 lb. 15 oz. Cicatrix in right kidney and occlusion of renal artery.	
10. H.	37	M	Sailor.	Unknown.	No.	3 years.	1. Pain in chest, and at root of neck. 2. Dyspnoea. 3. Cough. 4. Dysphagia.	<i>Inspection</i> .—Pulsating prominence at root of neck, left clavicle pushed forwards. Prominence more marked on left than on right of sternum. <i>Percussion</i> .—Dullness over manubrium and on each side of it, especially to left. <i>Auscultation</i> .—Double sound, but no murmur.	1. Pain. 2. Dyspnoea and stridor. 3. Dysphagia. 4. Cough. 5. Swelling at root of neck and distension of veins. 6. Dislocation of clavicles.	Normal.	Bronchitis.	1. Stimulants. 2. Expectorants. 3. Pot. lod. 4. Ice over tumour.	D 8		Exhaustion, and oedema of lungs.	Aneurism larger than fist, from middle of innominate artery, extending behind sternum and to left, dislocating both clavicles. Heart normal.	

* Patient of Dr Cargill's.

† D. died. R. relieved.

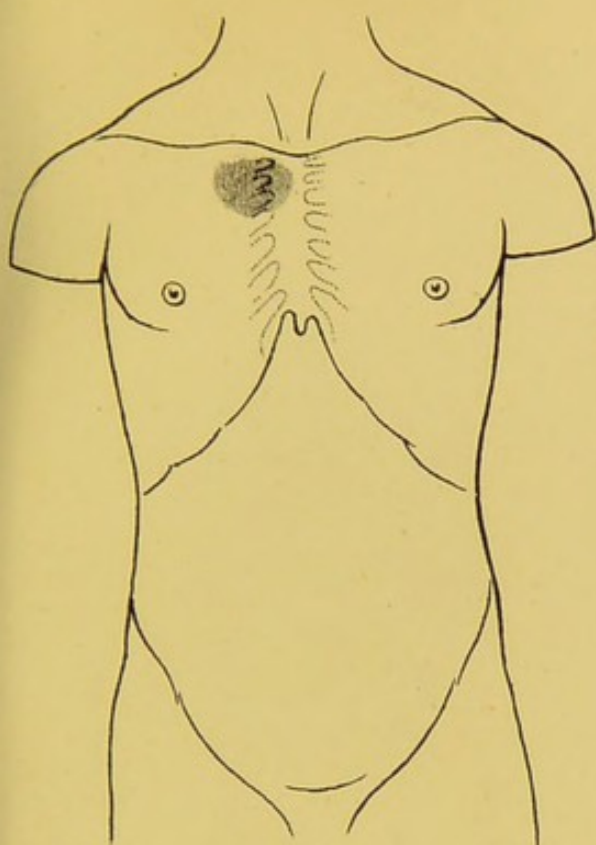


FIG. 1.—Front view of Thorax and Abdomen in case of P. D., showing extent and position of the percussion dulness.

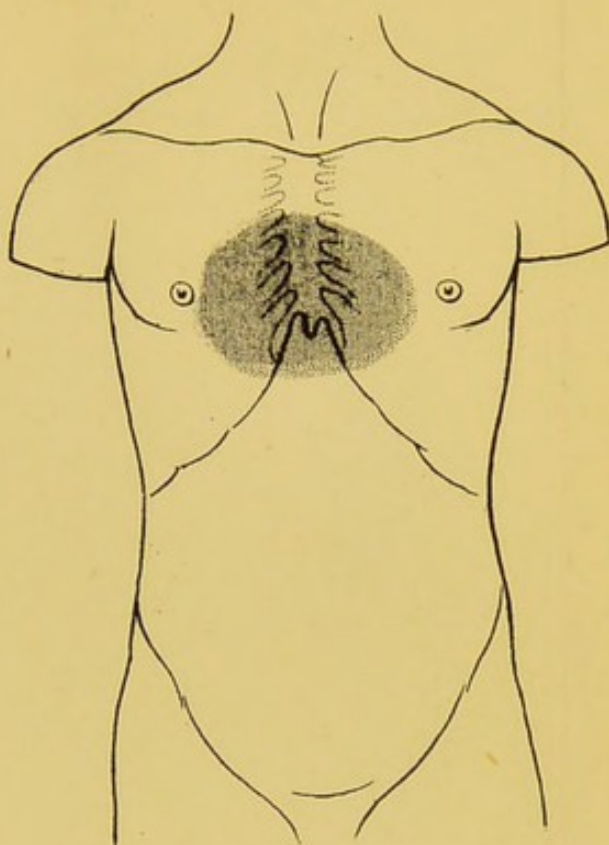


FIG. 2.—Front view of Thorax and Abdomen in case of J. S., showing extent of the base of the tumour before death.

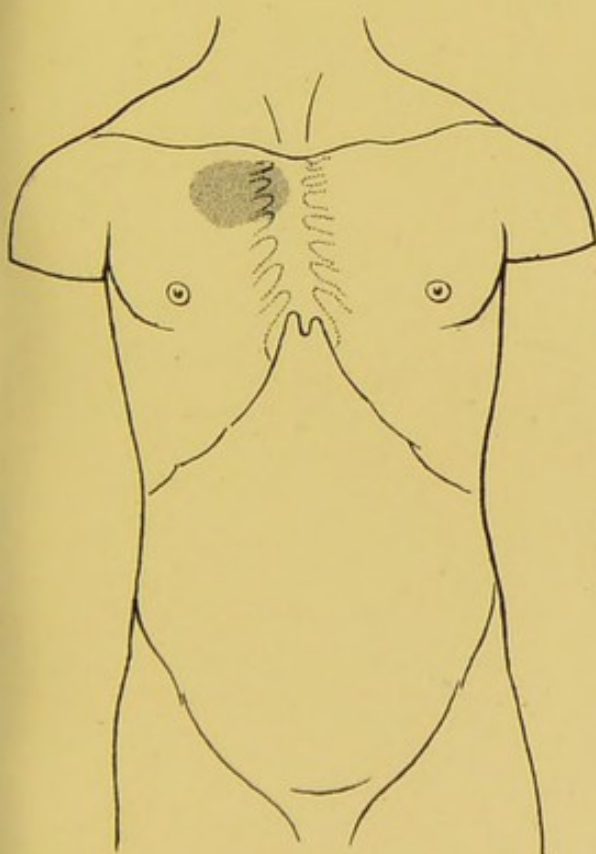


FIG. 3.—Front view of Thorax and Abdomen in case of H. P., showing position and extent of absolute dulness.

