AN ACCOUNT OF
A CASE OF SCROFULOUS ABSCESS

OF THE
ANTERIOR MEDIASTINUM,

COMMUNICATING WITH BOTH SIDES OF THE CHEST, THE PERICARDIUM,
AND TRACHEA ; FORMING A TUMOUR ABOVE THE CLAVICLE, AND
SIMULATING ANEURISM OF THE INOMINATA ARTERY OR ARCH
OF THE AORTA.

WITH OBSERVATIONS.

BY
DANIEL MACLACHLAN, M.D.
PHYSICIAN TO THE ROYAL HOSPITAL, CHELSEA.

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JOHN COOPER, æt. 61, a thick-set, actively-formed man, formerly belonging to the 7th Hussars, became an in-pensioner of Chelsea Hospital on the 1st January, 1849, and was admitted into the infirmary on the 5th of the month, complaining of great difficulty of breathing, general debility, and constant pain in the back of the head, right shoulder, and arm.

Immediately above the sternal end of the right clavicle, and dipping underneath this bone, there was a slightly moveable, somewhat flattened tumour, of the size of a tennis ball, divided through the centre by a superficial sulcus, the integuments covering the inner half of which were slightly reddened. At this place a knuckle-like projection existed. The tumour was tense and elastic, except where it seemed to point : here an obscure feeling of fluctuation was perceptible ; it was free from pain, and neither bruit nor pulsation could be detected in it. The carotid on this side beat feebly, and the pulse at the temple and wrist was scarcely discernible. Deglutition was difficult. The voice was husky,—he spoke

in a whisper. Respiration, at all times impeded, occasionally assumed an asthmatic character. He could not lie down. A teasing, dry cough, incessantly harassed him. The face and scalp were congested, the external jugulars and cutaneous veins prominent, and the lips livid. He was seldom free from pain in the back of the head, pain in the right shoulder, with pain and numbness extending from the clavicle down to the ring and middle fingers of this hand. It was evident that the trachea and œsophagus were pressed upon, and that the nerves and blood-vessels of the right side of the neck, and right upper extremity, suffered alike compression. The arm was not cedematous. A swelling, supposed to be an enlarged gland, existed below the angle of the lower jaw on the right side. The man's general health was greatly impaired; he was much emaciated, and the pulse was weak and rapid.

The account he gave of his illness was very obscure. In April preceding, when employed as a labourer, he caught a slight cold in his chest, since which he had never been entirely without some cough and difficulty of breathing, uneasiness in the chest, pain in the shoulder, and headache. Though unable to work since the commencement of his illness, at no time had he been forced to take to his bed. All his symptoms had greatly increased of late, and he had not derived any benefit from the medicines prescribed at a dispensary which he had regularly attended until within a short time of his becoming an inmate of Chelsea Hospital. His impression was distinct, that the tumour above described suddenly appeared after a violent fit of coughing, three weeks before his admission into the infirmary, on the 5th January. It was, when first observed, not larger than a nutmeg, and giving him no pain, it had scarcely received any attention. He had never experienced pain in any part of the chest equal to what he suffered in his head and shoulder.

The whole of the right side of the chest, anteriorly and posteriorly, was unequivocally dull on percussion. The sternum universally elicited a dull sound. Some fulness existed in the right infra-clavian region. The intercostal

spaces on this side were not prominent, nor different from those of the opposite side, nor was there any enlargement; but the costal movements of the two sides strongly contrasted. While they were absent on the right side, they were unusually vigorous on the left, corresponding entirely with the auscultatory signs. Respiration was clear and puerile, over the whole of the left side of the chest, with the exception of the præcordial region. It was entirely absent in the right side anteriorly. Along the spine, and at the base of the scapula on this side, a feeble respiratory murmur, with occasional mucous, râles, could be heard; vocal and tussive fremitus was absent. The hand applied to both sides of the chest discovered moderate vibration on the left side; none could be felt on the opposite side. Altogether, the physical signs pointed to extensive effusion into the right cavity of the chest, and yet there were circumstances rendering a positive declaration of this hazardous.

