

when he was admitted on the 24th. Complains of great uneasiness, and inability to swallow even his saliva; has not taken any food for the last eighteen hours. At a consultation held at 11 A.M., it was decided that the carotid should be ligatured, which was at once proceeded with. On placing him in the usual position for tying the root of the left carotid, an incision was made across the sterno-clavicular articulation of the left side, commencing about three inches on the clavicle, and reaching one and a half on the upper part of the sternum; an oblique one, about an inch and a half, was made along the margin of the sterno-mastoid, falling into the former; the skin, platysma, and cervical fascia, were successively divided; the attachment of the sterno-mastoid was separated close to the sternum and clavicle; the sterno-hyoid and sterno-thyroid were partially divided, and held aside; the sheath was exposed and opened on the inner side; and the artery secured in the usual way. On tightening the ligature, pulsation ceased in the tumour, which soon diminished in size. A bit of wet lint was placed over the wound, and the patient put into bed. He was able to swallow a little milk in about two hours after the operation. 6 P.M. Is very comfortable; says he is much easier than he was before the operation. One small vessel was tied, and the wound brought together with sutures. He takes beef-tea, jelly, milk, etc.

March 28th. Did not sleep last night; swallows much better. The tumour is less and harder; there is no pulsation in it. He can open the eye better, and the congestion is diminishing. Pulse 90, good volume. Respiration still stertorous, 24 in the minute. Tongue covered with white fur. Says he feels better.

March 29th. The sutures were taken out, and the edges of the wound kept in contact by strips of plaster. It has partially united at the ends. Sleeps well, and says he is comfortable. The tumour has shrunk considerably, and the larynx is gradually returning to its position. Bowels not open; urine escapes involuntarily; the catheter was passed, and about twenty ounces of urine were drawn off.

March 30th. Seems to be going on well; catheter used twice daily. Sleeps well, and takes plenty of liquid nourishment; a slight oozing of pus from the wound. Pulse 80; says he is comfortable, but has a slight cough.

March 31st. Not so well; tongue furred; pulse 100, with a slight jerk. Urine highly ammoniacal; bowels not open. Wound does not look so well; there is a blush around it, and more discharge; has slept, and takes his nourishment.

April 1st. Is worse; pulse 120; hard; tongue much furred; is restless and uneasy. Urine ammoniacal. Had but an indifferent night. Countenance depressed and anxious. Ale, one pint. Beef-tea, milk, etc., as before. 10 P.M. Is evidently worse; the face is more anxious. Pulse 120; feeble. Has not taken so much nourishment to-day. Does not appear to swallow so well. The sac is shrinking, and the larynx is returning more to its place. Wine, ten ounces, to be given at intervals.

℞ Liq. opii sed. ℥xx; sp. æther. sulph. co. ℥xx; mist. camph. ʒj. M. Fiat haustus statim sumendus.

April 2nd. Slept tolerably well in the night. Has taken the wine, etc., but there is no improvement in his condition; he has the glassy eye, subsultus tendinum, and pinched features; tongue dark brown and furred; pulse 130; very feeble; skin and feet especially cold. Mist. vini Gallici ʒj, omni horâ sumendum. Wine and beef-tea at intervals. 10 P.M. Is sinking fast; breathing hurried, and much rattling in his throat. Pulse rapid and weak. He died at 12 P.M.

Post mortem examination. The vessel was found firmly tied, three inches from its origin at the arch of the aorta, with a hard clot above and below the ligature. The heart large and flabby, the anterior coronary artery ossified, the posterior also, but not so much so as the anterior. The aorta, innominata, and carotids, enlarged. On opening the heart, the valves of the right and left side were reddened, as if from inflammation; the inner and middle coat of the aorta was of a deep red colour, the membrane was thickened,