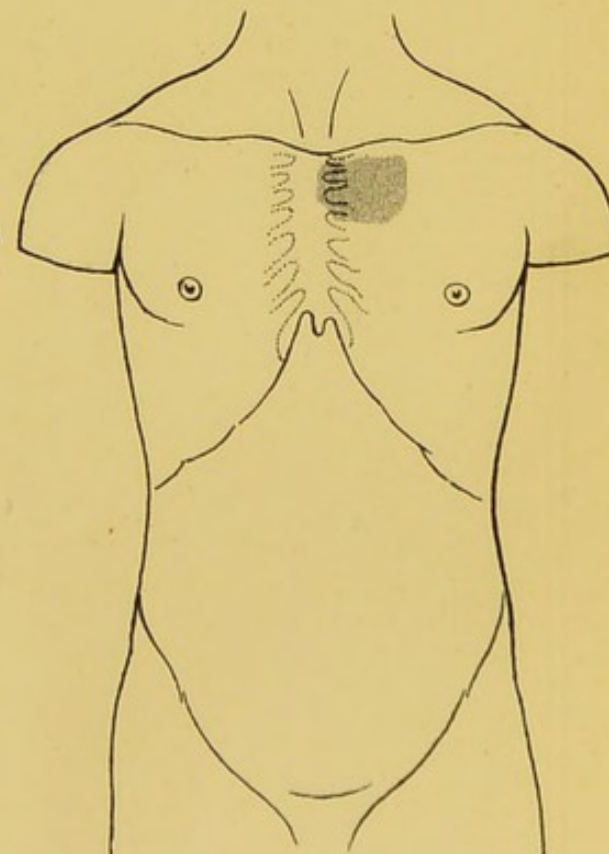
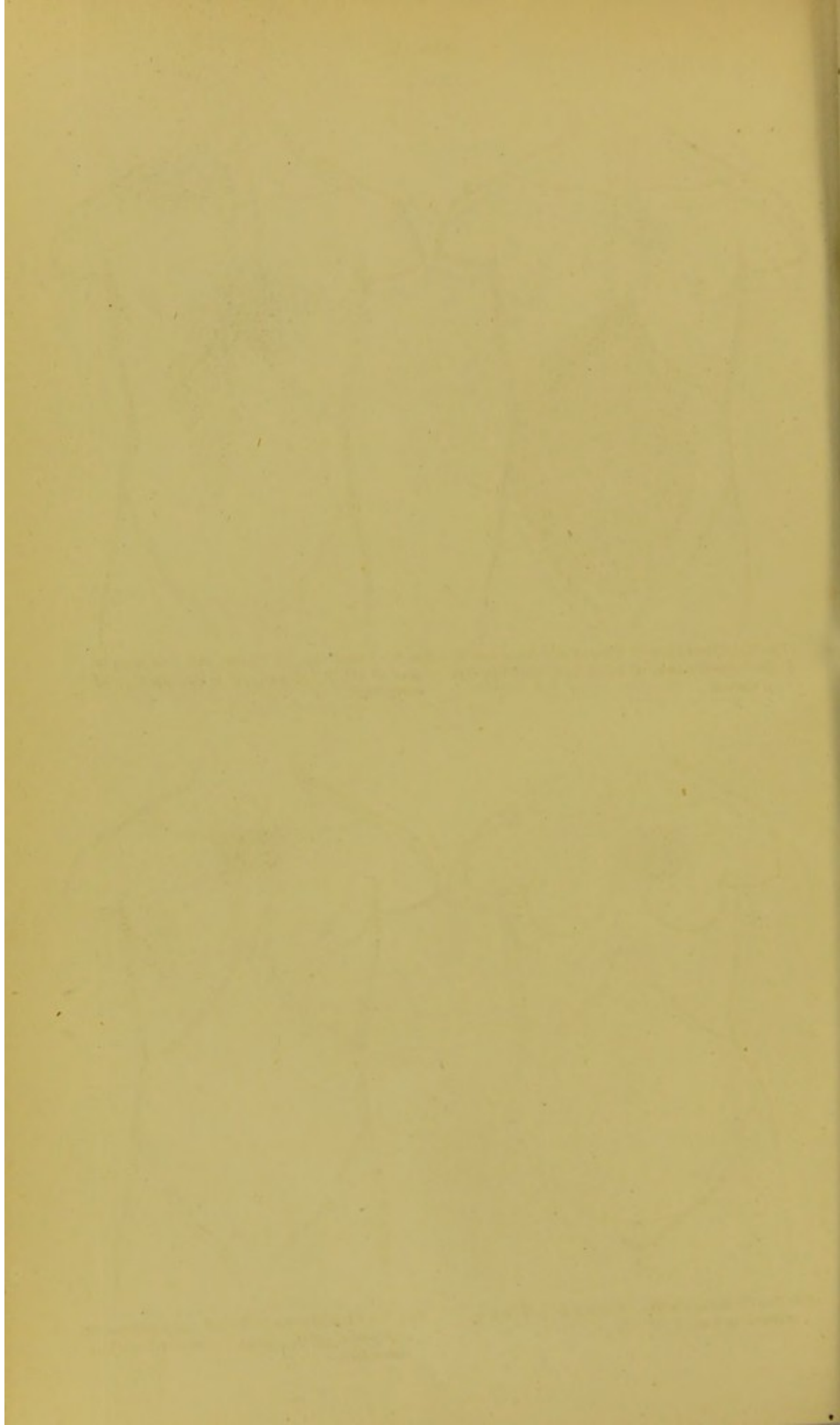


FIG. 4.—Front view of the Thorax and Abdomen in the case of J. F., showing the position and extent of dulness.



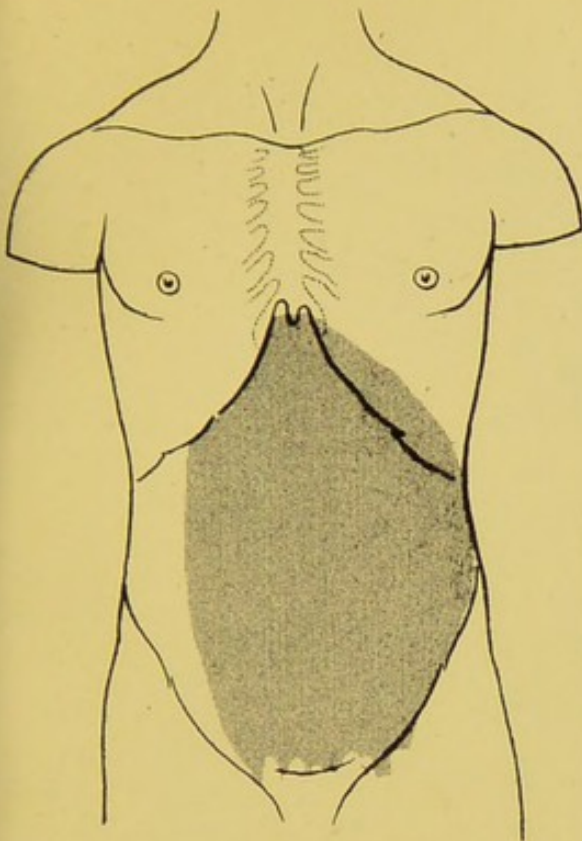


FIG. 5.—Front view of Thorax and Abdomen in Dr Cargill's case of Aneurism, showing size of tumour.

