

A case of axillary aneurysm : ligature of subclavian artery, recovery, development of acute mania, subsequent death from pulmonary haemorrhage / by Henry Rundle.

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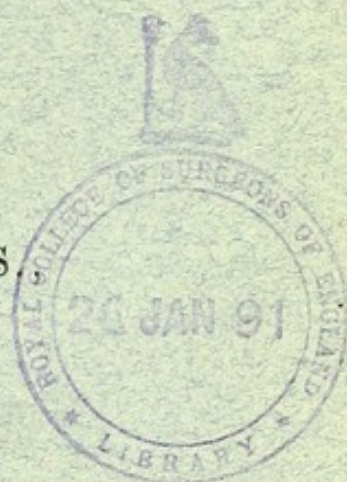
A CASE OF
AXILLARY ANEURYSM.

LIGATURE OF SUBCLAVIAN ARTERY—RECOVERY—
DEVELOPMENT OF ACUTE MANIA—SUBSEQUENT DEATH
FROM PULMONARY HÆMORRHAGE.

(17)

BY
HENRY RUNDLE, F.R.C.S.,

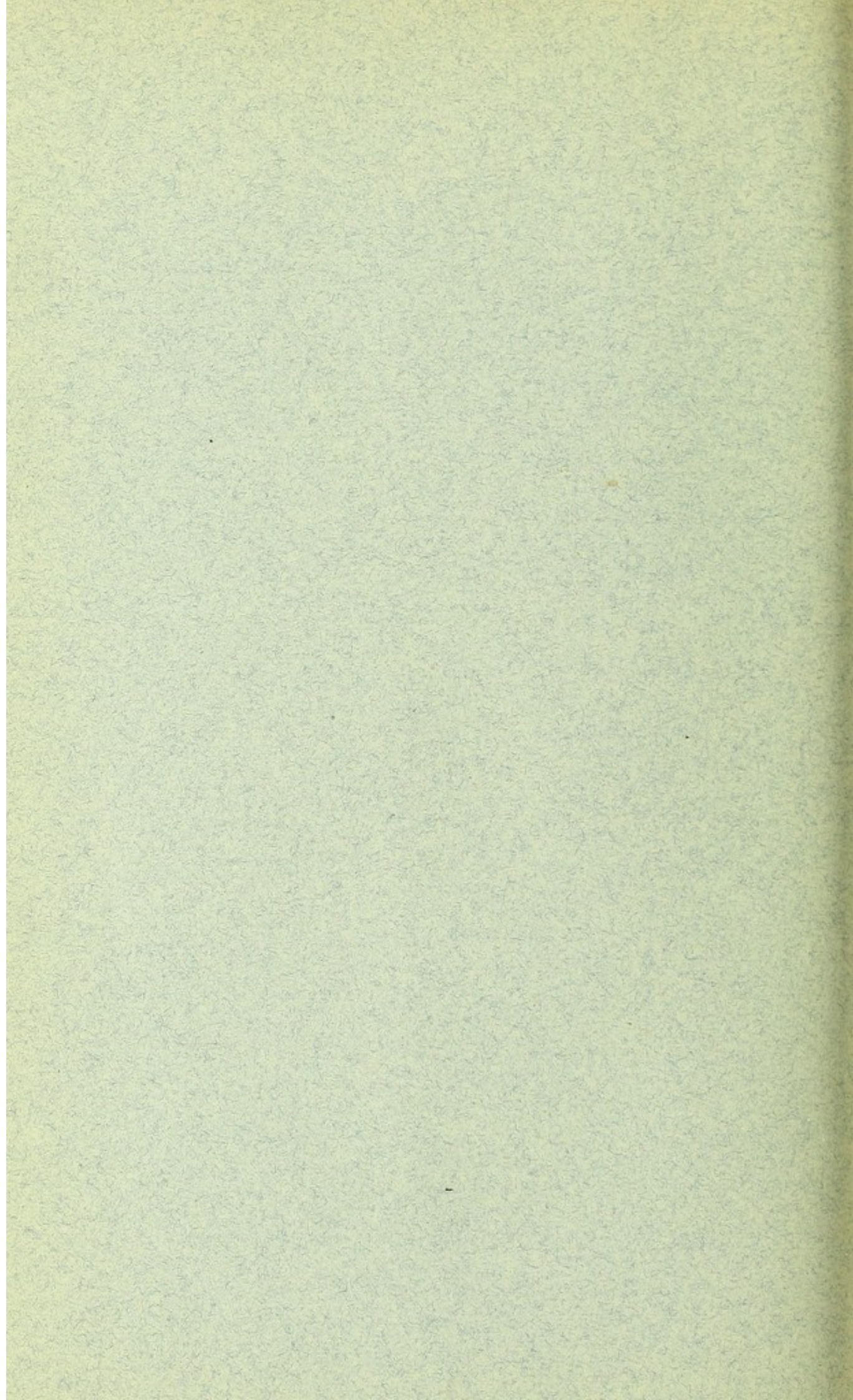
Surgeon to the Portsmouth Royal Hospital.

