

You will perceive that I am no advocate for the indiscriminate adoption of iridectomy in all cases of extraction, but I must again warn you that you will commit a grave error if you neglect this precaution in all cases of glaucomatous tension. Excision of the iris may also be practised some weeks before extraction—as has been recently done by Landolt in the case of Jules Simon—in persons of great age, very feeble health, or when the chances of success are small or the interests at stake very large. In order to secure success in any operation we must foresee what may happen and vary our procedure accordingly. The First Napoleon used to say, “Si je parais prêt à tout, à répondre à tout, à faire face à tout, c’est parce que, avant de rien entreprendre, j’ai longtemps médité, j’ai prévu ce qui pourrait arriver.” “He foresaw what might happen.” Let us take a leaf out of the book of the greatest military commander and most renowned despot of the century, and if we may not hope for rank and titles such as are freely bestowed upon our friends of the Camp, the Bar, or the Senate, let us console ourselves with the reflection that our lives are spent in endeavouring to do good, in prolonging life, in diminishing suffering, and last, but not least, in restoring sight to our fellows.

Nottingham.

NOTES ON SIX CASES OF CENTRAL RESPIRATORY PARALYSIS.

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In the following somewhat remarkable series of cases, all of them treated at the Prince Alfred Hospital, Sydney, death was due to a common cause—viz., inability of the respiratory centre to perform its functions, due in all probability to increase of intra-cranial pressure. Besides this common feature several of the cases developed clinical phenomena in themselves of considerable intrinsic interest. We shall give in each case a brief clinical sketch of the symptoms and an epitome of the pathological conditions found after death. These will be followed by brief remarks upon interesting or remarkable symptoms shown by individual cases; and, finally, we shall deal with those features common to them all.

CASE 1. Interventricular hæmorrhage.—The patient, a female aged fifty-four years, was admitted in a dazed condition, could answer questions but very slowly, and complained of pain in the occipital region. No paralysis or paresis was present. The temperature was normal. The heart and lungs were clear. Later in the day her condition improved, but about seven hours after admission she was suddenly seized with respiratory embarrassment, followed a few minutes later by total cessation of respiratory effort. At this time the heart was beating strongly and regularly. On practising artificial respiration the air way was found to be quite clear. As no effort at respiration was made artificial respiration was abandoned, and the heart ceased beating in about ten minutes.

Necropsy.—Blood-clot was found in the subdural space in the cerebellar fossa, continuous with a clot which distended the fourth ventricle and extended through the iter into the third ventricle.

CASE 2. Basal meningitis; chronic internal hydrocephalus.—The patient, a male aged twenty-seven years, complained of occipital and cervical pain shooting down to the shoulders and aggravated by moving the head. Five years previously he was said to have had a “sunstroke” and to have been “unconscious” for three weeks. Some months previously to admission he had repeated attacks of vomiting. During the last three months pain in the head and neck had appeared. The temperature on admission was 102° F., but fell to normal next day. The heart and lungs were normal, as was also the urinary system. There was tenderness as well as pain in the occipital region and part of the neck below it. There was no impairment of sensation and no paresis. The plantar reflexes were well marked, the patellar reflexes were exaggerated, and there was no ankle-clonus. Ten days after admission the patient became cyanosed and respiration

ceased. After entire cessation both of costal and diaphragmatic efforts automatic movements of the lower jaw and alar nasi persisted, and attempts at swallowing were made. Finally these movements also ceased. The pupils were regular, equal, and contracted, and the conjunctival reflex was present. As the heart continued to beat strongly it was deemed advisable to perform artificial respiration. The shoulders and neck were elevated, the head was thrown back, the tongue was drawn forward, and artificial respiration commenced. This was continued for an hour, strychnine and ether being meanwhile administered hypodermically. At the end of the hour slight attempts at breathing were made; these were continued and the patient recovered. Six days later he had a similar attack and recovered after artificial respiration. After several more such experiences he finally died eight days after the first attack.

Necropsy.—There were signs of both old and recent cervical and basal meningitis. The foramen of Magendie was occluded. There was hydrocephalus of the fourth ventricle, iter, third ventricle, and both lateral ventricles.

CASE 3. Cerebral hydatids.—The patient, a male aged nineteen, had been operated on about three years before his present admission and a hydatid pressing on the motor area removed (Mr. Clubbe’s case). Since leaving hospital he had enjoyed fairly good health, though being quite blind from optic atrophy following neuritis. He was readmitted with paralysis of the right arm of gradual onset. There was no vomiting. It was proposed to again open the skull, but on the morning of the projected operation his breathing suddenly became stertorous and finally stopped. Artificial respiration being carried on, his heart continued to beat for three-quarters of an hour.