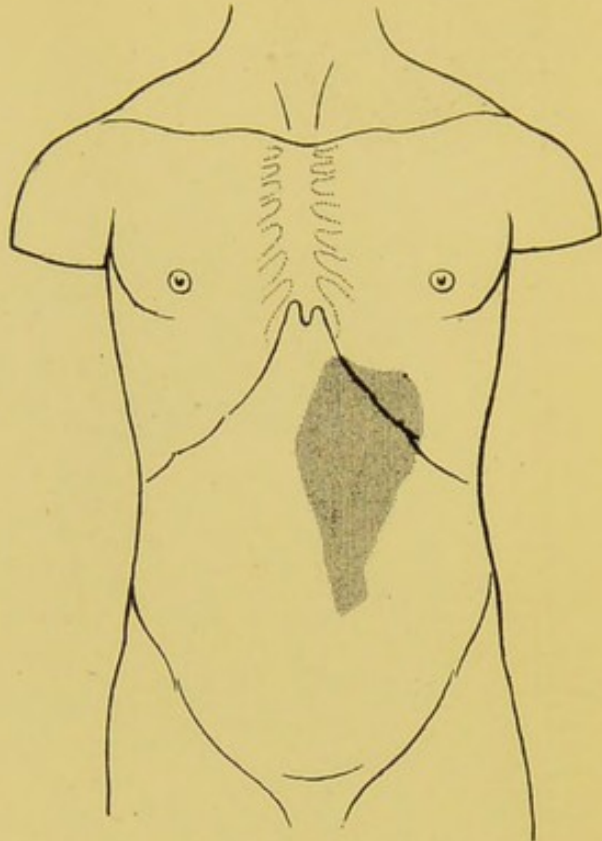


FIG. 6.—Front view of Thorax and Abdomen in case of W. P., showing size and position of aneurism.

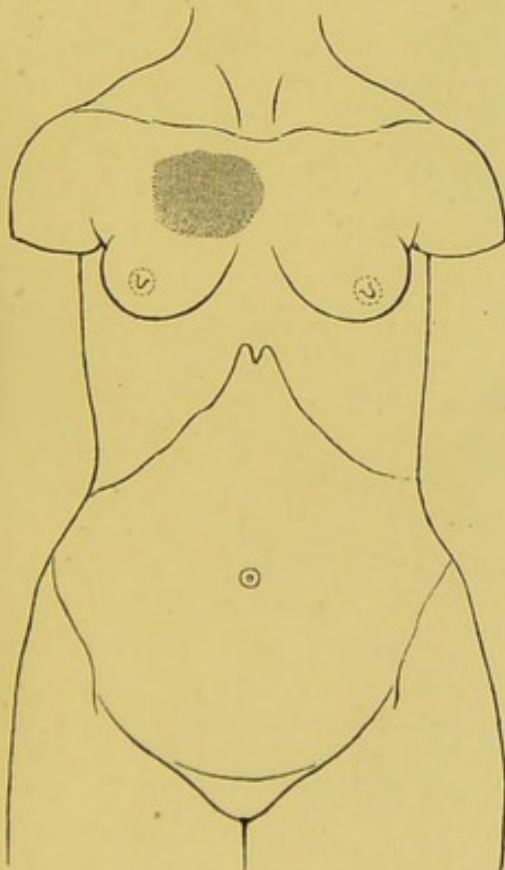


FIG. 7.—Showing outline of absolute percussion dulness in case of W. W.