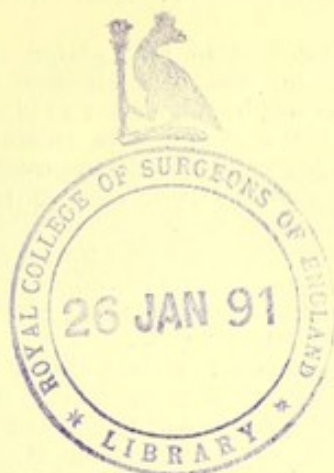


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PORTSMOUTH ROYAL HOSPITAL.

A CASE OF AXILLARY ANEURYSM—LIGATURE OF SUBCLAVIAN—
RECOVERY—DEVELOPMENT OF ACUTE MANIA—SUBSEQUENT
DEATH FROM PULMONARY HÆMORRHAGE.

T. B., aged 52, married, tall, strong, and well-developed, was admitted on April 23rd, 1890, with a pulsating swelling extending from the right axillary space to the edge of the pectoral muscle, which measured $7\frac{1}{2}$ inches laterally, and 7 inches from above downwards. The skin over it was glazed and discoloured. There was considerable œdema and infiltration of the forearm, and intense neuralgic pain with tingling of fingers, for which he had been directed to rub in a liniment; this had produced a superficial sore on the back of the hand. The temperature of the arm was natural. A distinct *bruit* was heard over the tumour. The pupils were dilated and unequal, the right responds to light slowly, the left is normal. The right radial pulse is feeble, left 70, normal. Pulsation in the tumour was stopped by pressure on the subclavian. He stated that he was a labourer and had done much heavy work. He had contracted syphilis at 20; and had been subject to winter cough for some years. On examining his chest it was found to be emphysematous, with rhonchus at the base of each lung. On August 10th, 1881, he was admitted into the Portsmouth Asylum as an epileptic; this was the first attack and was attributed to the fall of a heavy iron bucket on his shoulder six weeks previously. He was discharged on October 6th, 1881. Since January of this year he had suffered from loss of power, and pain, which he thought rheumatic, in the right arm; but was able to continue work up to April 4th, when he first noticed a swelling, about the size of a walnut, in the apex of the axilla. The great pain in the arm caused him to seek advice.

On admission he was ordered iodide of potassium and digitalis. Compression of the subclavian on the first rib was tried, but this could not be kept up, owing to the pain it caused the patient. It was therefore resolved to ligature the subclavian in the third part of its course. This was done, under chloroform, on April 28th. In addition to the usual incision over the clavicle, another was made along the outer border of the sterno-mastoid, which facilitated the passage of the needle round the artery, by giving much more space. There was but little venous hæmorrhage, the

external jugular being tied in two places and divided between. After the ligature, which was of carbolised catgut, had been applied, no pulsation could be felt either in the aneurysm or in the radial. The edges of the wound were sutured, and the arm and right side of the chest wrapped in cotton wool and flannel bandage.

April 29th. He slept well during the night. Temperature 102.2° , left pulse 104, right not perceptible; respirations 28. Much less pain in forearm, but complains of numbness. Circumference of upper arm, $11\frac{3}{4}$ inches; elbow, $11\frac{3}{4}$ inches; wrist, $8\frac{1}{2}$ inches.

