

common functional object. At first the tongue prattles; it is only by habit, and aided by frequent repetition, that the motions become sure, and that this central communication of the nerves grows easy and complete. Nevertheless, it is only with age the function is printed definitely in the organisation. A young child who ceases to hear gradually loses the faculty of speech which it had acquired, and again becomes dumb; while the adult man placed in the same conditions never loses speech, because in him the centre of language is fixed, and the development of the brain complete. At this period of life the functions of the acquired centre have become really involuntary, as if they were innate. Speech in the accomplished orator is, as it were, instinctive; and all of us have seen the practised musician's fingers execute of themselves the most difficult pieces without the assistance of the mind, which is often occupied by other thoughts." And it may be added that speech may continue on and on for a long time without the individual being at all conscious of it. There are very few persons who have not read aloud for an hour or more for the entertainment of others, while their thoughts were engaged in the contemplation of subjects entirely foreign to what they were doing, and unable at the close to bring into mind a single fact of the many they had just repeated with their lips. In such instances the vocal act is simply sensorimotor, the visual impression of the printed letters upon the sensorium commune being sufficient to keep up the movements of the muscles of the organs of speech.

Two essential factors, then, as Dr. Maudsley states, enter into intelligent speech—the idea, and the motor act; "the former having its seat in the grey matter of the convolutions; the latter proceeding from the nerve-centres of the motor nerves which go to the tongue and other muscles concerned in speech. The subordination of motor to ideational nerve-centre here is in conformity with the subordination of all other motor centres to the supreme ideational centres; and the muscular acts of speech proceed from their appropriate motor centres, just as the muscular acts of a limb which is accomplishing some intelligent purpose proceed from its appropriate motor centres." An idea formed in the cortical substance of the cerebrum effects an impression upon the sensorium commune—the seat of consciousness, according to Dr. Carpenter, not only of external but of internal impressions—through the convergent fibres of the medullary substance of the brain; and then, if attended by a desire or feeling, giving it a direction outwards; or, if not checked by a volition, it finds expression in language; or if hindered, or if sufficient force has not been set at liberty in the sensory centre, it only excites consciousness, without resulting in any external manifestation.

(To be concluded.)

ON A CASE OF ANEURISM BY ANASTOMOSIS, AND THE SURGICAL MEANS BY WHICH A CURE WAS EFFECTED;

WITH CLINICAL REMARKS.

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ANEURISM by anastomosis is a disease perhaps sufficiently rare in hospital practice to render instructive a retrospect of the case in Crawshay ward while the facts are fresh in our minds; since the characteristic symptoms of the disease, its recurrent tendency after operation, and the respective surgical steps which may be necessary to effect a cure, have there been severally well shown.

The patient, a small imperfectly developed woman, aged twenty-five, married, but without issue, had enjoyed good health until three years ago, when she fell downstairs and struck her right temple, which immediately swelled up, and the tumefaction lasted several weeks. Shortly afterwards lancinating pain attacked the seat of injury, and extended to the temporal, occipital, and frontal regions. Six months later a swelling, which she could then cover with the tip of a finger, appeared; this gradually increased, and was accompanied by pain of a throbbing character, first occasional,

but afterwards constant, and aggravated by exertion or excitement, and ultimately by the erect posture. At length, driven to recumbency, she sought the advice of Dr. C. Drysdale, by whose courtesy she was admitted into the Royal Free Hospital, under my care, on Dec. 10th, 1869.

She now had an anxious expression of countenance and lachrymation of the right eye, and the flushed cheek and ear-redness of the affected side contrasted with the pallor of the corresponding part of the healthy side. Toothache, buzzing of the ear, occasional earache, partial deafness, and pain chiefly referred to the branches of the upper cervical and fifth nerves, were also complained of. In the right temporal region we remarked an ill-defined pulsating tumour, which involved an area of about two and a half square inches. Its surface was somewhat irregular, being composed of sinuous prominences (apparently bloodvessels), with slight sulci intervening, thinly covered by skin, especially at one point near the centre; it presented a livid hue, the more apparent after removal of the hair. Pulsation was very distinct; and the delicate septum between the circulating fluid and external air was here and there semi-transparent. We next observed the tortuous and dilated temporal and posterior auricular arteries, traceable from their origin to their distribution, like varicose veins beneath the skin; these elongated vessels, three times their normal calibre, coursing upwards, became lost in the tumour. On manipulation a liquid thrill was detected, and the tumour uniformly expanded with each pulsation, which was synchronous with the common carotid and radial arteries. The tumour in great part was reducible by digital pressure, but on removing this it instantly returned. On auscultation we remarked a soft blowing murmur, similar to the jugular venous hum occasionally heard in cases of valvular disease of the heart. We now applied digital pressure, firstly to the arterial trunk, and secondly to the branches, with the following result: compression of the common carotid considerably reduced pulsation in the tumour, but simultaneous pressure upon the temporal and posterior auricular arteries near their origin apparently arrested it; the pain produced, however, rendered this intolerable.