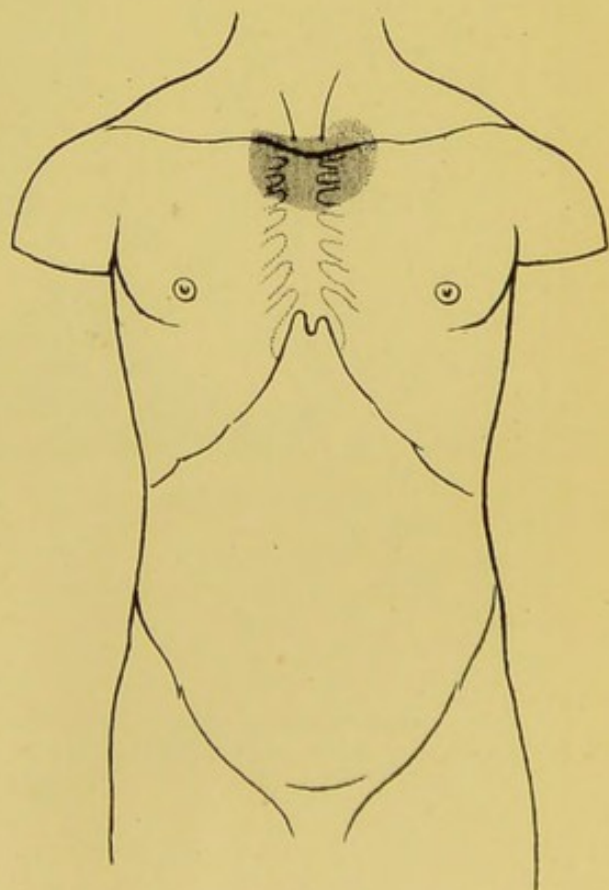
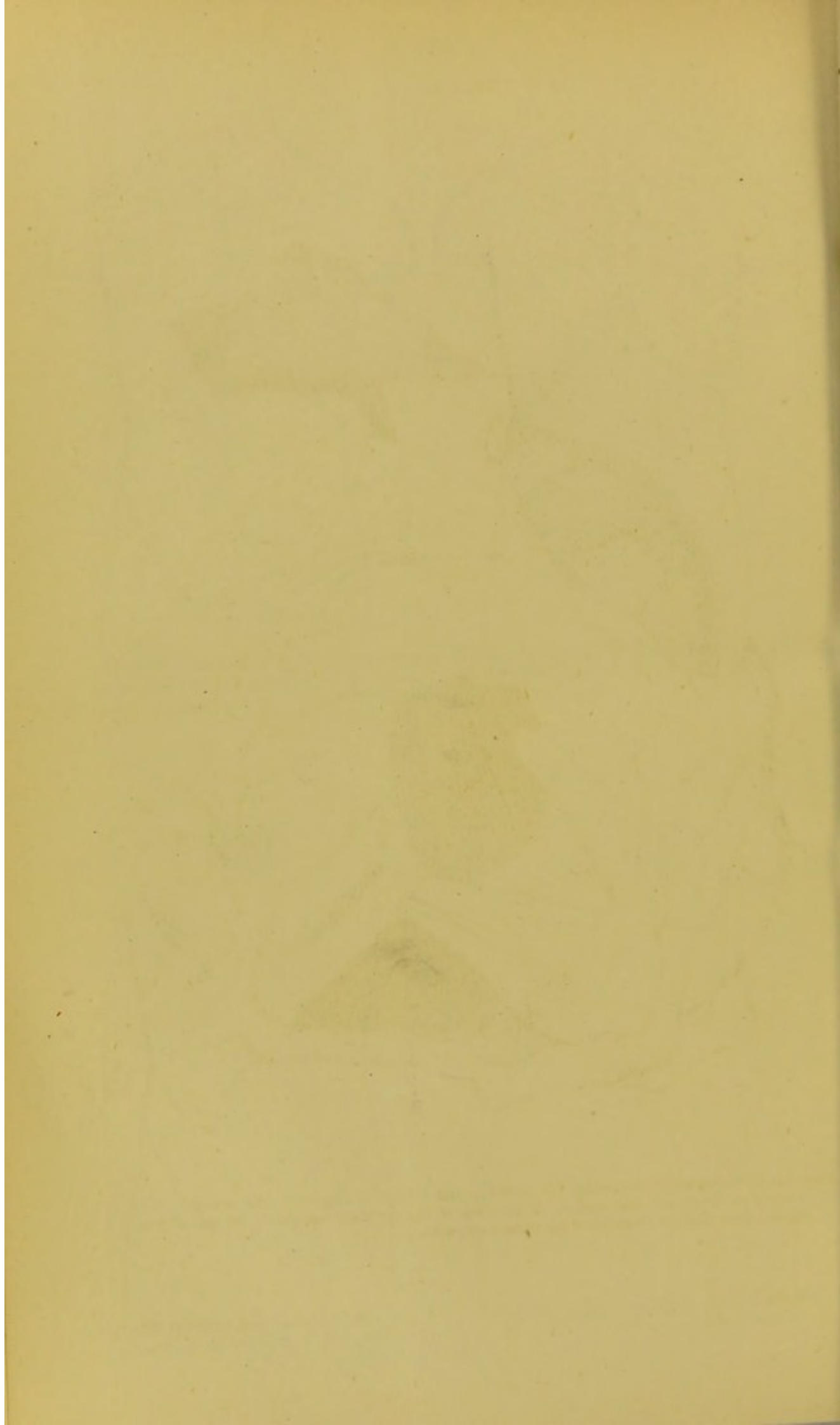
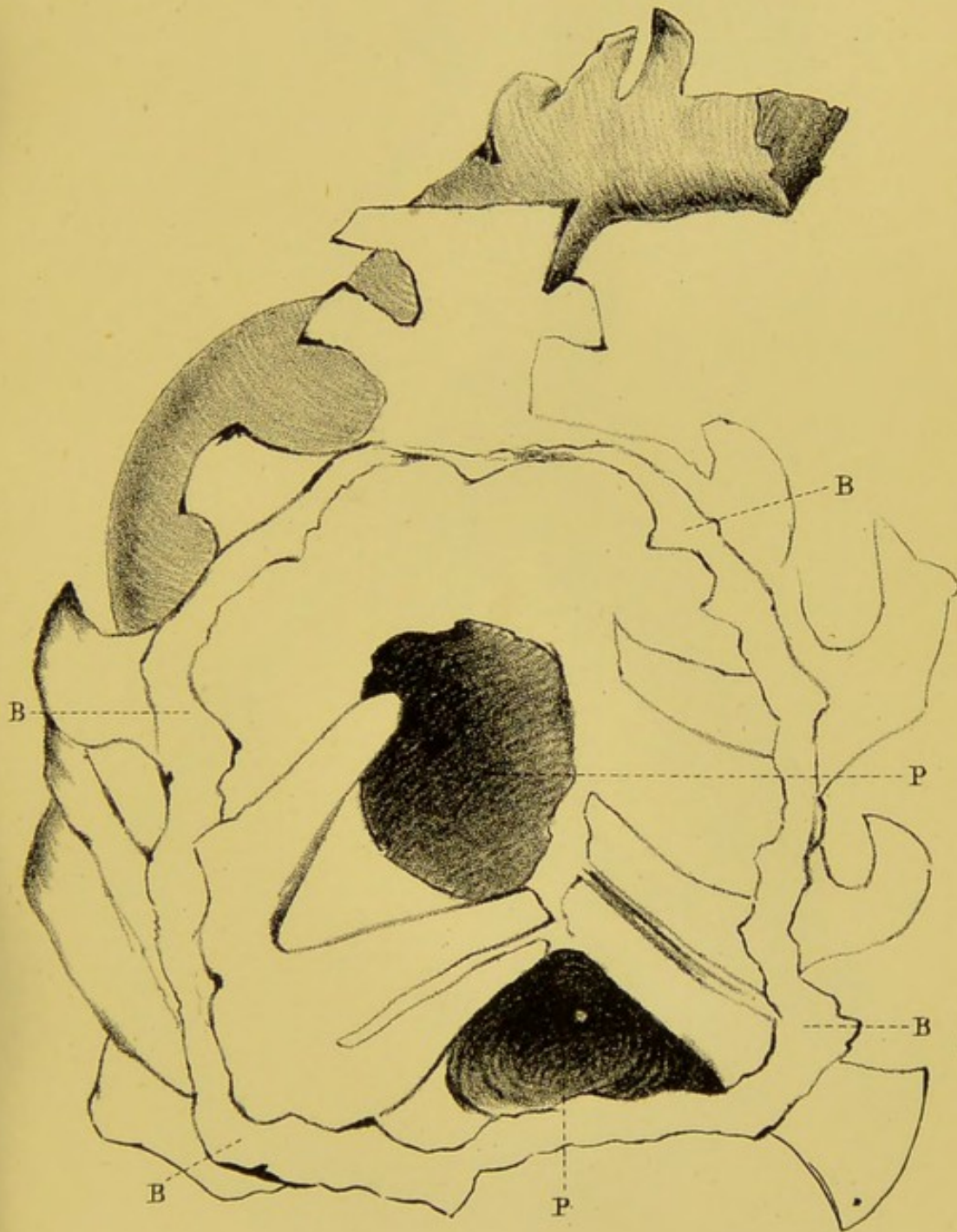
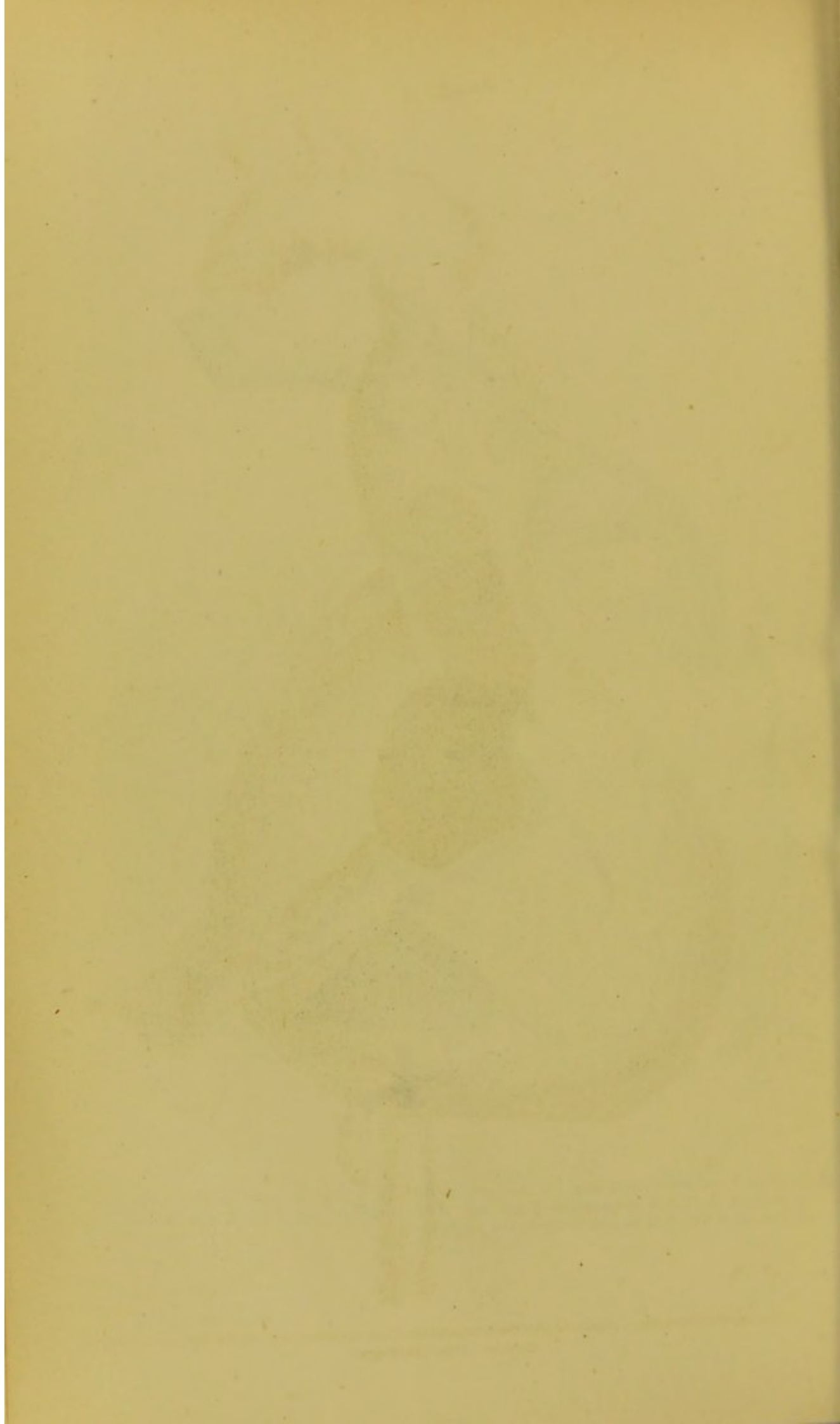