The præcordial region was extensively dull on percussion. There was no perceptible impulse of the heart, and at no period were its sounds audible, however carefully the patient was examined. Latterly, the erect posture, or any sudden muscular effort, occasioned faintness. As already observed, the pulse was frequent and compressible, and a remarkable difference existed between the pulse of the right and left side, it being almost imperceptible in the radial and temporal arteries of the right side.

No alteration took place in the physical signs. Rather suddenly, about three weeks after admission, the respiration became more embarrassed, and the asthmatic paroxysms more frequent and severe. The difficulty of swallowing also increased. His voice was now almost indistinct. The cough continued all but dry. Occasionally, the very scanty catarrhal expectoration that he rejected became mixed with florid blood, and, about ten days before death, the sputa were purulent but still scanty. The tumour remained nearly stationary. Some fulness was perceived on the 28th January, along the lower part of the right side of the neck, extending backwards, towards the vertebræ, without possessing any

sense of fluctuation. Neither in this swelling, nor in the circumscribed tumour itself, was there ever any impulse communicated on coughing. Two days afterwards, on the 30th, an exploring needle was introduced into the most prominent part of the tumour, and pus being discovered, a small opening was made into it, when nearly three ounces of curdy sero-purulent matter escaped, the walls of the abscess collapsing and the tumefaction towards the spine partially subsiding.

From this date, the patient rapidly sank. On the day after the operation his breathing was more free. Each fit of coughing was now accompanied with a jet or gush of sero-purulent fluid from the opening, and the quantity discharged during the day in this manner was very considerable, saturating constantly renewed pledgets of tow. The exhaustion prevented a satisfactory physical exploration. On the 2d February, the right side of the chest, from the clavicle down to the nipple, had regained its lost sonoriety in a remarkable degree, and the respiration in the apex of this lung was now puerile. The dullness and absence of the respiratory murmur lower down remained as heretofore. Posteriorly the chest was not examined. No change was perceived in the sternum, nor in the region of the heart. The respiration in the left lung had diminished in intensity, acquiring, with the partial relief to the right lung, a more normal character. Death happened on the 7th of the month.

Post-mortem.—On raising the sternum the nature of the disease became immediately apparent. The whole of the anterior mediastinum was enormously thickened, the free surface highly vascular, and between its laminae, in the substance of this diseased mass of hypertrophied cellular and adipose membrane, there was an almost-empty abscess, capable of holding a billiard ball. This cyst communicated by several fistulous openings with the right side of the chest, and with the pericardium by a very distinct-ulcerated perforation, admitting the little finger, situated near the right auricle. It also communicated, by one or two openings,

with the tumour or abscess in the neck. On slitting open the trachea, its internal surface was found highly vascular, as was the mucous membrane lining the first divisions of the bronchi. Midway between the larynx and bifurcation of the trachea, on the anterior and internal aspect, three or four warty granulations, of the size of a split-pea, were observed, apparently the termination of fistulous openings, through the lowermost of which a common probe could be passed into the diseased mass. The larynx itself was perfectly healthy. The innominate, and a considerable portion of the sub-clavian, were imbedded in the indurated structures. The sternum, vertebræ, and clavicle were sound. In the right pleural sac there were several pints of curdy sero-purulent fluid. This lung was pressed against the spine, sodden and splenified. The pleura covering it, and lining the ribs, was perhaps paler than usual, certainly free from any sign of recent inflammation. About a pint of precisely similar fluid lay in the left side of the chest. The pleuræ pulmonalis et costalis of this side were also healthy. Both lungs were studded with miliary tubercles. The pericardium contained about eight ounces of pus, of the same nature as existed in the abscess and sides of the chest. This sac, like the pleural cavities, was free from vascularity. The heart was sodden, but healthy.

The viscera of the abdomen were in a normal state. As was suspected, the sub-maxillary swelling was an enlarged scrofulous gland.