Dec. 14th. — To-day we ligatured the temporal and auricular arteries close to their origin. Incisions half an inch in length were made, valvular, so as to avoid wounding those subcutaneous vessels. Immediate cessation of all visible pulsation in the tumour followed the application of the ligature, but in a few minutes a slight wave returned, which, however, yielded to acupressure of the occipital artery just above the posterior border of the sterno-mastoid muscle.

15th. — The tumour is considerably flatter, smaller, and non-pulsating.

16th. — Tumour feels solid, and gives no perceptible impulse; but on pressure at one spot a faint wave leads us to suspect an intracranial communication, and probably with the middle meningeal artery. Occipital thread slackened.

18th. — Suppuration renders necessary the withdrawal of occipital pin.

21st. — Tumour again distinctly pulsates, but is lessened in size by one-third. Ligatures have separated from both arteries.

Jan. 8th, 1870. — Wounds are healed; pulsation in tumour is increased. Supplying branches of the occipital, temporal, posterior auricular, supraorbital, and those crossing from the opposite side, were now acupressed, the pins being inserted about a quarter of an inch from the free margin of the tumour; this has apparently arrested pulsation, but produced considerable pain. Prescribed twenty minims of tincture of opium, to be given every four hours if needful.

9th. — Has passed a restless night. The tumour is non-pulsating, flattened, tense, and livid on the surface.

10th. — Tumour now feels solid.

11th. — At the thin point previously alluded to faint pulsation is felt.

13th. — We removed all pins.

20th. — Tumour is now about one-third its original size.

25th. — Pulsation is slightly increased.

30th. — Pin-holes are healed. Under chloroform, a double ligature thread was now passed beneath the tumour backwards and forwards (four times) at short intervals (half an inch); the loops were then cut, and the skin between each pin was incised about a line from the margin of the tumour;

the ends were next tied together, the threads sank into the incision, and so the mass was strangulated. From this date all pulsation ceased.

31st.—Has suffered much pain from compression of the nerve-filaments, which an opiate has relieved.

Feb. 12th.—Tumour appears black and gangrenous, but is still undetached. Arterial hæmorrhage threatening, two long straight needles were passed crucially through the centre of the base of the tumour, and a strong thread was tightly drawn around it beneath the needle ends.

14th.—Sphacelated mass is detached this morning, but with some arterial bleeding from a good-sized vessel; pressure controls it.

18th.—Wound is cicatrised, and she leaves the hospital in good health.

August 15th.—Continues well.

Let us now briefly consider the chief points of this case. The patient's description of her early symptoms leads us to attribute the disease to a blow; and indeed, upon examination, we can discover no other cause apparent. With this view probably several branches of the temporal artery were simultaneously injured, leading successively to (1) extravasation of blood, (2) to temporary interruption of the current through the affected vessels, (3) to a free anastomosis between their branches and those of the occipital and posterior auricular arteries, and (4) to progressive dilatation of these vessels into an aneurismal tumour.

During the early arterial changes the patient was troubled with pain of a shooting character in the occipital, frontal, and temporal regions, probably from local irritation of the branches of the sympathetic, the fifth, and occipital nerves; but subsequent pain of a throbbing nature possibly depended upon the degree of aneurismal tension, for we learn that exertion, excitement, or any cause tending to increase the heart's action, always aggravated it. With the growth of the tumour at a later period we have further irritation of the sympathetic and fifth nerves, exemplified in the flushed cheek, ear-redness, lachrymation of the eye, pain and buzzing of the ear, and partial deafness, symptoms referable to the numerous communications between the vascular branches of the sympathetic and the filaments of the fifth nerve.

On manipulating the tumour we became sensible of a liquid thrill and a lateral pulsatile expansion synchronous with the carotid and radial beats, symptoms which an idiopathic aneurism containing liquid blood would yield; here, probably, due to the excessive thinness of its coverings, the tenuity and close contact of its respective arterial walls, and the almost direct communication with the external carotid through its dilated feeding branches. We find the distended subcutaneous vessels composing the tumour reducible to a great extent by digital pressure, and on applying the stethoscope we detect a soft bruit; the former to be explained by the free and abundant inosculation with their supplying arteries and with one another; the latter by the interchange of currents flowing in different directions within the tumour.