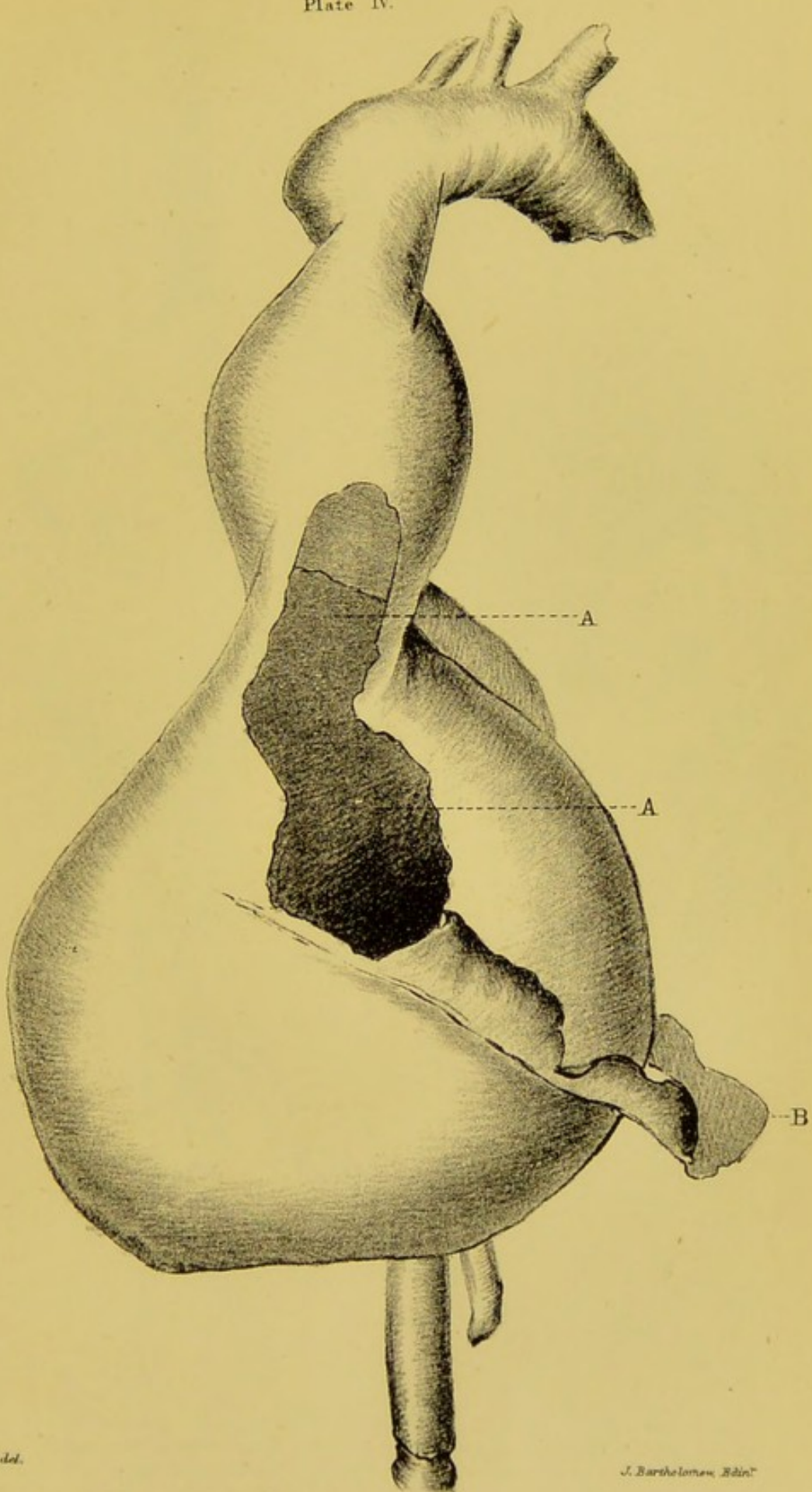
FIG. 8.—Front view of Thorax and Abdomen in the case of G. P., showing the position of the aneurism.





Aneurism of Aorta which perforated the sternum, and formed a large external tumour. The perforation, P P, and the outlines of the base of the external tumour, B B, are shown. (Rather more than half the size of the dried preparation.)





Back view of Specimen. (Half size of dried preparation.) A = point where aneurism was adherent to spine. B = diaphragm.

