A CASE
OF
ANEURISMAL TUMOUR
IN
THE ORBIT,

CURED BY TYING THE COMMON CAROTID ARTERY.

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READ FEBRUARY 26TH, 1839.

THE case which forms the subject of this paper occurred nearly three years ago ; but I have deferred giving an extended account of it, until time should have ratified the apparent success of the treatment.

Within the last twelve months I have had an opportunity of examining the man, and of ascertaining that no vestige remained of the aneurismal disease for which the operation was performed. The success of this operation may therefore, I presume, be considered certain.

Robert Simmons, a seaman, aged 20, of very healthy appearance, was admitted into the Seamen's Hospital July 13, 1835, exhibiting the usual symptoms of severe concussion of the brain.

There was considerable hemorrhage from the right

ear, a small wound behind the left, and some tumefaction over the right temple. He was pale and cold, and nearly insensible; but could be roused with difficulty.

It was stated that he had received from the gaff of the vessel to which he belonged, a severe blow on the right side of the head, by which he was immediately rendered insensible, and he continued nearly so to the time of his admission. He rallied considerably in an hour or two. The hemorrhage from the right ear continued all night; the next day, he was quite sensible, but appeared dull, and did not complain of any pain. The pupils were natural; the usual treatment was pursued. On the 15th he continued very dull, and was found to be quite deaf in the right ear. The eyelids and integuments about the left eye were swollen, from serous effusion; the pupil of that eye was dilated and fixed; and he was unable to move the globe of it in any direction. There was also slight paralysis of the facial muscles on the left side. The pupil of the right eye, and the motion of the globe were unaffected. On the 16th his general state was somewhat improved; the eye and face in the same condition. On the 18th he complained of head-ache, only over the left eye, the pupil of which was observed to be elongated downwards, and vision in that eye was slightly impaired. The only motion of the globe was an almost imperceptible rotation on its axis; and this motion was apparently involuntary. On the 24th his gums were slightly affected by mercury, and he complained, for

the first time, of what he termed an "uncomfortable numbness" in the left side of the face, and a sensation of dryness of the mouth, which, however, was as moist as possible. Some purulent discharge occurred from the right ear. On the 25th, the integuments of the face and nose, and the scalp, nearly to the vertex on the left side, had become exceedingly tender to the touch, without any morbid appearance. The eye was in the same condition. On the 28th he complained of pain in the left eye, which had become inflamed from constant exposure, consequent on the paralysis of the orbicularis. On the 31st, the lower half of the cornea had become nebulous, and pus was apparent between its laminae. The eye, however, was much less painful than it had been; and he had hardly any head-ache. The discharge from the ear had stopped, and his general health was pretty well restored. On the 14th of August, the discharge from the right ear had recurred slightly, and he complained of various noises, like the ringing of bells, in his head. The left eye was free from pain, but the onyx was increasing; the paralysis continued the same; by the 3rd of September the anterior laminae of the cornea had ulcerated, and allowed the escape of the interstitial matter; and the paralysis continued unaltered.

No change of importance took place until about the 20th of November, when he became affected with small-pox; he was sent to the Small-pox Hospital, whence he returned on the 1st of December. On his re-admission, the state of his face appeared

unaltered. The eye was generally prominent, and the conjunctiva much inflamed. The ulcer on the cornea was very large, and in an irritable state. The severity of these symptoms was soon subdued, but all attempts to remove the paralysis proved abortive. Sensibility, however, in some degree returned, preceded by anomalous painful feelings in the affected integuments.

Towards the end of January, as his condition appeared to have been stationary for some time, and he was very desirous of going home, he was on the point of being discharged ; at this time his general health was very good ; he was quite deaf in the right ear, but could hear very well with the left ; paralysis of the muscles of the globe of the left eye, and of the left side of the face, was still present ; sensibility was in some degree restored. The ulcer on the cornea was filled up, leaving an opaque cicatrix which occupied more than its lower half. Through the upper half, which had retained its transparency, he could see very well when the upper eyelid was raised. The globe of the eye was very prominent, and the eyelids were generally swollen ; several large, tortuous conjunctival vessels were observed, passing to the lower edge of the cornea.

On the 1st of February, when examining the eye, I for the first time perceived a distinct pulsation of the globe ; and on more close investigation, detected also a firm pulsating tumour in the upper and inner part of the orbit, immediately within the superciliary

ridge, and about half an inch in its transverse and longest diameter.