Necropsy.—Four hydatid cysts were found at the posterior part of the left cerebral hemisphere. One was as large as an orange, the second about the size of a goose’s egg, the third the size of a hen’s egg, and the fourth had collapsed. The brain substance around was somewhat condensed. The largest cyst was bulging into the cavity of the left lateral ventricle.

CASE 4. Malignant disease at the base of the skull.—The patient, a female aged twenty-four, had had intermittent pains in the head for three years. The pain was described as commencing at the occiput and “shooting forward out of the right eye.” Five months previously the sight in the right eye became so bad that she could not see to read on closing the left eye, and soon after this she noticed a difficulty in breathing through the right nostril. The nose was examined by a surgeon, who observed a mass at the back of the right nostril which he took to be a polypus and removed. Three weeks after the operation she had severe hæmorrhage, and this recurred some weeks later. Shortly after this she had another hæmorrhage, on account of which she was admitted to Prince Alfred Hospital. On admission at 2 P.M. the patient was found to be very anæmic; her pulse was rapid, but not very weak. She was very restless, throwing her arms about a good deal, and complained of thirst. The nasopharynx was plugged, and a pint of normal saline solution was administered per rectum. At 10.30 P.M. the patient was very restless: the bleeding had ceased and the pulse had improved. She was given another saline enema, and also one-fifth of a grain of morphia hypodermically. At 12 midnight the patient’s tongue fell back into the pharynx and she began to choke. On pulling forward the tongue and lowering the head she began to breathe again, but remained quite comatose and had no conjunctival reflex. The breathing, which was slow and stertorous, gradually became slower and finally ceased at 12.45. As the pulse was then good, artificial respiration was commenced and continued for two hours. For an hour and three-quarters the pulse continued fairly good and then gradually failed.

Necropsy.—There was a soft reddish tumour at the base of the skull pressing on the right temporo-sphenoidal lobe and displacing it to the extent of a space about as large as a hen’s egg. The right crus was much flattened by pressure of the tumour. The latter had invaded and destroyed the sphenoidal and ethmoidal air cells on the right side and had invaded the upper part of the right nostril. The right side of the Gasserian ganglion and the optic nerve were involved in the growth.

CASE 5. Basal meningitis, chronic internal hydrocephalus, syphilitic arteritis, and gumma of frontal lobe.—The patient, a male aged thirty-seven years, had been ailing for two or three months with first giddiness and then headache. The eyesight had been gradually failing, so that he could not see to read. There was no numbness or anæsthesia. The patellar

reflexes were normal. The pupils reacted to light and accommodation. The tongue was dirty. There were diarrhoea and anorexia, but no vomiting. There was a slight history of alcohol and of syphilis contracted six years previously. About ten days after admission his pupils were observed to be unequal. A further examination of his eyes revealed the following facts. The pupils were unequal, the left circular diameter being 2 mm. and the right, which was vertically oval, about 4×3 mm. Both contracted well to near fixation, but were irresponsive to light. Vision of the right eye was $\frac{6}{4}$, and that of the left $\frac{6}{8}$. There was slight double optic neuritis. Three weeks after admission it was noticed that the patient's right arm was paretic. From this time onwards his condition went steadily from bad to worse, in spite of forty-five grains of iodide of potassium administered daily. There was marked mental deterioration—first, great emotionalism, and then increasing stupidity. Six weeks after admission his state was as follows. He had scarcely any intelligence and passed both urine and faeces involuntarily. There were paresis of the muscles of the right side of the face, including the orbicularis palpebrarum, marked exaggeration of both patellar reflexes, with patellar clonus and ankle-clonus on the right side. About seven weeks after his admission his respiration suddenly became slower and stopped. As his pulse was still good, artificial respiration was continued for about an hour and a half. Several times the artificial respiration was stopped until the radial pulse became almost imperceptible, then, on recommencing the respiration, the pulse regained its former strength. As after an hour and a half the patient made no attempt to breathe the efforts were abandoned.

Necropsy.—Endarteritis of branches of the basilar artery was found, also basal meningitis closing up the foramen of Magendie, and there was a gumma as large as a small hen's-egg in the left frontal lobe surrounded by an area of white softening.

CASE 6. Cerebellar tumour; internal hydrocephalus.—The patient, a female aged ten years, had had nine months before admission some abdominal symptoms diagnosed as tuberculous peritonitis. On admission the symptoms pointed to caries of the lumbar spine. Six weeks previously she had pain in the head and back, with "convulsions"; twelve days after admission she had another attack of "convulsions," leaving pain in the head and back accompanied by strabismus. The pupils were dilated and equal, and there was no paresis. The girl regained her previous condition. Nine days later she had another "fit," when respiration ceased, the pulse remaining strong and regular. The heart continued to beat while artificial respiration was carried on for over two hours.