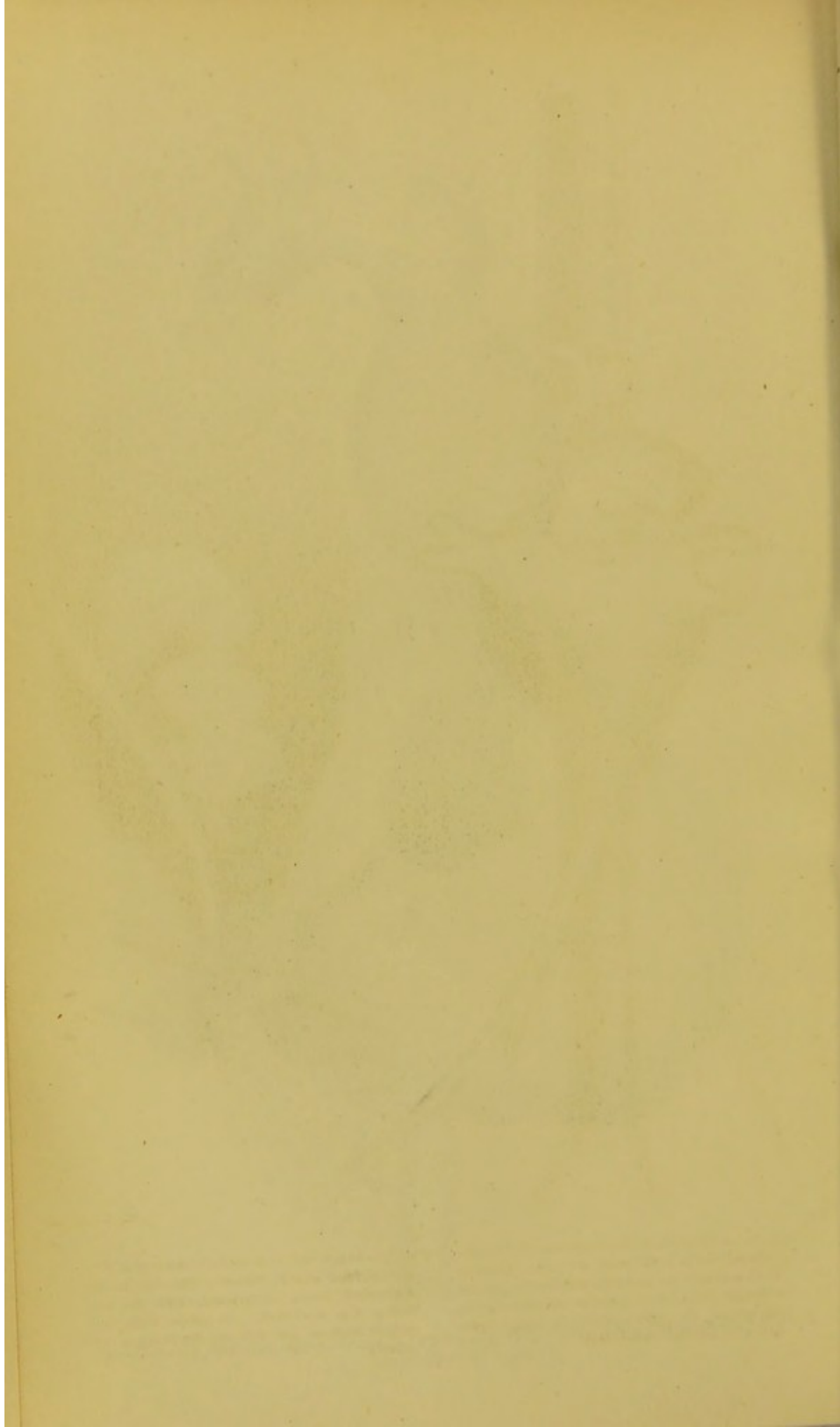


Fig 1.

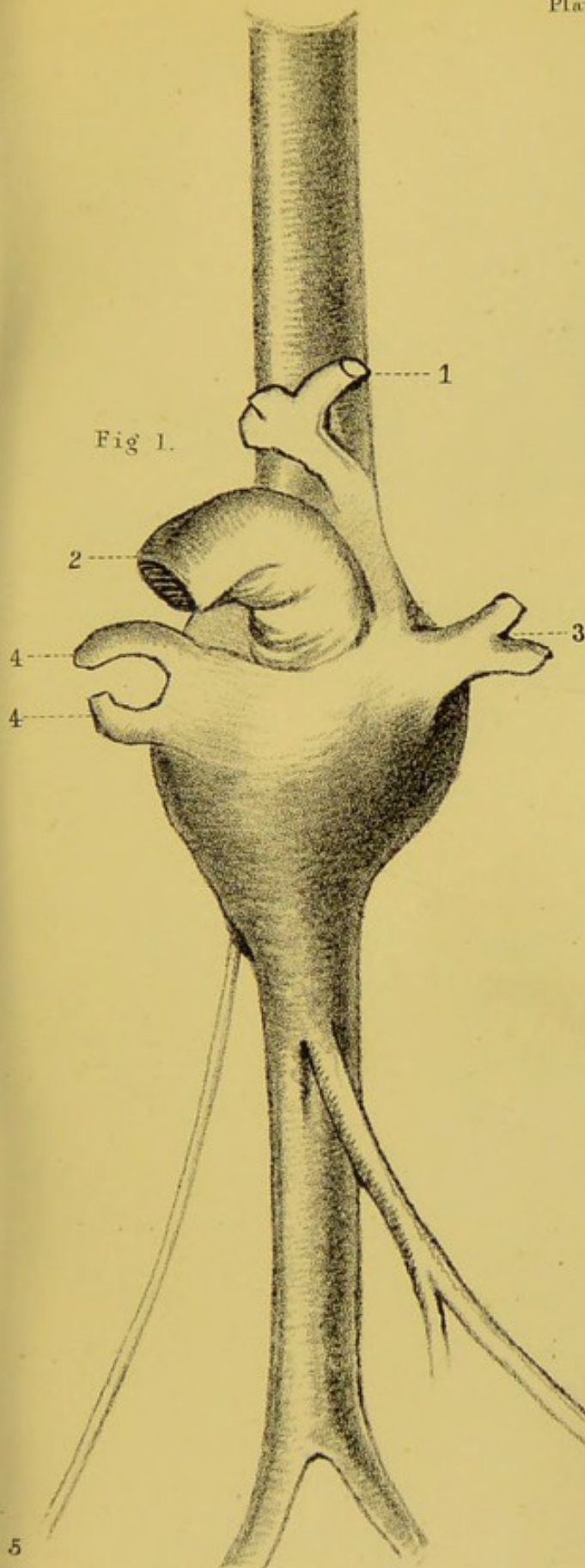


Fig 2.