and studded over with atheromatous patches, some of which were calcareous; the same diseased structure was found running up the innominata and its branches, as also the left subclavian and carotid. On opening the sac, a small aperture was found in the front of the left carotid, about the middle of it, and this dilated into a large pouch on either side; the inner one lying in contact with the pharynx, it was filled with firm fibrinous clots. On removing the top of the skull and dura mater, the arachnoid attracted attention; it was of a milky colour, and there was rather a copious secretion of serum lying in its folds; the pia mater was highly injected over the whole of the cerebrum and cerebellum; on cutting away the upper portions of the hemispheres, the structure of the brain was found much congested, but there was no difference in the consistence of the two sides; there was some serum in the ventricles. The carotid arteries, as they pass from the base of the skull, were ossified, the right the most so, it was one calcareous ring; the vertebral artery of left side was dilated to at least three times the diameter of the right; they were both healthy in tissue. The bladder was thickened; the mucous membrane inflamed and sacculated, with a phosphatic deposit in many parts; the prostate gland was about double its usual size.

I am indebted to my friend Mr. Newman, the house-surgeon, for the daily notes of the case after the operation.

ORIGINAL COMMUNICATIONS.

CASE OF ANEURISM OF THE LEFT INTERNAL CAROTID ARTERY WITHIN THE CRANIUM,

DIAGNOSED DURING LIFE, AND TREATED SUCCESSFULLY BY LIGATURE OF THE LEFT COMMON CAROTID ARTERY.

By R. W. COE, F.R.C.S.E., Surgeon to the Bristol General Hospital.

[Read at the Quarterly Meeting of the Bath and Bristol Branch, November 15th, 1855.]

In the middle of November 1851, I was requested by my friend Dr. Swayne to see a woman (Hannah Wray) with him, whom he supposed to be suffering from aneurism of one of the arteries of the head.

She gave me the following history:—

She was 55 years old, married, and had been in good health up to five months previous to the time of my seeing her, when she had had a very angry altercation with her husband; blows passed between them, she receiving some on her head; during the quarrel she worked herself into a most violent passion, and at the same time greatly exerted herself by lifting some very heavy weights. Within five minutes after these occurrences, in fact, as soon as she recovered a little from the excitement, she complained to a neighbour of an extraordinary sensation (a buzzing and beating noise) in the head, such as she had never before experienced, and which noise, she now tells me, has continued without a moment's cessation from that time to this (from June to November 1851).

She likens the buzzing, as she calls it, in her head to the puffing of a steam engine, "whish, whish, whish", and says that she hears it more distinctly with the left than the right ear, and that it is accompanied by a continuous sound like low thunder, emanating apparently from, and heard most distinctly at a spot situated near the posterior superior angle of the right parietal bone.

Since these symptoms came on, she has been unable to lie down in bed, and has been obliged to sleep in the sitting posture; and though always in the habit of dreaming, yet the dreams now are become of the most frightful character, disturbing her rest, and causing her to wake in an agony of terror.

On examination, no abnormal sound could be heard in the heart or great vessels; but on reaching the region of the neck, a very loud aneurismal bruit, synchronous with the pulse, was at once perceptible; it could be traced to the head, and heard distinctly over its whole surface, but most loudly over the left petrous bone; pressure on the right common carotid had not any influence over the sound, but when exercised on the left, caused it to cease immediately; though, after a time, she herself can hear a faint murmur, even whilst the pressure is continued, and that to the perfect prevention of the passage of blood through the artery. On listening very attentively with the stethoscope over the right carotid, the beat of that vessel could be distinctly separated from the bruit, which was also less loud on this than on the left side. There was a very trifling difference between the appearance of the two eyes, which I found to depend on a very slight squint inwards of the left eye, and a habit she had of winking with it. This peculiarity in the eyes came on subsequent to the buzzing in the head. She said she did not see so well with the left as the right eye; but the difference, if any, was very slight: she, however, always used the right eye for ordinary vision. On making her look at an object with both eyes, she saw two images, one by the side of the other; but they were not equally distinct: on closing the left eye, the less distinct image vanished. She herself was not aware of the slight strabismus, merely imagining that the left eye was rather the weaker of the two, and believing that she either winked or placed her hand before it simply for the purpose of guarding and saving it. She could, when she willed, abduct the left eye nearly as well as the right.