I have ventured to lay this case before the Society on account of the many points of interest it suggests for the consideration of the physician, the surgeon, and morbid anatomists, as well as on account of the comparative rarity of the disease.

Nine or ten months had elapsed before the patient came under observation at Chelsea Hospital, consequently the previous history of the case is involved in much uncertainty; but, from the man's statement, the disease seems to have commenced, like scrofulous abscess in general, slowly and

insidiously. It is probable, that the abscess had attained some bulk before the pectoral symptoms, to which he alluded as having attacked him in April, had been observed, and that these, consisting of cough and shortness of breathing, were the result of the growth of the mediastinal enlargement. Pain does not seem to have been a prominent feature until the abscess had compressed or involved the nerves and blood-vessels in its vicinity, and then it was remote from the sternum, affecting particularly the shoulder and scapula. The pain in the chest was more a sense of oppression, and when closely questioned, the sternum was not pointed to as being, or having been, the site of any particular distress. In these respects, the symptoms differed, as would be expected, from what has usually been observed in acute mediastinal pleurisy, ending in suppuration, where, as in a case recorded by Andral, (*Clinique Médicale*, by Spillan, p. 581,) there was acute pain between the left breast and sternum, so very acute, as to render percussion impossible, increased by coughing and inspiration, and accompanied with high fever, intense anxiety, and ultimately, on the eighth day, with signs of effusion into the pericardium. These cases, however, are in reality examples of acute phlegmonous suppurative inflammation of the loose cellular membrane and adipose tissue enveloped in the laminæ of the pleura, forming the mediastinum, and not cases of circumscribed or partial pleurisy; and the symptoms must vary with the intensity of the inflammation, and the extent of the textures engaged. Scrofulous disease of the mediastinum may thus advance considerably before exciting attention, and when suppuration is established, pressure on the neighbouring organs will probably be the earliest indication of its formation, while it must be very liable to be confounded with other intra-thoracic growths, either of the mediastinum itself, or of the ascending aorta. It must be more frequent in youth and manhood, when scrofulous complaints are common, but here is a well-marked instance in a person sixty-one years of age.

Advanced as the disease was, and presenting itself under peculiarly favorable circumstances, the diagnosis was by no

means so easy as might be supposed. The tumour in the neck had appeared from within outwards: it had suddenly risen after a violent fit of coughing; it might, therefore, be presumed to have connexion with the lung; but, unlike abscess bursting into the lung from without inwards, or abscess of the lung itself bursting in the opposite direction, no impulse was communicated to it on coughing, and it was free from crumpling or crepitation. This supposition was therefore rejected. Still it might communicate with the pleural cavity, it might be an unusual pointing of an empyema bursting in the neck? The absence of impulse also militated against this notion; yet the resisting nature of the superficial and deep-seated fasciæ of the neck, and the size of the opening, might prevent any remarkable development of this phenomenon. At a subsequent period, when the tumour was punctured, this supposition appeared to receive every confirmation, the pus escaping in jets with each fit of coughing; yet it was not the true explanation.

The connexion of the tumour with the lung being untenable, and its connexion with the cavity of the chest being very doubtful, two diseases suggested themselves, which, taken in relationship with the whole history of the case, one or other of them appeared extremely probable. Had we to deal with intra-thoracic aneurism finding its way outwards—Was it an aneurism of the innominate or arch of the aorta? or, secondly, Was it malignant disease of the lung, with corresponding tumours in the neck,—the not unusual accompaniments of pulmonary or mediastinal cancer?