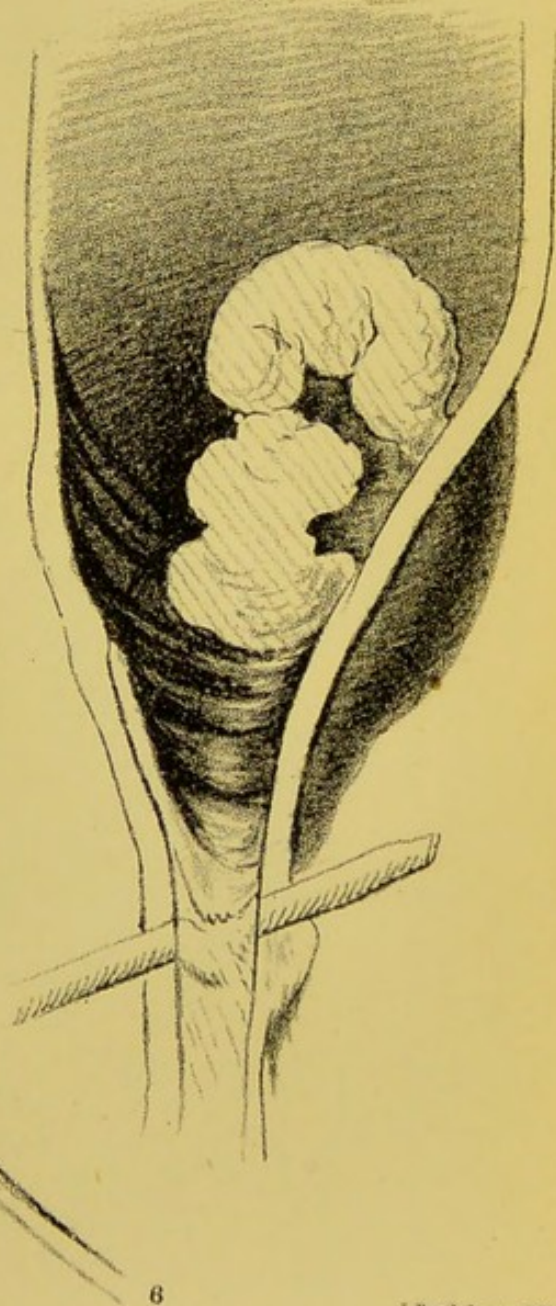


FIG. 1.—A front view of Aneurism of the Abdominal Aorta in the case of T. W. (Drawn the same size as the preparation.) 1 points to celiac axis; 2 to superior mesenteric; 3, left renal; 4, right renal; 5, right spermatic; 6, inferior mesenteric.

FIG. 2.—Artery and Aneurism in case of J. W. opened from behind, showing the clot in the abdominal aorta, continuous with the clot lining the aneurism. A probe has been placed between the clot and the walls of the vessel.

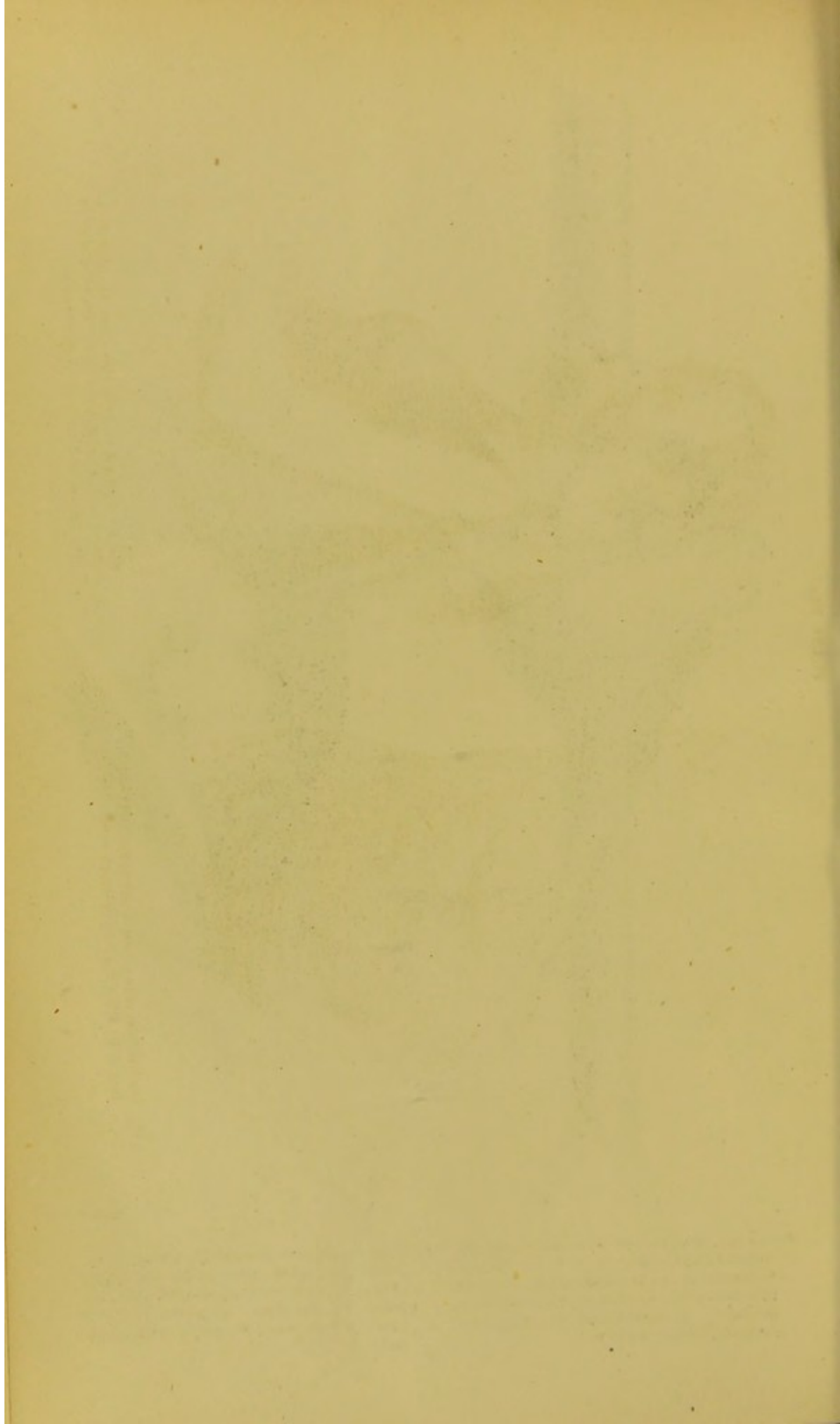




FIG. 1.—Drawing of the front of the abdomen in the case of H. M'L., showing enlarged veins.



FIG. 2.—Portrait of J. S. (see Case II., page 877), showing the position and size of the tumour when the patient first came under observation.



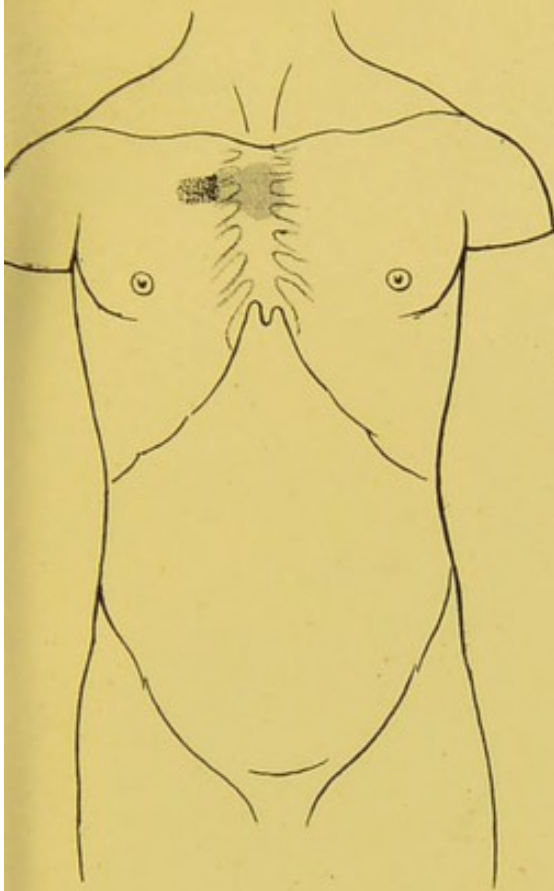


FIG. 1.—Front view of Thorax and Abdomen in case of A. C., showing area of visible pulsation and dulness. The area of pulsation is shaded dark.