This tumour appeared to be situated between the levator of the eyelid and the bone, and was not evident externally ; but when the eyelid was raised, it caused some projection of the loose conjunctiva. The pulsation of the tumour was accompanied by a very distinct thrill, which could also be felt on pressing the parts in its immediate neighbourhood. Through a small ivory stethoscope a very loud whizzing sound was communicated ; this could also be heard on applying the instrument over the inner canthus of the right eye, and on the left side of the frontal bone, as high as the roots of the hair, and nearly as far back as the ear. The eye felt hot and uneasy ; but, otherwise, he had no pain, and complained principally of very loud noises in the head : those in the right ear like the sound of church bells, and those in the left, the breaking of waves on the sea shore.

As temporary pressure on the left common carotid put a stop to the pulsation in the tumour and eye, and to the accompanying sounds, as well as to the noises in the head, it appeared clear that they all depended on a common cause, and that, probably, an aneurism of some vessel within, or close upon the orbit. I was not at the time aware of the two similar cases to which I shall afterwards refer ; but entertained no doubt as to the propriety of treating this like an aneurism in any other part, and of tying the left common carotid. Twenty ounces of blood

were taken from his arm the same evening ; and, on the following day, February 2, the carotid was tied in the usual place and manner. Immediately on tightening the ligature, the pulsation of the tumour, and that communicated to the globe, ceased, together with all the sounds, both internal and external. In the evening, four hours after the operation, obscure pulsation could be felt in the tumour, which had not however resumed its original size. The whizzing sound could also be plainly heard through the stethoscope, and over the same extent of surface as before the operation. The internal noises were also, at intervals, nearly as loud as before, but were sometimes absent. There was no pulsation in the temporal artery. He complained of pain in swallowing. Pulse 110. An opiate was given, and an evaporating lotion applied to the face and head.

The next morning the pulsation was very obscure, and the sounds much diminished. He had not slept, and complained much of pain on deglutition and on coughing, and of severe pain in the left hypochondrium. Pulse 120, sharp. A bleeding of sixteen ounces afforded immediate relief, and in the evening he was easier in every respect. On the 4th no remains of the tumour could be felt, and all pulsation was gone from the orbit, nor could any sound be heard by means of the stethoscope. The internal noises were also quite absent, and his hearing was somewhat improved. Pulse 100 soft ; skin moist ; and tongue clean.

On the 6th the eye appeared less vascular than

before the operation, and was not so prominent. He had occasionally some noise in the left ear, but none in the right. A small quantity of grumous blood passed from the left nostril during the night. On the 11th the eye was still more retracted within the orbit, and there was no pain nor pulsation. He sat up several hours. On the 15th the ligature came away, and the 18th his state is thus noted:—The wound was much contracted; the eye hardly prominent, and much less vascular. The ulcer in the lower half of the cornea filled up, leaving a dense leucoma, to which ran a large tortuous vessel. Vision perfect as far as the loss of transparency of the cornea would allow. There was no pulsation, nor any noises. Pulse 70, soft; appetite good; no pulsation in the temporal artery. The paralysis of the left side of the face and muscles of the globe continued complete; but sensation was perfect except on the left side of the nose; and he was more deaf in the left ear than in the right. From this time no material change took place, up to the time of his discharge from the hospital, on the 28th March 1836. He complained almost constantly of pain, commencing about the infra-orbitary foramen, and extending towards the nose, which was in some degree relieved by the use of veratria.

He went to a distant part of the country, and I had not an opportunity of seeing him again for about seven months, when he had resumed his occupation as a seaman, and came to London in that capacity. His general health and strength appeared quite re-

stored, but the local symptoms were about the same as when he left the hospital. The paralysis of the face continued; sensation, however, was perfect, and he was quite free from pain. He was still deaf in the left ear, but heard tolerably well with the right. I saw him again about eleven months ago, on his return from a voyage to Quebec; he was then in perfect health, and the paralysis of the face appeared slightly diminished. The deafness continued in the left ear, and in the right about half the membrana tympani was deficient; but on that side he heard tolerably well. The exposed cornea and conjunctiva had become xeromatous; but the eye was free from pain or uneasiness, and appeared rather deeper in the orbit than the other. The upper half of the cornea was clear, and vision through that part unaffected. The pupil was fixed. No trace of tumour or pulsation could be detected in or about the orbit; and no pulsation could be felt in the carotid, or any of its branches.