The mechanical effects of these diseases, intra-thoracic aneurism and intra-thoracic cancer, are similar. That the œsophagus and trachea, as well as the vascular and nervous systems of the upper extremity, were subjected to compression, from some cause, was obvious; the dysphagia, aphonia, irritative cough, orthopnoea, congested features and turgid veins, with neuralgic pains, proved this, while the diminished pulsation of the right-carotid, the nearly absent pulsation in the corresponding radial and temporal arteries,

together with the pain in this shoulder following the course of the ulnar nerve down to the fingers of this hand, were equally conclusive, that this pressure was chiefly exerted on the right side. The tumour entirely corresponded in situation with a detruing aneurism of the innominata; it was situated immediately above the sterno-clavicular joint on the right side of the neck, and, dipping behind the clavicle, it was, at the same time, accompanied with some fulness in the infra-clavian region. True, it was without pulsation, but the general circulation was feeble; though the tumour had only recently attracted notice, there were grounds for believing that the disease had existed for nearly a year; pulsation was, therefore, not unlikely to have disappeared; besides which, it is well known, that this symptom is by no means invariably present, but is not infrequently entirely wanting, the stethoscope also failing to discover the usual bruit. Is it surprising then, that, with a group of symptoms strongly indicative of aneurism, we hesitated to open the tumour sooner, and that we adopted the precaution of examining it with an exploring needle?

The least probable suspicion was, that the disease consisted in malignant degeneration of the lung. The evidence of extensive effusion into the right pleural cavity was all but conclusive,—indeed we entertained scarcely a doubt on the subject. However, with such universal dullness and nearly total absence of the respiratory murmur, there was no descent of the diaphragm, and the inter-costal spaces were not detrued, nor was there any perceptible enlargement of the side,—circumstances which were more than likely to coincide with an effusion so extensive and of so long a duration. It may also be observed, that the sanguinolent character of the expectoration and its scantiness favoured the opinion: and that all the physical signs of effusion may attend cancerous disease of the lung when, from the destruction or blocking up of a bronchus, the ingress of the air is prevented, is shown in a case of this description I have detailed in the 'Medical Gazette,' 31st March, 1843. But

the symptoms of effusion predominated, and rendered the belief of malignant intra-thoracic disease, or consolidation of the lung, improbable.

It is impossible to fix the period at which the abscess found its way into the right side of the chest, or into the pericardium. The physical signs of effusion into the left side were not observed. From the limited quantity of purulent matter found here, its escape into the side was apparently recent. The urgent dyspnoea, appearing three weeks after admission, very probably coincided with a more rapid accumulation in the pericardium, if not with the actual perforation of this sac and its immediate reception of the purulent fluid. In a somewhat analogous case of deep interest, in which an hepatic abscess burst into the stomach and also into the pericardium, recorded by Dr. Graves in the *Dublin Journal of Medical Science*, 1st January, 1839, the physical phenomena of effusion were preceded by the usual symptoms of pericarditis. In the above case, pain in the cardiac region and palpitation seemed to have been entirely absent, and the pathologist will not fail to observe that neither the pericardium nor the pleura (except the mediastinum) bore any marks of irritation occasioned by the presence of the purulent secretion which had escaped into the respective cavities. The friction sounds were therefore very probably absent.

I omit detailing the treatment pursued. With the view of removing the fluid from the chest, diuretics were prescribed immediately after admission, and sedatives were given to allay the irritative cough. Not the least benefit was derived from the means advised. Instead of relieving the cough and dyspnoea, opiates appeared to be positively injurious, and the muriate of morphia, so efficacious in subduing laryngeal and tracheal irritation, had consequently to be discontinued.

As I have already very far exceeded the limits I had proposed, I forbear further observations on suppurative inflammation of the mediastinum, a disease which seems to have been early recognised. It appears, however, to be sufficiently rare to merit this case being brought under notice.

Of the cases recorded none seem to have terminated in the same manner. Some years ago, a discharged soldier came before me with a fistulous opening between the first and second rib, about an inch and a half from the edge of the sternum, through which a bent probe could be passed for four or five inches behind this bone. He had received a blow on the chest several months before the abscess had burst, and was suffering from shortness of breath with a dry rasping cough. I have no doubt that this was a case of mediastinal suppuration resulting from the alleged injury: and blows on the chest seem to be the most frequent ostensible cause of the disease in question.