C A S E
OF
A N E U R I S M
OF
THE ARTERIA INNOMINATA,
IN WHICH THE CAROTID AND SUBCLAVIAN ARTERIES
WERE TIED.

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READ MAY 26TH, 1840.

RICHARD COLT, admitted into the Winchester County Hospital Sept. 17, 1839, aged 55 years, a tall spare man, of sallow complexion, having been a sailor in constant occupation, and having resided nine years in a tropical climate, during which time he had lived very freely, but always in the enjoyment of excellent health. On his return to this country he married, and resided at Lymington during four years previous to the time of his presenting himself at the hospital. He stated that about six months since he had observed a small swelling, about the size of a hazel nut, situated just above the right clavicle, at about its middle; that it was unaccompanied by any pulsation or pain, and that it disappeared in about eight

days : from which time, until about four weeks previous to the date of his entry at the hospital, he had no return of swelling, when suddenly his attention was attracted to another tumor about the same size, which presented itself just above the sternal end of the clavicle : this soon became painful, and the pain was much increased when he was in the recumbent posture. The pulsation too was now soon evident, and as the swelling enlarged it occasioned some difficulty in breathing ; at the end of the four weeks he showed the swelling to Mr. Adams, a surgeon at Lymington, who considered it aneurism, and advised his coming to the hospital.

On his admission, the swelling had attained to the size of a hen's egg externally ; it seemed that the tumour extended over the carotid artery at its lower part, reaching as high as the transit of the omo-hyoideus muscle : it inclined somewhat also towards the subclavian artery : it had all the characteristics of aneurism, and that of the innominata. The health of the man appeared tolerably good, with the exception of some degree of constitutional disturbance, arising from continued pain and difficulty of respiration.

On the 24th of September, the case was submitted to Sir Astley Cooper, who was on that day at Winchester. His opinion confirmed that already entertained, that the disease was innominatal, and his sanction was given to the experiment of tying the carotid and subclavian arteries.

Sept. 25th.—A ligature was placed on the carotid

artery immediately above the omo-hyoideus muscle which was somewhat pushed upwards by the tumour. The operation was completed without any difficulty or any unusual circumstance attending it. The arrest of the circulation through the vessel was complete. The immediate effect of the operation in no degree diminished or disturbed the functions of the brain. The aneurismal sac evidently lessened as soon as the ligature was tied, but the pulsation continued, though certainly with less force. The trachea was almost immediately relieved from pressure by the reduction of the tumour, and thereby the troublesome cough and dyspnoea considerably lessened. The patient throughout the day well, and feeling much benefitted by the cessation of those distressing sensations which the pressure of the aneurism had previously occasioned.

Sept. 26th, A. M.—Had passed a good night with more comfortable sleep than he had enjoyed for several weeks. Ordered a dose of castor oil: P. M. bowels relieved, sensations unaltered since the morning. No heat of skin, pulse moderate, regular and the same in both wrists. Pulsation in the tumour certainly less vigorous than before the operation. Ordered

R. Tinct. Digitalis $\mathfrak{m}$. x.

Syr. Papav. $\mathfrak{z}$ i.

Mist. Camph. $\mathfrak{z}$ x.—every four hours.

Bladders partly filled with iced water to be applied to the aneurismal swelling.

27th.—Has passed a good night, but complains of

headache : on this account the Syr. Papaveris omitted in the draught—continue the Digitalis, and ice to the tumour.

28th.—Head better—bowels relieved—otherwise the same.

29th.—Well—ordered to continue the Digitalis twice a day. To use the ice occasionally, and persist in low diet.

No unfavourable symptom occurring, in the interval, the ligature came away on the fourteenth day after the operation ; after which time the patient was allowed to walk about, and at the end of three weeks he left the hospital contrary to advice, but under the pretext of having affairs to settle at home, and with the promise of returning at the end of a week or ten days. At this time the tumour appeared of the size to which it was reduced immediately after the operation, and the pulsation as before the carotid was tied.

The patient was now surrendered to the care of Mr. Adams, who kindly undertook to watch the progress of the swelling, and to urge on the man the necessity of returning to the hospital to undergo the second operation, which it was hoped he would have consented to, at the end of a month from the first operation ; all representation of the evils of delay, urged by Mr. Adams, failed, but driven by distress of breathing from the rapid increase of the tumour, he again presented himself for admission to the hospital, on the 27th of November, two months from the tying of the carotid.

At this time his appearance was very wretched, the difficulty of breathing extreme, cough very frequent, and deglutition much impeded. The tumour had increased to more than double its original size, and especially it had extended outwardly so as to overhang nearly half the clavicle.

Dec. 2nd.—A consultation of my colleagues at the hospital determined that the second operation should be performed on the following day.

