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CASE OF VASCULAR PROTRUSION OF THE EYEBALL.

BY

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(Report by Mr. PERKINS, Dresser in the Eye Ward.)

CHARLOTTE H—, æt. 42, widow, a charwoman; admitted to Guy's Hospital March 3rd, 1880.

Family History.—Does not know much about her relations. Her father died thirteen years ago, æt. 45, from an abscess (?) in the front of the chest, for which he was operated on in St. Bartholomew's Hospital, and died three days after the operation.

Personal History.—Patient had rheumatic fever and dropsy two years ago; has had sore and ulcerated throat, no other history of syphilis. Denies excess in alcoholic drinks, but has the appearance of—and probably is—an inveterate drinker.

History of present illness.—About six months ago first noticed that she was becoming rather deaf in the left ear, and began to perceive a ticking like a watch in the same ear. The ticking has continued and the deafness has increased.

About four months ago had an attack of inflammation in the left eye, she then noticed that the sight of that

eye was impaired, believes it had previously been good. The sight of the left eye has grown gradually worse, and during the last month the right eye has failed slightly. Has noticed the left eye "increases in size" during coughing, stooping, or straining in any way. Two months ago noticed that left eye was permanently more prominent than the right; the prominence has gradually increased, but more slowly of late than at first. Gives no history of any blow or fall on the head.

On admission.—Patient is a stout, strong-looking woman; face rather bloated, showing a good deal of capillary congestion especially about the nose.

The left eye is pushed straight forward as if by a tumour directly behind the globe, the lids can be closed over it; the upper lid is puffy and swollen. Nearly the inner half of the lower eyelid is occupied by an elastic strongly pulsating tumour, evidently a greatly dilated blood-vessel. The conjunctiva is vascular and œdematous; the blood in the distended vessels is dark coloured and apparently venous. The protrusion of the eyeball is increased by stooping or coughing, its movements are but little interfered with; there is no diplopia. Vision of left eye $=\frac{1}{6}$, of right eye $\frac{1}{3}$. The pupils are equal, but the action of the left is rather sluggish. The ophthalmoscope shows venous congestion of the retina. Patient complains of no noises in the head beyond the ticking in the left ear already referred to.

Beyond the swelling in the lower eyelid, no tumour can be felt in or about the orbit; there is marked pulsation beneath the upper eyelid close to the inner canthus. A loud, whirring, systolic bruit, can be heard over the whole head, but is especially loud over the centre of the left parietal bone, and closed eyelids of the left eye. The bruit entirely ceases and all pulsation is stopped by pressure on the left common carotid.

Mr. Purves examined the patient's ears and reported as follows:

Left ear: hearing 6″ by watch. Hearing by fork on

mastoid normal. Drum fallen in so that incus end is seen against inner side. Excursion of drum especially at lower and anterior part excessive. The drum is permeated by numerous capillaries. The cavity contains exudation. The bruit is heard by the tube in the meatus better on the left than on the right side, synchronous with pulse.

The patient was put on low diet, kept lying down the greater part of the day with an ice-bag applied to the head; the bowels were kept freely open.

April 15th.—All the symptoms were aggravated. The patient was placed under the influence of an anæsthetic (alcohol, chloroform, and ether mixture). Mr. Higgens ligatured the left common carotid immediately above the omo-hyoid muscle. There was no difficulty about the operation, a silk ligature was used and its ends left hanging out at the lower extremity of the wound, which was closed with very fine silk sutures and covered with a piece of dry lint and large pad of cotton wool, secured by strapping and bandage. On tying the ligature the left side of the face became blanched, the distended conjunctival vessels empty, all pulsation ceased, and the bruit became inaudible; there was no change in the pupil, no convulsion or paralysis.

16th.—Patient feeling very well, has passed a fair night, but did not sleep much. Eye much less protruded, no bruit to be heard, no pulsation, ticking in the ear continues; no hemiplegia or loss of sensation, complains of frontal headache, and is rather troubled by cough and slight bronchitis, which she has had off and on for years. Temperature 98·3°, pulse 90, morning. Temp. 98·4°, pulse 84, respirations 17, evening. Ordered Pot. Bromide gr. x, Mist. Cascarillæ co. ℥j, ter die.

17th.—Temperature and pulse normal, headache continues, no bruit or pulsation. Slight loss of motion and sensation in right arm; she moves the arm slowly and feebly, and sensation though slightly is decidedly diminished. The left leg is unaffected. The wound was dressed; all but the lower part occupied by the ligature had healed by primary union. Face rather flushed.