Her hearing was not affected; but the noise in the head was so great as to overcome even the sound of the rolling of the carriages in the street, unless attention was strongly directed to them. No tumour could be detected after a careful examination both of the external parts of the head and neck, as also of the nasal, buccal, and pharyngeal cavities.

My diagnosis was aneurism of the left internal carotid, as it enters the cavernous sinus, immediately after its emergence from the petrous portion of the temporal bone. I remarked, that I should consider the diagnosis perfectly verified in case of recovery, if the following phenomena should occur after ligature of the left common carotid: first, of course, if the bruit ceased; then, and more especially, if the strabismus in the left eye should quickly almost suddenly increase, until it showed that the paralysis of the external rectus muscle was nearly entire; and if, eventually, it were followed by slow but gradual recovery of the power of the muscle, as the patient regained her usual health: in other words, if the strabismus should eventually be recovered from.

Dec. 11th, 1851, 11 A.M. The patient being under the influence of chloroform, I tied the left common carotid artery; Mr. Morgan, Dr. Swayne, and Mr. Henry Swayne, being present. The only peculiarity in the operation was, that, in consequence of enormous distension of the anterior and external jugular veins, and of the branches connecting them, I was obliged to make but a small incision, and that not exactly in the ordinary position. On ligaturing the vessel, the rush at once ceased; but in a very short period it was succeeded by a very soft, almost continuous murmur, perceptible by applying the stethoscope immediately over the left ear. After the operation, she was able to retain the horizontal posture. At 4 P.M. of the same day, could hear no murmur myself; the patient says she hears a crackling in her head, and a noise like a bell.

Dec. 13th. Hears no noise in head, even when she listens attentively; nor can any be heard on applying the stethoscope to the temples. *She cannot turn the left eye out as much as before.* 10 P.M. She drew my attention to the fulness of the anterior temporal arteries of the right side.

Dec. 15th. Removed stitches from the wound, which is soundly healed, except where the ligature comes out. She dreamed a good deal last night—horrid dreams. Can now

hear carriages in the street distinctly, even when they are far off.

Dec. 18th. Slept well last night; no bad dreams, though she did dream, which she has always been accustomed to do.

Dec. 19th. Dreams of a funny character, instead of frightful.

Dec. 22nd. Dreams still more ludicrous in their character.

Dec. 29th. *No improvement in squint.*

Dec. 30th. Does not dream so much.

January 6th, 1852. *Left eye seems to be moved more outward.*

Jan. 13th. Ligatures came away in the evening. It will be perceived that the ligature was a long time coming away—thirty-three days. Since Jan. 5th, slight traction was used on it by means of an India-rubber band. I was indebted for this idea to some remarks made by Mr. Clarke at one of our meetings.

Feb. 2nd. Continues improving, but complains of indistinctness of vision when using both eyes. Has regained the power of abducting the left eye to nearly its full extent.

Feb. 16th. Indistinctness of vision still remains when using both eyes. *Abduction of left eye nearly perfect.* Patient may be considered well.

REMARKS. This case is, I imagine, unique as regards diagnosis; it is, as far as I can ascertain, the only instance in which aneurism of the internal carotid artery within the cranium has been diagnosed during the life of the patient. In giving the history of the case, I purposely avoided offering any explanation of the symptoms. I will now, therefore, in conclusion, mention the grounds which led me to form my opinion in the first instance: these, taken in connexion with the phenomena which ensued after ligature of the left common carotid, will go far to render the correctness of that opinion a matter of certainty.

The suddenness of the accession of the symptoms, coming on as they did under the influence of such exciting causes, together with the character of the bruit, as heard both by the patient and myself, pointed at once and clearly to lesion of a blood-vessel. The absence of the bruit in the heart and great vessels, its being heard at the lower part of the neck, and with gradually increasing intensity towards the head, showed that it originated either in one of the common carotid arteries, or in one of their branches, or else in one or other of the vertebrales. The effect of pressure on the carotids demonstrated that it was the left common carotid or one of its branches that was affected. On carefully tracing the sound, its point of greatest intensity was the petrous portion of the left temporal bone.