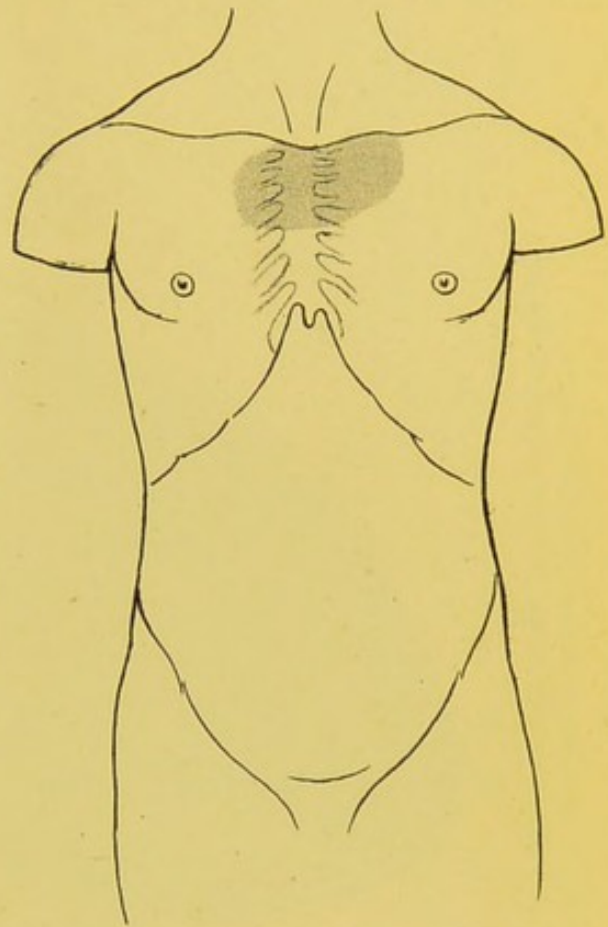


FIG. 2.—Front View of Thorax and Abdomen in case of M. F., showing area of dulness.

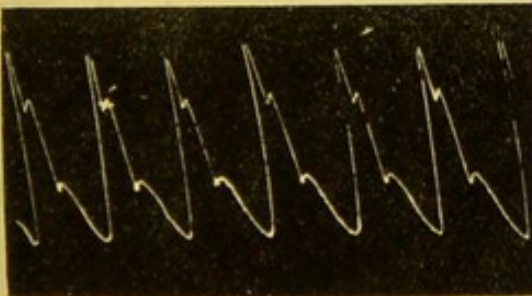


FIG. 3.—Sphygmographic tracing of Right Radial in case of M. F. Pressure = 3 oz.

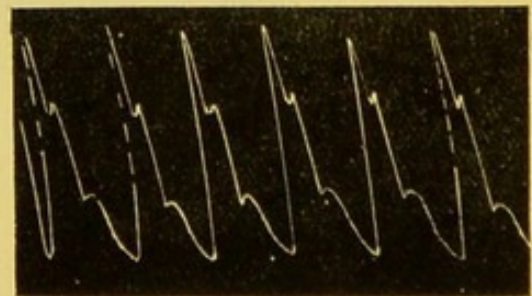
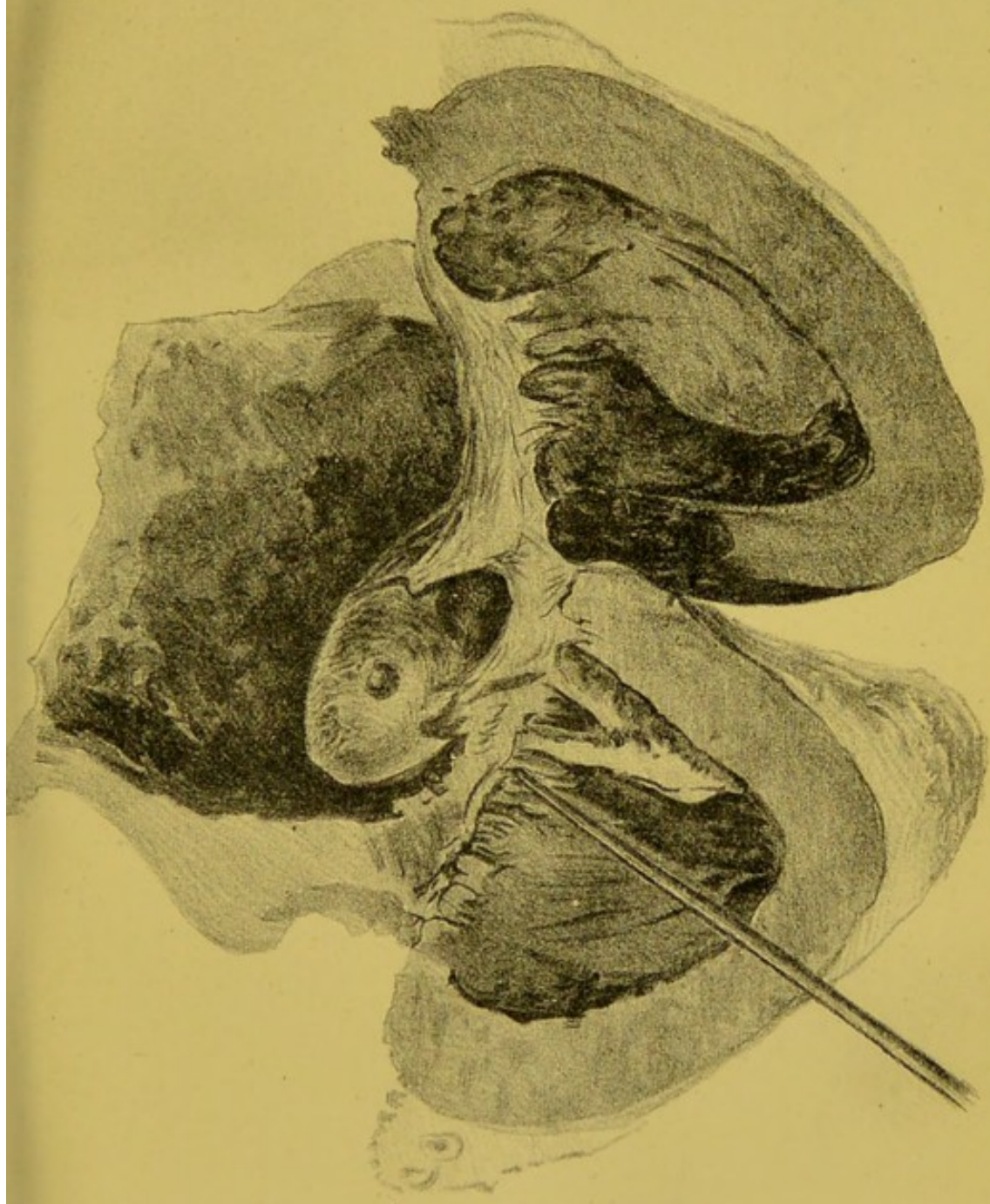


FIG. 4.—Sphygmographic tracing of Left Radial in case of M. F. Pressure = 3 oz.





Rough drawing of the Left Heart, showing the Aneurism in the cavity of the left auricle. A probe has been passed from the cavity of the ventricle into the cavity of the aneurism. The mitral segments have been separated.