3rd.—The patient had passed a night of great suffering, and more than ever from the difficulty of breathing, which continued to the time of the operation. When brought into the operating theatre, he was quite livid from the arrest of the circulation through the lungs, and his pulse excessively weak. He appeared to be almost at his last gasp from suffocation; and great fears were entertained lest he should expire under the operation. It was however agreed, that this was the only chance of relief, and inasmuch as the tumour had so decidedly lessened after the former operation, it was hoped that a similar effect might be produced by tying the subclavian. The operation was therefore undertaken without further delay in the following manner:—

The patient was laid on a table with his head and shoulders raised towards the light, so that it might fall from the skylight into the hollow of the incision. The skin being drawn down, an incision was made through the integuments upon the clavicle; it commenced near the acromion, and extended along the clavicle to the tumour, which now occupied about

one third of the clavicular region : the incision terminated by being carried a little upwards by the side of the external jugular vein, which was distinctly visible, and distended in consequence of the difficult respiration. It divided the skin and platysma myoides ; the cervical fascia, now becoming exposed, by careful touches of the scalpel, and the aid of a director, was easily divided. The loose cellular tissue having been next cleared away, the situation of the artery was readily detected in its passage over the first rib ; but it lay so far beneath the tumour and clavicle, that some difficulty was experienced in this stage of the operation. At first one of the cervical nerves, which received a pulsation from its contact with the artery, was mistaken for the subclavian, and a ligature passed under it : this mistake being at once discovered, it was not tied, but drawn away by this means from the artery, so as to bring it into view. A ligature was then passed around the vessel, by means of an aneurismal needle, made by Weiss, having an eye at the end of a spring which slips along a canula inserted into a firm handle (this needle being admirably adapted for the purpose). The artery having been firmly tied, the pulsation at the wrist ceased, the wound was dressed, and the patient put to bed. Relief from the dyspnoea was immediate, so much so that the man was able to walk with ease to his ward, and from that time he continued free from any inconvenient pressure on the trachea until he died, the direction of the

growth of the tumour having been subsequently diverted *outwards* towards the right shoulder.

On the next day, the patient was in every respect well: the tumour had manifestly decreased, but pulsation in the sac continued, though less in force, as on the former occasion. No pulse to be felt at the wrist. The heat of the arm greater than the opposite. He was treated as under the previous operation. No unusual symptom occurred until Saturday evening, Dec. 7th, when he was suddenly seized with delirium and muttering, a considerable increase of the aneurismal tumour, and violent pulsation of the heart and *left* carotid: it was so great as to shake the whole frame, and actually raise the head from its pillow. He was immediately bled to twelve ounces and took thirty drops of laudanum. The first part of the night was passed with but little diminution of the symptoms: after which however they gradually diminished, and by the following evening he became quite tranquil. From the time of this attack the tumour never diminished; on the contrary it gradually, though slowly, increased. His health continued to improve, and with the exception of occasional pain from distention of the swelling and pressure on the nerves over which the tumour was situated, his sufferings were comparatively mild.

On the 23rd of Jan. he became suddenly faint and weak with loss of appetite, which lasted a few days; and he again recovered sufficient strength to feel anxious to quit the hospital.

On the 25th of Dec. the ligature came away in the

dressings, and the wound speedily healed. He now sat up and smoked his pipe, which was his habit, and, although gaining no ground, feeling some confidence as to his ultimate recovery, he persisted in his desire to quit the hospital, which he did on the 5th of February. He returned to Lymington.

On the 15th of February Mr. Adams was called to him on account of profuse bleeding, which occurred in the evening: this was arrested by plugging and clots, but on the following morning, Feb. 16th, he bled again, and died without an effort.

Thus a period of about four months and a fortnight passed between the first operation and the death of the patient.

Post mortem appearances on inspection.—The heart was large and loaded with fat.

The *pulmonary artery*, nearly twice the natural size.

The *aorta* extremely dilated from its origin in the left ventricle through the whole course of thorax; specks of osseous matter appeared in its coats.

The *superior cava* was also greatly enlarged.

The aneurism had emanated from the *arteria innominata*, below its division into subclavian and carotid arteries. Nearly half of the innominata was occupied by the origin of the aneurism. A ligature upon the remaining part of the innominata would not have left space between it and the arch of the aorta for the formation of a clot, or adhesive matter.

The *sternum* was slightly absorbed at its upper part.

The *clavicle* had undergone progressive absorption from the pressure of the aneurism upon its inner and lower surfaces, and its articulation with the sternum had been destroyed, so that the clavicle became lifted upwards.

The *right* subclavian artery was obliterated from the clavicle to the first rib.

The *right carotid artery* was obliterated behind the tumour from just above the upper edge of the omohyoideus.

The *aneurismal sac* reached from the *arteria innominata* to the upper part of the thyroid cartilage.

The sac had burst upon its left side although it projected most upon the right side.

Winchester,
23rd May 1840.