In addition to the bruit heard by the patient, you will remember that she also heard, somewhere about the situation of the posterior superior angle of the right parietal bone, a *continuous* murmuring sound, which she compared to low thunder. Now, any sonorous vibrations, produced immediately in contact with the petrous bone, would be conveyed through the walls of the skull—principally by means of the thickened bony ribs, as they may be called, of the cranium, which arise from various parts of the cranial base, and pass up the sides and over the vault of the skull—and would meet at some point at or near the posterior superior angle of the opposite parietal bone; and the vibrations, though intermittent at their origin, would, from the fact of their being conveyed through channels of different length and various conducting power, be no longer heard at the spot mentioned as possessing the same intermittent character as that with which they originated, but would become mingled together, some traversing rapidly, so as to join with the vibrations of the beat before, others slowly, so as to unite with those of the beat after: the interval between the beats would thus be filled up, and the sound heard would necessarily no longer be an intermittent, but a continuous one. The situation of the disease was then not only in the neighbourhood of the petrous bone, but touching it: no tumour could, however, be detected either externally or in either of the nasal, buccal, or pharyngeal cavities. The mischief

must, then, be located in the carotid canal of the petrous bone, or immediately in the inner side of it.

The patient had yet one other symptom, but not very easily detected, which came on subsequent to the buzzing in the head, and which, when ascertained and properly appreciated, decided the matter. She had slight, very slight paralysis of the external rectus muscle of the left eye; which muscle is supplied by the sixth cranial nerve, which is devoted solely to it. Now, of all the nerves which go to the muscles of the eyeball, the sixth is the only one that passes through the cavernous sinus, the remainder being lodged in the external wall; and it passes through the sinus in direct contact with the external aspect of the internal carotid artery, immediately on its emergence from the carotid canal. A small tumour of the vessel in this situation would account for all the symptoms, not only for those having direct reference to the bruit and strabismus, but also for the inability to lie down; the system being as it were conscious of some imminent danger threatening it, and feeling that it was less likely to suffer injury, the weight of the column of blood being restrained from pressing on the aneurism. (The sitting up may be fairly likened to an ordinary automatic consensual action.) It would also explain in some degree the horrid character of the dreams, which were in all probability produced partly by this constant indefinite sense of danger to which I have alluded, and partly by disturbance of the cerebral circulation.

The double vision, when looking with both eyes, was simply owing to the disturbance of the *usual* axis of vision, produced by the recent and increasing internal strabismus; and the trifling indistinctness of vision was due perhaps to less blood passing through the left ophthalmic artery, thus diminishing the supply to the retina. I am rather inclined to believe that throughout she confounded the effects produced by the continual alteration of the usual axis of vision, first in one direction, then in another, with true indistinctness of vision; though there could not be any doubt but that she saw slightly better with the right than the left eye, and just so much better as a comparatively freer arterial supply would account for.

There could, then, be little hesitation in deciding that the case was one of aneurism, and I had little misgiving but that it was in the situation I have stated I thought it was. But, before operating, I said that I should consider somewhat sudden increase of the paralysis of the external rectus muscle, if followed by its gradual and perfect recovery, as the patient improved and time rolled on, to be perfectly confirmatory of the correctness of my opinion; the view I took being, that the existing slight paralysis of the left external rectus muscle was caused by pressure on the sixth nerve, as it crossed the artery, by a small aneurismal tumour, containing principally fluid blood; but that, when the common carotid should be tied, then a clot would form in the tumour, producing harder and firmer pressure on the nerve, and consequently more marked paralysis of the external muscle; and that, as the clot diminished in size, and became absorbed, the pressure would be taken off the nerve, and it would then resume its functions. The after history of the case, as you have heard by the notes, fully bore out this idea.