April 30th. Good night. Temperature 100° , respirations 26, left pulse, 98. In good spirits, no pain.

May 1st. Wound dressed; a few drops of pus; temperature 99.4° ; slight pulse felt at the right wrist. No perceptible pulsation in the tumour; the skin over it less angry looking.

May 5th. Going on well; wound nearly healed. Swelling of arm reduced; upper arm, $10\frac{1}{4}$ inches; elbow, 11 inches; wrist, $7\frac{1}{2}$ inches. No pain of any kind, but unable to raise his arm. Tumour harder and size reduced.

May 12th.—Sat up in ward; wound healed. Has more movement in right arm, and no pain in it.

May 24th. Has been restless at night, at times noisy, capricious regarding his food, and suspicious of those around him. Ordered potass. bromid., gr. xx; chloral hydrat., gr. x; *ter die*.

May 26th. More sleep, but very noisy and difficult to manage; egotistical, and has delusions as to wealth and on religious matters.

May 31st. In a state of simple mania, raving and shouting, and resisting all efforts to quiet him. He was therefore removed to the Portsmouth Borough Asylum.

June 7th. Has been noisy and difficult to manage since his admission; pulls off the bandage from his arm; became so violent that he was prescribed gr. $\frac{x}{2}$ of hyoscyamine hypodermically. Slept afterwards.

June 13th. Had a severe, sudden hæmorrhage to-day from a small opening in the centre of the wound. Blood spurted out (arterial), and evidently from some large vessel. Controlled by pressure on the second part of the subclavian.

On June 14th, 15th, 17th, 20th, and on July 3rd, there were hæmorrhages from the wound, generally occurring after attacks of violence. On some occasions they were alarming in character, but in each instance were controlled by pressure.

June 18th. Has tenderness over a point at the right sterno-clavicular articulation, which presents a small rounded swelling, with a sense of deep fluctuation. There is slight discharge of sanguineo-purulent fluid from the wound.

July 6th. Very noisy and excitable, cannot be kept in bed; the swelling over the sternum is now red; takes nourishment; delusions continue.

July 10th. Had a noisy and restless night, quite beyond control. Swelling incised; the tissues were boggy and a small quantity of pus escaped—drained and dressed. The aneurysmal sac has contracted considerably, and the swelling in the arm and hand has disappeared.

July 11th. After spending a restless night, he was suddenly seized with violent hæmoptysis, bringing up about a pint of scarlet blood intermixed with frothy mucus. When seen at 6.30 A.M., he was dead, and presented all the appearances of death from syncope.

Post-mortem Examination made Nine Hours after Death.—Rigor mortis commencing; cadaveric lividity absent; body well