18th.—Headache better; has ice-bag applied to head. Face less flushed. Right arm can be moved better and its sensation is nearly normal. No bruit or pulsation. Four or five times during the night noticed numbness in the right hand; she got rid of it by shaking. Morning, temp. 98·2°, pulse 104, resp. 22. Evening, temp. 98·3°, pulse 100, resp. 17.

19th.—Not so well this morning, seems weak and complains of intense headache, cannot bear the weight of the ice-bag. There is neither bruit nor pulsation. The right arm is completely paralysed, it lies motionless on the bed, she cannot even move the fingers; sensation is slightly diminished. The movement of right leg is slightly affected. The paralysis comes and goes, she is much better for a time then worse again. Patient did not sleep well last night; yesterday afternoon was feeling very faint, and last evening the hemiplegia became worse and has not decreased much since; the leg was flexed and the arm slightly so. This evening, temperature of left side is 98·6°, whilst that of the right is 100°, so that the paralysed side is nearly a degree and a half warmer than the unaffected side. Pulse 104, respirations 22. Feet and hands are cold, the right foot is a little contracted, the arm not, the face is unaffected; there is some difficulty of speech, no aphemia.

Wound dressed, some of the sutures removed. Ordered hot-water bottle to feet, evaporating lotion to head, strong beef tea; to have twenty grains of chloral at night if necessary.

20th.—Passed a good night, is feeling and looking much better, no flushing of face, headache much less, extremities warm; sensation in arm and leg normal, can move leg fairly well, but slowly; arm completely paralysed, no contraction present, no difficulty of speech. The eyeball has returned to its normal position. The temperature of the right side is still about a degree and a half higher than the left (right 101·1°, left 98·7°.

The next day, April 21st, the paralysis of both right

arm and leg, so far as motion was concerned, was complete. The wound was dressed and looked well. There was no headache, no pulsation in facial or temporal arteries, and no bruit could be heard (temperature, right 100·2°, left 98·6°).

On the 23rd there was an attack of conjunctivitis in the left eye, the skin around the wound looked red; the remaining sutures were removed, and Haust. Sennæ ℥j given. There was little change for the next two days. The temperature was not taken after the 25th, at which date there was but little difference between the two sides, that of the paralysed side being, however, rather higher than that of the non-paralysed side (left temperature 98°, right temperature 98·4°).

26th.—Patient feeling much better, the conjunctivitis of the left eye has subsided; can move all the fingers of the right hand and can lift the right leg off the bed; still complains of the ticking in the ear; wound entirely healed excepting the portion of it occupied by the ligature; there is neither pulsation nor bruit. The paralysis went on rapidly improving. On May 8th the right arm and leg could be moved as well as their fellows of the opposite side; the grip of the right hand, however, was not quite as strong as that of the left. On May 12th there had been occasional slight paralytic attacks on the right side which lasted a short time and then passed off. It was noticed that the left pupil was smaller than the right.

On May 18th (the thirty-fourth day since its application) the ligature came away.

24th.—Some bleeding from wound yesterday; it was, however, easily controlled by pressure with pad and bandage, and did not recur.

31st.—Pupils unequal. Slight pulsation can be felt in facial, temporal, and supraorbital arteries.

June 5th.—Patient up and about the ward, feels well, but rather weak; has had no more attacks of paralysis; the right arm and right leg are not quite so strong as the left arm and leg; can walk well. Pupils equal in size; some

large, tortuous, and dilated veins in conjunctiva of left eye; no protrusion of eyeball. Wound healthy and nearly healed. Some pulsation in temporal, facial, and supra-orbital arteries, and in the dilated vessel in the lower eyelid. Patient's hair, which on admission was nearly black, is now quite grey, and greyer on the left side than on the right.

11th.—Left the hospital.

14th.—Left pupil rather smaller than right, veins of retina full, some large veins in conjunctiva; eyeball slightly more prominent than its fellow. No bruit can be heard. Grip of right hand as strong as that of left. Left pupil dilates fully with atropine.[1]

Remarks.—The name, "vascular protrusion of the eyeball," is that adopted by Mr. Nunneley, and seems to commend itself because it does not refer to any one particular symptom, or to any special pathological change; it merely states that protrusion is due in some way to the condition of the blood-vessels.