In reference to the substitution of a gentle almost continuous murmur immediately after ligaturing the vessel, for the loud whizzing sound previously existing—the substitution being recognised by the patient, and by those present at the operation—it was caused, I presume, by a continuance of the passage of blood, but with diminished force, into the tumour, by means of the circle of Willis. At 4 P.M. of the day of the operation, and about five hours after it, this murmur could no longer be heard either by the patient or myself; and was succeeded in its turn by a crackling noise in the vicinity of the ear, audible only to the patient: this quickly ceased.

In addition to the positive evidence afforded by the symptoms in this case, everything that is known of the pathology of the cerebral vessels, in persons of the age of this patient, tends to show the probability of such a lesion

occurring, under the circumstances in which this woman was placed. I allude to Paget's researches on fatty degeneration of the coats of the cerebral arteries; Virchow's remarks on aneurismal dilatation of the same vessels, caused by paralysis of their muscular coat; to Rokitsansky's general investigations on the effects produced by atheromatous deposit on and degeneration of the inner arterial tissues; those effects being either rupture of those tissues and dilatation of the cellular coat, or laceration of all the coats.

Finally, there are records of the discovery, *post mortem*, of aneurism of the internal carotid artery in the cavernous sinus. Romberg, in his work on *Diseases of the Nervous System*, gives *in extenso* the history of a most horrible case of facial neuralgia of the left side, which was ascertained to depend in great degree on pressure of the Casserian ganglion of the same side by an aneurism of the left carotid artery in the cavernous sinus. In 1836, there was published at Berlin a dissertation by Stumpf, *De Aneurysmatibus Arteriarum Cerebri*. In this he gives two cases of aneurism affecting the internal carotid artery in the cavernous sinus. I have been unable to procure the original dissertation, and only quote from memory a reference made to it.

I hope that the account of the symptoms of this case, prior and subsequent to the operation, taken in connexion with the known pathology of the cerebral vessels, will lead you to believe that the diagnosis was a correct one, and the treatment adopted not only justifiable, but imperatively called for.

I may state, that I have seen the woman within this week; that she still continues well; and that, in fact, she expresses herself as feeling much better than she did before her illness.

TWO CASES OF ABSCESS OF THE NECK, WHICH OPENED INTO THE TRACHEA.

By GEORGE POUND, Esq., Odiham.

ON the 25th of July, 1853, I was requested by a woman, who lived in a village two or three miles from hence, to go and see her child, who had been ill for a week or ten days with whooping-cough. I was informed that on the 23rd (two days previous) the child, who was two and a-half years old, had been seized with a paroxysm of coughing, more than usually severe, and that immediately after, a swelling was perceived over the upper part of the chest, and extending to the side of the neck and face. On visiting the patient, I found as the mother had said, in addition to a severe attack of whooping-cough, a distinctly circumscribed swelling, situated over the upper part and in front of the sternum, nearly as large as an inverted tea-cup, very hard, but not particularly tender. The swelling, which was described as extending up the neck and jaw, had disappeared. The pulse was quick, tongue furred, breath very offensive, bowels confined. I ordered an aperient, to be followed by saline pectoral medicine, and a blister to be applied over the swelling. I found, on my second visit, that the swelling had shifted its position, and was now placed directly in front of the trachea; that it was soft and fluctuating, and about the size of a hen's egg. The child was very flushed, its breathing quick and laboured; tongue more coated than before, and the odour of the breath most offensive. The bowels had been freely moved. There was expectoration of small quantities of blood mixed with matter. Having made an opening into the swelling, half a teacupful of very offensive pus was evacuated, mixed with bubbles of air, showing that the abscess had already opened into the windpipe. The puncture gave immediate relief. By August 2nd (the last entry relating to the case in my note book) the wound had nearly closed, and the patient was fast getting better.

About two years after, viz., on the 6th June, 1855, I was sent for in great haste to go and see A. B., a girl, aged six years, who was said to have vomited blood. I found the