Necropsy.—A tuberculous mass about the size of a hen's egg, but irregular in shape, was found in the roof of the fourth ventricle, protruding into that cavity and distending it, and at the same time invading the right lobe of the cerebellum. The latter was greatly distended, and to a less extent the third and lateral ventricles. A large amount of clear cerebro-spinal fluid escaped when the brain was being removed, through rupture of the dilated stalk of the pineal body.

Remarks.—Case 2 presents several very interesting features; the symptoms, which resembled a good deal those of caries of the upper cervical vertebrae, were dependent upon a basal meningitis. Probably also the supposed sun-stroke five years before was of a similar nature. The cause is difficult to divine. It will be noticed that the conjunctival reflex persisted after attempts at respiration had ceased—exactly the opposite to what is observed in poisoning by chloroform and similar drugs. It seems remarkable also that the accessory movements of respiration should have continued after the essential ones had ceased. Another point of interest is the contracted state of the pupils in a patient dying from asphyxia. Perhaps the strangest feature of the whole case is that natural respiration should have recommenced at all, seeing that the cause of its failure still persisted. Case 4 is in one respect the reverse of Case 2, for the conjunctival reflex was lost before the efforts at respiration ceased. Case 5 presents several points of interest. The steady progress of the disease in spite of large doses of iodide of potassium is contrary to the usual experience. The development of such marked mental symptoms in connexion with a lesion of the left frontal lobe is interesting. A very remarkable point is the development of the Argyll-Robertson pupil while the patient was under observation. Apart from locomotor ataxy and general paralysis the phenomenon must

be exceedingly rare. The one feature common to all these cases is that death was in all probability due to the increase in intra-cranial pressure causing paralysis of the respiratory centre in the floor of the fourth ventricle. In four of the cases recovery, complete or partial, was theoretically possible if the immediate cause of death could have been removed. Haemorrhage, syphilis, and localised tubercle may all be recovered from, while in a fourth case death was clearly caused by a mere blocking of the foramen of Magendie. These are not selected cases, but are simply taken as they occurred successively. The question obviously suggests itself as to whether anything surgical could be done in such desperate cases. If the pressure in the fourth ventricle could be relieved it seems to us that recovery might be possible. If the foramina which connect the ventricles of the brain with the subarachnoid space were patent, then opening of this space would be all that was necessary. If, on the other hand, these were blocked, as occurred in four of our cases, then two possibilities suggest themselves: one is to give temporary relief by tapping one of the lateral ventricles, and the other is to trephine the cerebellar fossa and make an attempt to rupture the roof of the fourth ventricle. No anæsthetic would be needed, but considerable difficulty might be experienced in attempting to operate on the back of the head whilst artificial respiration was being carried on, owing to the position of the patient. It is scarcely likely that an automatic apparatus such as is used in a physiological laboratory would be found in a hospital.

A NEW BOBBIN FOR INTESTINAL ANASTOMOSIS.

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It is with some hesitation that I venture to suggest a new bobbin for intestinal anastomosis, which appears to me to supply wants and to obviate faults, or rather disadvantages, noticeable in most of the other bobbins or buttons which have been designed. In my opinion some form of apparatus is necessary to unite hollow viscera one to the other. Now, a bobbin acts as a kind of splint while union is taking place, preventing any contraction or dilatation of the gut at the seat of union, and thus does away with any chance of leaking in the line of suturing. When no form of bobbin has been used, as in suturing by Mansel's or by Halsted's method, the seat of suturing has no support, and even a slight dilatation or contraction of the gut may easily allow some leak between the sutures to occur at the place of union. Again, rest and fixation favour union in the case of viscera, in the same way as with other parts of the body, and hence arises the necessity of a bobbin to secure that rest which is imperative for the sound joining of intestine to intestine, stomach to intestine, &c. It is thus seen that in intestinal anastomosis some plate, bobbin, or button is desirable, if not absolutely necessary.

Before describing my new appliance it may be allowable for me to point out some of the disadvantages in the plates, bobbins, or buttons which are the most frequently used in intestinal surgery. The bobbin designed by Mr. Mayo Robson appears to be the best, for it is made of decalcified bone, and as it is therefore absorbed there is no fear of its remaining for an indefinite time in the intestinal tract as a foreign body. The only disadvantage is that the flanges, or rather edges, at the ends of the bobbin are separated from one another by about three-fourths of an inch; hence, when viscera are being brought together, it is necessary to use some kind of suture running from one to the other, a process which takes some time to perform. (See Fig. 1, *a*.) Moreover, when the viscera have been brought together over the bobbin they can slip from one end of it to the other. At times, indeed, there is a fear of the bobbin slipping out from the seat of union, and this has actually occurred in one of my cases. Senn's plates appear to allow the edges of the incision in a viscus to fall together, and thus the communications between the viscera are too small later. This arises from the circumstance that while union is taking place there is nothing in the openings to keep them patent. It is obvious that this condition is rendered impossible by Mayo Robson's