The whole subject has been so thoroughly exhausted by Mr. Rivington in his paper on "Pulsating Tumours of the Left Orbit," published in the fifty-eighth volume of the 'Transactions' of this Society, that beyond making a few remarks on my own case and giving short abstracts of two cases published since the date of Mr. Rivington's paper, I find nothing left to record.

In my case the disease was probably of spontaneous origin; its progress was very gradual, and at no time were there any of the violent symptoms mentioned in many of the reported cases. In spite of the very loud bruit the patient did not complain of distressing noise in the head. She merely mentioned a ticking in the ear, which was probably not connected with the cause of the protrusion of the eyeball, at any rate it continued after all the other symptoms had disappeared.

[1] The patient remained perfectly well and was shown in the Museum of the International Medical Congress on August 9th, 1881, at which time it was hard to tell which had been the affected eye; no sign of paralysis remained.

The cause of the hemiplegia is not very evident. It commenced on the second day after ligature of the carotid, was partial and varied from time to time, but became complete on the sixth day and remained so till the twelfth, when it began to pass off, and had disappeared entirely by the twenty-fourth day. It could not have been due to cutting off of blood supply, or it would have appeared immediately; neither could softening of the brain have caused it, it made its appearance too soon and passed off too quickly and completely. It seems more probable that some serous effusion took place, which afterwards became absorbed.

The following are short abstracts of two cases published in the 'American Journal of Medical Sciences,' January—April, 1876 and 1877.

The first, by Dr. Morton, surgeon to the Pennsylvania Hospital, is headed "Supposed intracranial aneurism, ligation of the common carotid artery; death; autopsy."

History, &c.—Female, æt. 23; left orbit. While walking along a country road was seized with sudden, sharp, darting pain in left temple. The pain soon recurred, and became agonising. In the evening there was sickness, whizzing noise in left side of forehead and temple, and swelling of the tissues of the orbit. Next morning the eyeball was so prominent that the lids could not be closed over it. The vision was much impaired, and lost in forty-eight hours after first seizure.

When first seen.—Left side, extreme exophthalmus; eyeball fixed and motionless. A loud aneurismal bruit heard over left side of head, especially in temporal region and through eyeball. No pulsation perceptible; pressure on left carotid controlled bruit. Incision made in conjunctiva, orbit explored with negative results. Cornea sloughed.

Seven days after the patient was first seen, and fifteen from first onset of disease, the left common carotid was ligatured. The bruit ceased at once; the exophthalmus speedily subsided. The patient died rather suddenly on the following day.

Post mortem, made under unfavorable circumstances, showed no trace of aneurism. The anterior portion of the left hemisphere of the brain was softened at its under surface, with marked evidence of recent inflammation. All the nerves and blood-vessels entering the sphenoidal fissure were firmly glued together by recent lymph. The venous trunks in the locality were greatly distended with firmly clotted blood. The left internal carotid was normal. On the right side the sinuses were free from clot, but the right internal carotid showed a slight enlargement at the point of giving off the middle and anterior cerebral vessels.

The second case is by Dr. Frothingham, Professor of Ophthalmology, University of Michigan, and is headed "Pulsating tumour of orbit resembling true aneurism; ligation of common carotid; subsequent removal of tumour; recovery."

History.—Female, æt. 35; left orbit. Left eyeball becoming gradually more and more prominent for three years. No pain or serious discomfort at first.

When first seen.—Eye much protruded, moved perceptibly with each pulsation. Loud bruit heard over temple and eye. Compression of common carotid stopped the bruit and pulsation and allowed the eye to recede somewhat into the orbit. A soft, elastic, pulsating tumour could be felt on pressing the finger into the orbit at its outer angle. The eye could see well enough to allow the patient to distinguish the features of persons at several feet distance. True aneurism diagnosed. Compression was tried without success; subsequently the common carotid was ligatured. The immediate effect of the operation was to cause cessation of the bruit and pulsation, and considerable diminution in size of the tumour. The pulsation returned to some extent in fourteen days. Giddiness and cerebral symptoms for several weeks.

More than three years later there was considerable increase in the size of the tumour, which could be felt

projecting far beyond the lower margin of the orbit, and was now diagnosed as aneurism by anastomosis. Two months later eyeball and tumour removed. Patient recovered rapidly from the operation and returned home fourteen days after.

The tumour consisted of two portions; a dense portion and a mass of convoluted and sacculated vessels, held together and connected to the more solid portion by connective tissue. The more solid portion differed from the other in having a greater quantity of more dense connective tissue. It was permeated freely by blood-vessels, and in structure appeared much like a sponge.