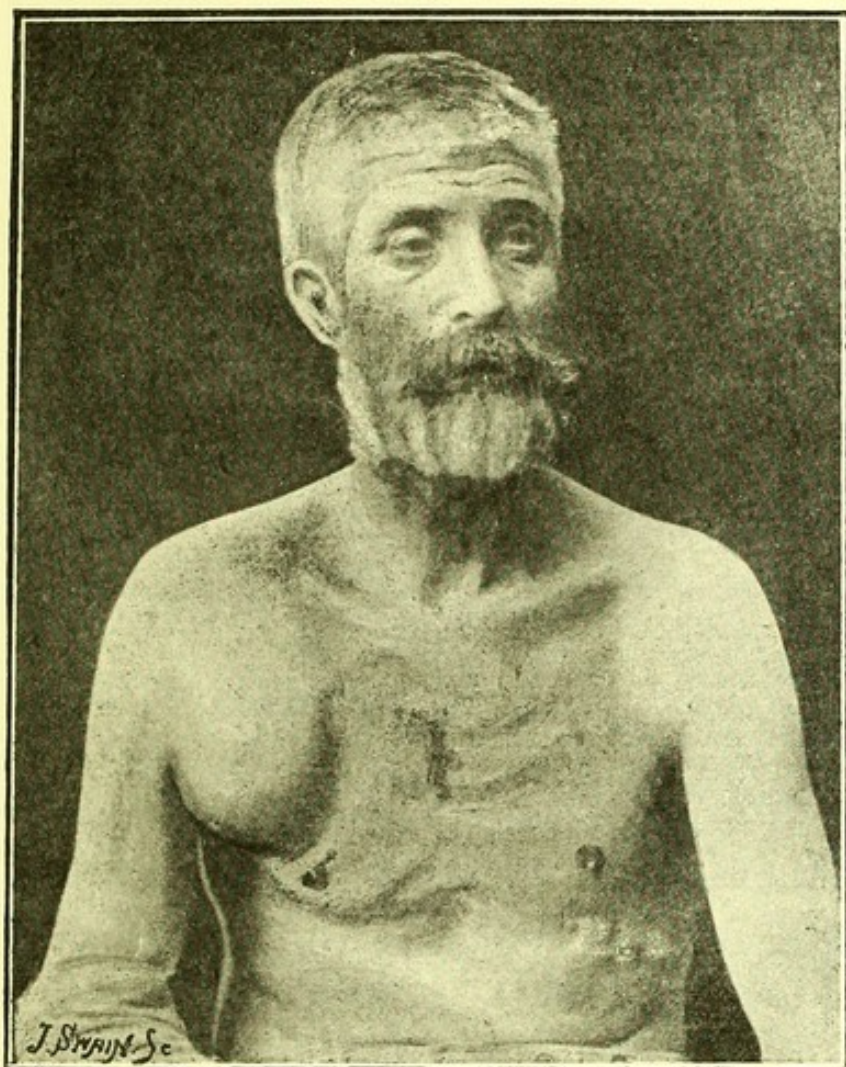
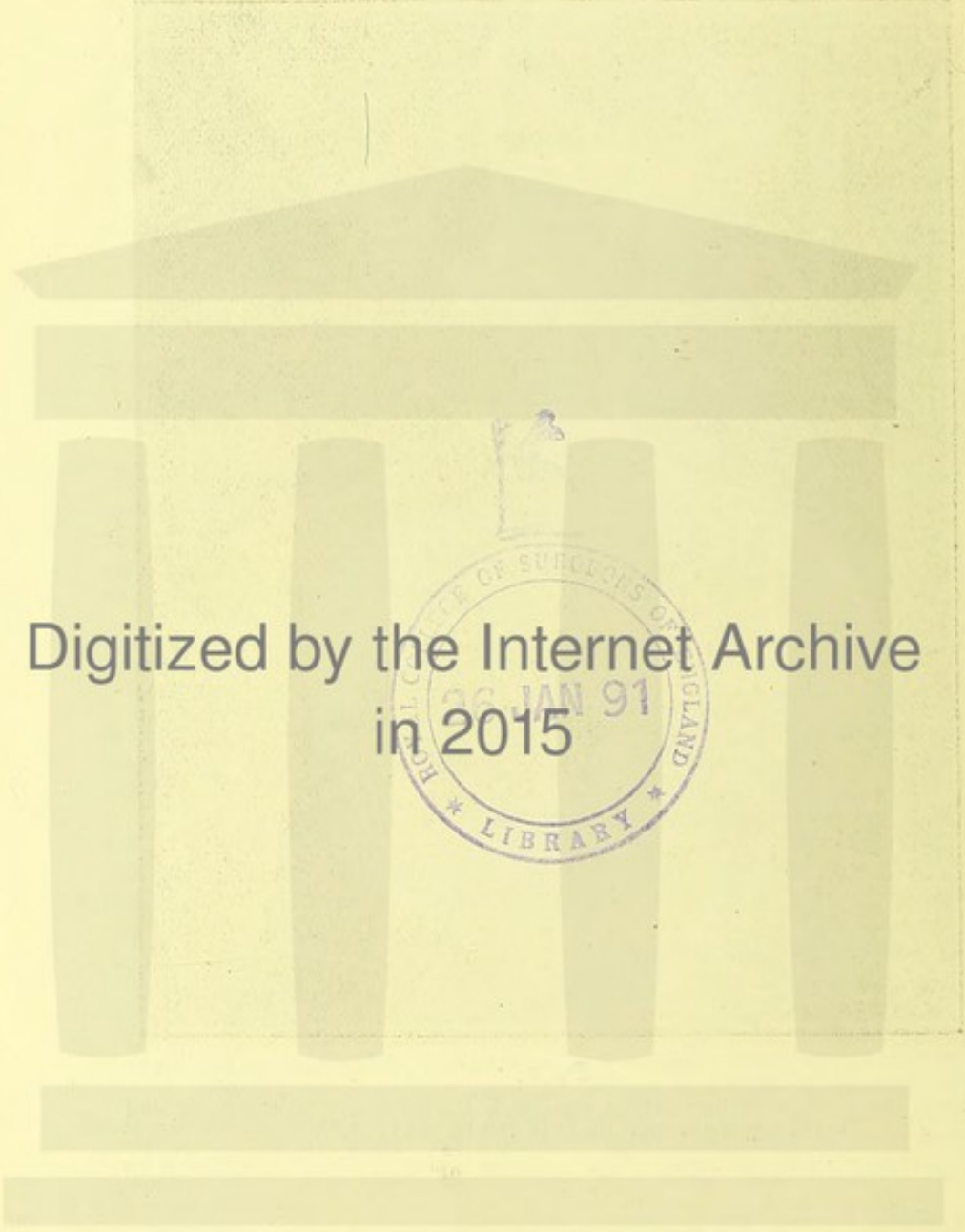


