GLANDULAR SWELLING IN NECK;
CONVERSION INTO A PULSATING TUMOUR LIKE ANEURISM;
LIGATURE OF THE COMMON AND EXTERNAL CAROTIDS
AND OF THE INTERNAL JUGULAR VEIN; CURE.

BY

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THIS case appears to be worthy of record, first on account of its pathology; secondly, for the success which attended the treatment; and thirdly, on account of its rarity. If there are precisely similar cases on record, I cannot find them.

A case of abscess in the neck which in its course destroyed a large portion of the common carotid, jugular vein, and pneumogastric nerve is recorded by Sir Wm. Savory in the 'Trans. of the Royal Med. and Chir. Soc.' for 1881, and is somewhat similar. The morbid action in my case may have been of the same quality, but not the same degree. It is to be observed that the case about to be narrated was not one of abscess, if abscess is defined as a collection of *pus* in a cavity. No *pus* was seen, and no *pus* was discovered by the operation. Inflammatory exudation of a fluid character there must have been, but burrowing *pus* was not met with, though doubtless the process by which the vein and artery had been destroyed

was similar to that by which the same structures are destroyed in the advance of a distinctly suppurative inflammation.

H. H—, æt. 22, bootmaker, was admitted into St. Thomas's Hospital under Mr. Croft's care on June 4th, 1891. He had enjoyed good health until eight weeks before admission. Then he began to complain of sore throat, and a month later he observed a small swelling on the right side of his neck. This swelling gradually increased in size until a week before he applied to the hospital, when it became rapidly larger. Under treatment it appeared to subside somewhat. At the time of his admission the tumour appeared to be about as large as a pullet's egg. It was situated opposite the thyroid cartilage, and was overlapped by the edge of the sterno-mastoid muscle. Its long axis was from above downwards. It was fairly movable. The skin over the most prominent part was slightly adherent, and there a little fluctuation could be felt. It was examined by several persons, but no pulsation was observed by any. It was diagnosed as a glandular abscess which would require incision, and not suitable for excision. No other glandular affection was found, and no tubercular tendency was discovered. During the evening of the second day after admission he complained of fresh pain in the swelling, and suddenly experienced some temporary difficulty in swallowing and breathing. No change was made in the applications. On the morning of the fourth day, June 8th, the House Surgeon inspected the swelling prior to its being operated on; he then found, to his amazement, that the swelling had more than doubled its size, and that it had become strongly pulsatile. The pulsation was carefully examined, and found to be decidedly centrifugal and expansile, and to be accompanied by a slight systolic murmur. No thrill could be felt. The patient's temperature was natural, and he felt fairly well.

On my arrival at the hospital at 1.30 on that day

(June 8th) my immediate attention was directed to the case, and I found it in the following condition. The tumour, which was the size of a duck's egg, yielded a sense of fluctuation, and pulsated freely with a markedly expansile movement. The integuments over its most prominent part were discoloured, dusky, and adherent from inflammatory exudation. It pushed the sternomastoid outwards and extended upwards towards the angle of the jaw, and downwards to within two and a half inches of the clavicle, thus making an oval swelling about three and a half inches in length. The common carotid could be compressed below the swelling so that all pulsation could be stopped; but it was observed that the tumour did not perceptibly diminish, although the pulsation was controlled.

The line of treatment seemed to be distinctly indicated, though there was some difference of opinion with regard to the precise nature of the pulsating tumour. One believed it to be an abscess, and that the carotid artery passed through it. This surgeon attempted to demonstrate this condition by endeavouring to compress the swelling, and the carotid through the swelling. These endeavours were followed by a remarkable result, otherwise I should not stop to mention them; they resulted in a decided diminution in the amount of the pulsation, and in obscuring the expansile character of it. After the manipulation the pulsation was no longer so strong nor so expansile. As a first step in the operation I cut down to the sheath of the vessels, with the object of exposing the common carotid below the omo-hyoid. I purposed to place a ligature loosely round the artery, that the means of controlling hæmorrhage from the interior of the swelling might be absolutely ready at the moment of puncturing the cavity. When I had exposed the sheath of the vessels a colleague came to my side and expressed his confident belief that the swelling consisted of an abscess, and that the pulsation as he felt it was not due to an aneurism. To clear up this doubt, whilst an assistant's finger rested on the partly exposed common carotid