Two cases, by description very much resembling the one I have now related, are recorded in the 2nd and 6th volumes of the Transactions of this Society; the former by Mr. Travers, the latter by Mr. Dalrymple. A case of supposed aneurismal tumour in the orbit is reported by Schmidt in the 1st volume for 1831 of Ammon's *Ophthalmological Journal*; and Mr. Guthrie, in his work on the operative surgery of the eye, also mentions a case seen by himself, and examined after death. These are, as far as I have been able to ascertain, all the reported cases

bearing any resemblance to the one above related. Dupuytren is said to have extracted an eye for a similar affection ; but the account of the case in the *Revue Medicale* is by no means clear. The exact nature also of the affection in Schmidt's case is not very easily deducible from the account given ; but the tumour appears to have presented little of the aneurismal character, as it was destitute of pulsation. Before the operation undertaken for its removal, it was considered to be an encysted tumour ; but, when cut into, its structure was found to be cellular, and it afforded a copious flow of arterial blood. The incisions, however, appear to have healed readily, and the tumour to have become dispersed. In Mr. Guthrie's case the affection occurred in both eyes ; and with the exception of external tumour, the symptoms are stated to have been similar to those in Messrs. Travers and Dalrymple's cases. The case of Mr. Guthrie is particularly valuable in having afforded an opportunity of ascertaining, by examination after death, the exact nature of the affection, and, consequently, proving the possibility of considerable sized aneurisms being formed by the ophthalmic artery, without material impairment of the functions of the optic nerve.

It may thus afford some assistance in attempting to form a correct opinion as to the real nature of the affection in the other cases, to which it is stated to have borne a resemblance, and also in the one the account of which I have just presented.

I have alluded to these two cases partly with a

view of drawing attention to the probability of the supposition I am inclined to adopt, of their being instances of true aneurisms in the orbit, and not, as has been considered, of erectile tumours or aneurism by anastomosis ; and, in support of this view, I would venture to suggest, that these cases agree in three essential particulars.

1. The sudden accession of the disease, attended with pain.

2. Its rapid increase.

3. The powerful pulsation occurring in the tumours when recent and small ; in all of which circumstances do they differ from the erectile tumours, as described by Mr. John Bell under the name of aneurism by anastomosis ; and when to this is super-added the strong aneurismal whizzing sound, which was heard over so extended a space in the present instance, and which may possibly have existed in the others, as they were attended with similar internal noises, the presumption of the affection being in all really an aneurism of some vessel in the orbit, appears to me materially strengthened ; and Mr. Guthrie's case may possibly lead to the supposition of the ophthalmic artery itself being the seat of the affection.

The success of the treatment by ligature of the carotid cannot be adduced as further proof of the correctness of this view, since the same success attended that operation for an undoubtedly erectile tumour of the antrum in the hands of Mr. Pattison ;

for an external *nævus* in one of these cases in which it was employed by Mr. Wardrop.

P.S.—I have been very lately favoured with an account of a case which occurred to Mr. Scott of the London Hospital, which bears so great a similarity to the one I have just related, that it may perhaps be considered an interesting addition to the paper.

A boy, William Cooper, who had fallen into a ship's hold, was brought to the London Hospital, October 2nd, 1834, with concussion of the brain, violent contusion and swelling on the right side of the head, and protrusion of the right eye, which was fixed and motionless, the pupil dilated, and vision lost. There were no symptoms of cerebral pressure.

He gradually recovered from the concussion of the brain, the eye becoming gradually more prominent. The protrusion of the globe immediately after the accident, without symptoms of cerebral compression, proved that it arose from extravasation of blood within the orbit, and the further continued protrusion rendered it probable that the aperture in the vessel from which the blood escaped had not closed :—the symptoms were not so acute as to indicate suppuration. As the globe became more prominent, pulsation was felt on pressure, and when the palpebræ were separated, the eye could be distinctly seen to be propelled forward at each stroke of the heart.

Pressure was made on the globe ; but, after being borne for two days, it occasioned so much pain that it was abandoned. On Tuesday, November 10, just after examining the eye, a profuse arterial hemorrhage occurred from the nose. Mr. Scott commanded it by pressure on the common carotid artery, and immediately secured that vessel. The protrusion of the globe directly receded in a great degree, and its prominence afterwards gradually diminished.