Fig. 1.

Aneurysm of right axillary artery, occupying the front wall of the chest, and involving about four inches of the length of the vessel.



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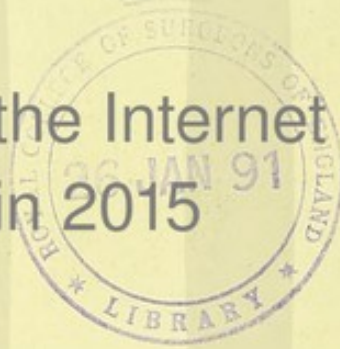




Fig. 2.

Specimen of aneurysm of right axillary artery, after ligature of subclavian artery. The sac is nearly globular in form and is occupied by a firm coagulum. The innominate, right carotid, and right subclavian arteries are slightly dilated, the brachial artery is of small size. The brachial plexus of nerves is stretched and is closely united to the posterior wall of the sac.

The specimen is preserved in the Museum of the Portsmouth Royal Hospital.



nourished, no marks or bruises. The right axillary space was occupied by a rounded swelling, which was 7 inches from the centre of the clavicle to its centre, and 4 inches from the right nipple. The aneurysm with connecting arteries was removed entire, and was found to involve about four inches of the length of the vessel. The general form of the sac, which was occupied by a firm coagulum, was nearly globular, and measured five inches laterally. A firm coagulum about the size of an egg, fusiform in shape, occupied a portion of the artery between the point of ligature and the aneurysm.

There was some pus around the artery, and on the distal side of the point of ligature was a deposit of plastic matter, which seemed to have closed the coats of the vessel. Below the tumour the brachial artery was seen of small size. On reflecting the tissues from the chest, two small annular patches were seen, one over the right sterno-clavicular joint, and the other in the third intercostal space, from which pus was oozing; they did not communicate with the chest cavity. On opening the chest, the cartilages of which were ossified, the right lung was occupying the central position, pushing the heart downwards and to the left. The left pleura was firmly adherent to the chest wall at the base and to the diaphragm, free at the apex. The left pulmonary artery was occupied by a large blood clot, which almost completely occluded it. The right lung was emphysematous throughout. The left lung was congested at the base, and emphysematous at the edges. The pericardium contained about 2 ounces of clear serum. The heart was enlarged, left ventricle firmly contracted.

On opening the trachea, it was found to be occupied by arterial blood intermixed with air. The left bronchus contained similar fluid. The right bronchus was clear and empty. The œsophagus also contained clotted blood, and there was a clot and some fluid blood mixed with air in the stomach; this had evidently been swallowed. The liver was enlarged, weight $63\frac{1}{2}$ ounces, mottled on surface, fatty on section. The spleen was pulpy, weight $6\frac{1}{2}$ ounces. Kidneys: left, weight $5\frac{3}{4}$ ounces, congested, cortex diminished, capsule strips readily, cyst in cortex containing fluid; right, same as left, and also containing cyst.