below, I punctured the still pulsating swelling. Its nature was instantly revealed, for dark clots and blood were sharply ejected into the air. Compression of the trunk below was instantly made from the wound already provided, and no current of blood escaped at this time. The next step was to lay open and explore the cavity of the swelling. This was rapidly done whilst pressure was maintained upon the common carotid. No pus was seen and no collection of serum discovered, but a mass of dark coagulum was turned out. No sac or cyst wall was found, and no opening in any artery was observed. At first no bright-coloured blood escaped, but on turning out the dark clots from the upper part of the collection, bright arterial blood flowed rapidly from that part of the cavity and from above downwards. The tissues which included the source of the bleeding were immediately seized between the thumb and forefinger, and by their means the bleeding was kept controlled, but whether it came from the common artery or the external carotid was at that time uncertain. Attention was next directed to the common carotid trunk below ; the sheath was opened and a ligature put on. The upper part of the wound was now investigated for the source of the bleeding. The thumb and finger pressure was relaxed. This was instantly followed by copious venous and smart arterial bleeding ; the reapplied finger pressure and forceps quickly controlled this. The cavity was now more deliberately explored. Flake-like fragments were seen in the situation of the internal jugular vein in the deep upper part of the wound, but the structures were difficult to distinguish. The walls were blood-stained and infiltrated with inflammation products, and three or four small but swollen glands clung about the sheath of the vessels near the point of bifurcation. The trunks of the common carotid and internal jugular were not laid bare, and no perforation of the former was noticed. The latter named trunk in the lower part of the wound did not distend or pulsate, and fears were entertained lest air passed or

might pass down it. As a measure of precaution a silk ligature was placed on this vessel at the same level with the ligature on the common carotid artery. The vein when exposed was empty of blood and clot. The pneumogastric nerve was not seen or disturbed. Again attention was given to the upper part of the cavity. In order to completely expose this and the probable source of bleeding, the wound was extended upwards. When the bleeding from this incision had been arrested, the upper end of the jugular was looked for. It could not be defined. The bleeding was controlled by compressing the structures in the position of the axis of the facial and submaxillary and external jugular veins, and the first part of the external carotid artery. A strong silk ligature was therefore placed around this pedicle. At this stage all bleeding seemed to be under control. From an early period of the operation the patient's breathing had been difficult, and the complexion of his face and neck were very dusky. The tongue had been kept out with forceps. Though the breathing caused great anxiety, the operation was not seriously interrupted by it. The wound was now washed out with mercurial solution, and the cutaneous edges were closed by suture. This process had just been completed when increased difficulties beset the breathing. During a struggle copious fresh venous blood deluged the wound. The upper sutures were rapidly cut, and the wound ripped open. The bleeding was venous only, and came from two sources, one in the side of the wound and the other in the deep upper part. The first was quickly controlled by ligature, but the other was difficult to manage. It was commanded by forcipressure. I believed that the forceps included the upper end of the destroyed vein (jugular). The forceps were left in position, as it was impracticable to put on a ligature above the forceps; moreover the patient's condition as regards respiration, there being frothy pink mucus at the nostrils and congestion of the face and head, was very threatening, and warned us to finish the operation as speedily as possible. The wound

was again irrigated, a packing of iodoform gauze was made around the forceps, and the antiseptic dressings and bandages were finally adjusted. No more bleeding occurred. In the course of two or three hours the breathing became less laboured, his complexion improved, and the pulse steadied. He quickly rallied after that. The operation was followed by congestion of the left lung, the side opposite to the one operated on. From this he had practically recovered on the eighth day. The superficial dressings were changed twice during the week, but the forceps and packing in the deep part of the wound were not disturbed until the sixth day. On that day the forceps and all but the deepest plug were removed. On the eighth day the last piece of packing was withdrawn. The after progress was very rapid, and the wound had so soundly healed by the twenty-fourth day that the patient was then able to leave the hospital. The ligatures remained buried in the healed wound.

Remarks.—With reference to the morbid action in this rare case, I would venture to observe—

First, that it was a morbid process removed by the operative procedures, and that that fact renders it improbable that it was other than a local disease.

Secondly, that it exerted a more destructive influence over the vein than the artery.

Thirdly, that it was not the result of suppuration, for there was no "pus" seen during the operation, nor any definite collection of fluid inflammation products.

Fourthly, that it was not a septic inflammation, as there was no toxæmia and no pyrexia.

Fifthly, the lymphatic glands which were exposed during the operation were hyperæmic, and in a state of inflammation, but as they were not dissected out, their precise condition was unascertained; nevertheless it may be said almost certainly that they were not tuberculous, nor syphilitic, nor septic.

Sixthly, it is surmised by myself that the deep-lying

glands were primarily affected by an inflammation ; and that the vessels, first the internal jugular vein and later the external carotid artery, were secondarily affected by the inflammatory action ; and I surmise further that the ensuing pressure and softening of the coats of the vessels led to their yielding to the force of the blood-current, and so on to the formation of the pulsating swelling.

In conclusion I would direct attention to the following subjects :

1. The diagnosis which presented so much difficulty.
2. The nature of the morbid action which opened and destroyed the vessels.
3. The immediate and ultimate abolition of the inflammatory process and its destructive tendencies, although no collection of pus nor any inflamed glands had been opened or removed.
4. That the external carotid near its origin, and not the common trunk, was the artery involved.
5. The value of the antiseptic mode of treatment in such a case.
6. The use of silk ligatures.
7. The absence of cerebral disturbance after the ligatures of the common carotid and internal jugular.
8. The encouragement given to deal promptly, early, and radically in similar cases.

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' Third Series, vol. iv, p. 59.)