We now come to the practical question of treatment. And here we must pause to examine the arterial distribution of the locality, and so determine the effect upon the tumour of respective distal, mediate, and direct compression of its supplying vessels from below upwards; or, in other words, whether it is desirable to ligature the main artery, the larger branches, or the tumour itself, continuous pressure upon these structures, for obvious reasons, being inapplicable. Now compression of the common carotid lessens pulsation in the aneurism, but simultaneous compression of the temporal and auricular arteries apparently arrests it. To strangulation of the tumour, three obstacles arise—firstly, its large size; secondly, the danger of hæmorrhage on the separation of the ligature; thirdly, the question of intracranial communication.

Our line of treatment is, therefore, clearly defined, and we proceed to ligature the temporal and posterior auricular arteries close to their origin; immediate arrest of all aneurismal pulsation accrues, but in a few minutes a faint return is apparent, which we control by acupressure of the occipital artery.

Forty-eight hours afterwards we again observe slight pulsation in the tumour, which probably springs from the supraorbital and the other arteries crossing the mesian line;

but the operation ultimately reduces the aneurism by one-third.

So soon as the wounds are healed, we acupress all the supplying vessels close to the margin of the aneurism, and thus arrest all pulsation for the time being. We are, however, again disappointed; for in three days it returns. Nevertheless, twelve days subsequently, the tumour, although feebly pulsating, is found reduced to one-third its original size.

Finally we strangulate the whole mass, and so control all appreciable pulsation. Twelve days afterwards the slough has not separated, notwithstanding its black and gangrenous appearance. We therefore transfix its base with pins, and further ligature it. Separation occurs in forty-eight hours, and even then with hæmorrhage from a largish vessel. The wound now heals, and we have no more trouble.

Perhaps the line of treatment pursued may seem to have been a tedious one, notwithstanding its successful issue; but to deligate the tumour in the onset would have been to incur a risk of serious hæmorrhage on its detachment, to say nothing of the question of meningeal connexion.

Lastly, it was deemed expedient to further strangulate the tumour, even though pulsation had apparently ceased, lest any portion of it containing unobliterated vessels should lead to a recurrence of the aneurism.

Guildford-street, Russell-square, Sept. 1870.

FATAL ARTERIAL HÆMORRHAGE FROM THE EAR AS A SEQUEL OF SCARLET FEVER.

By P. J. HYNES, M.D., M.R.C.S. Ed.

NEVER having hitherto met with a case similar to the following, although I have been for many years engaged in a tolerably extensive practice, and had repeated opportunities of attending epidemics of scarlet fever in all their multiform varieties, I have no hesitation in requesting its publication in THE LANCET.

On July 6th I visited A. E. C.—, a very fine strong-looking boy, aged rather more than four years. The child had been ill for three or four days before my attendance. He was hot and feverish; pulse quick, about 120; bowels open; urine passed in very large quantities, so much so as to suggest the probability of its being diabetic. The body generally was well covered with the characteristic exanthem, and the eruption very well developed. My treatment under the circumstances might be defined in general terms as passive—an avoidance of the *nimia medicinae diligentia*:—mustard pediluvia every night; sponging the body with warm vinegar-and-water and tepid solutions of chloride of lime; mild aperients; and small doses of chlorate of potash three times a day. There was no evidence of the existence of any prominent anginous symptoms. There was, however, so much fractiousness on the part of the little patient that it was almost impossible to examine the tonsils without exciting him very much—a circumstance that I am always anxious to avoid, unless it may be attended with some compensating advantages, such as those resulting from the application of caustic, &c., to the fauces and tonsils.

Under the above treatment the child progressed very favourably until about the fourteenth day, when he was able to go downstairs, and appeared to be convalescent. A swelling which had formed under the right ear (from the meatus of which there oozed a slight mucous discharge) gave way under a few applications of iodine paint.

On the fifteenth or sixteenth day from the commencement of the fever, dropsical symptoms began to manifest themselves. The urine became very scanty and high-coloured; not more than a few tablespoonfuls were passed in the twenty-four hours. It was examined, and found to contain albumen in moderate quantities. The fractiousness or irritability returned, and the little sufferer became very unmanageable. About the seventeenth day the urine assumed a dark appearance, containing unmistakably blood matter. About this period (another child having been taken ill in whom dropsical symptoms had very early shown themselves—about the fifth or sixth day of the fever) I obtained the