REMARKS.—Cases of axillary aneurysm due to arterial disease are sufficiently uncommon to be worthy of record, and this case was associated with other conditions which makes it one of much interest. It confirms the observation¹ that axillary aneurysm occurs much more frequently in males than in females (12 to 1), and is more often met with on the right than the left side. I think that the operation may be regarded as a successful one. The tumour was free from pulsation, consolidated, and much smaller. If the subclavian had not been ligatured, it is probable that death would have occurred shortly from rupture of the sac. The skin was œdematous, and presented the appearance of an abscess beginning to point. In fact, the case had been sent to the hospital as one of abscess—an error which many experienced surgeons have made. All went on favourably until the mental complication commenced. The collateral circulation was well established, for the temperature of the arm was normal, and the pulse at the wrist quite distinct. The suppuration of the tissues in the neighbourhood of the ligature was limited. The hæmorrhages, some of them to an alarming extent, were probably due to ulceration of the subclavian on the distal side of the ligature, but as these seemed to have ceased, there was a reasonable probability that he would have recovered

¹ Heath's *Practical Surgery*, vol. i, p. 122.

had he not been handicapped by mental and accidental complications.

There cannot be much doubt that the immediate cause of death was hæmoptysis and syncope, consequent on a rupture of a branch of the left pulmonary artery, and communicating with the left bronchus. That the blood is usually of a bright red colour in cases of ruptured pulmonary artery or a branch is supported by the great experience of the late Dr. Hilton Fagge. He says: ² "A point of some importance in regard to cases of ruptured pulmonary artery or a branch, is that the blood is usually of a bright red colour. It is extremely rare for blood from the lungs to be dark coloured. The bright red arterial appearance depends upon the blood having become aerated after its expectoration, or while in the bronchial tubes, where it certainly is often exposed to the air, as is shown by the frothy state in which it reaches the mouth."

Mr. Barwell ³ has collected 17 cases of axillary aneurysm treated in six of the London hospitals. Of these, only 4 came to ligature, with 3 recoveries and 1 death from erysipelas. The results of the other forms of treatment employed were: 5 by pressure with 3 failures, 1 recovery, 1 death; 3 by amputation, with 3 deaths; 1 Valsalva method, no benefit; 3 expectant measures or operation declined, with 3 deaths; 1 old operation, recovery. There are several specimens of axillary aneurysm in the Museum of the Royal College of Surgeons, but I believe only two in which it is mentioned that the subclavian had been ligatured: one (No. 3,232), Mr. Liston's case, in which death occurred on the fifteenth day from hæmorrhage; the other (No. 3,233) presented by Mr. Gay, in which there was a double subclavio-axillary aneurysm. The right subclavian artery was tied after convalescence from bronchitis, which recurred and proved fatal a fortnight after the operation.

With reference to the insanity. In persons with a tendency to mental disturbance, there is a special likelihood after surgical operations for the mind to become affected. In some cases, as has been shown by Dr. Savage, ⁴ insanity may be the direct result of the administration of an anæsthetic of any kind, when it appears immediately. In this case there was an interval of three weeks. Possibly the ligature of a large vessel, like the subclavian, may have contributed, by altering the blood supply to the brain.

But, I think, the most likely explanation is that advanced by Mr. Dent, ⁵ that just as "slight operations may lead to the development of a rash resembling that of scarlet fever all over the body when no anæsthetic has been given, so in some patients the evidence of such disturbance is not seen on the skin, but may spend its force more centrally. The mind may become affected, and we shall then recognise the commotion by other senses in addition to sight." Whatever may be the exact cause, it seems certain that a neurotic inheritance or a previous attack of insanity does very materially affect the prognosis in surgical operations.

My thanks are due to Dr. Raw, of the Portsmouth Borough Asylum, for notes of the case whilst under care there, and of the *post-mortem* examination.

² *Practice of Medicine*, vol. ii, p. 218.

³ Ashhurst, *Surgery*, vol. iii, p. 491.

⁴ *BRITISH MEDICAL JOURNAL*, December 3rd, 1887.

⁵ *Journal of Mental Science*, April, 1889.

