Induction

As has been indicated, the patient is brought to the table in an unconscious condition, and provided endotracheal intubation is not required the anaesthetic and operation proceeds. Should intubation be necessary it is advisable to introduce a dental prop before the administration of the evipan. He is on his back in slight Trendelenburg position, and the widest bore nasal tube possible is passed as far as the cords. It will be found that in most cases direct laryngoscopy will be necessary to guide the tube past the cords, as the reflex is still present. In some cases the cords and pyriform fossae may require cocaineization.

The main tube having been passed, a gum-elastic coudé catheter is next passed through the mouth, the bend of the catheter being carefully noted; the eye should be directed towards the sound lung. After the tubes are in position the nasal tube is connected to the machine by means of an angle-piece fitted with an adjustable expiratory valve. Finally, the airway carrying the occluding bag is put in place and inflated, and the mouth tube is joined up to the suction apparatus.

Position

Experiments by Gale³ show that vital capacity is least altered in the prone position, and if a slight Trendelenburg position is added to this a natural drainage of the lungs is possible with less danger of aspiration taking place. The arm and shoulder of the affected side are allowed to overhang the table, thus clearing the scapula from the site of operation. With cases operated on in this position the risks are certainly much less than with cases operated on with the sound side dependent. Coupled with this is the fact that the constant intrapulmonary pressure and the steadying of the sternum on the table reduce the risk of mediastinal flutter. It is, too, a simple matter to put the patient in this position after induction has been completed, care only being taken to see that the sound side is always uppermost and that excessive head and neck movements on the tube do not set up a spasm of coughing.

Minor Points in Technique

The form of suction employed is of little importance provided it is efficient. The writer uses a double-action foot pump made by A. Charles King, which has the advantage of being gas-tight and is capable of exerting a very powerful extractor action. Suction is only required intermittently, and naturally small amounts of gas must be run in to take the place of that removed by the pump. Care must be exercised, if work is being done with pressures much over 10 mm. Hg, that gas is not forced into the stomach owing to the pharynx being held open by the inflatable bag. It is advisable to leave the intratracheal tubes in position after the operation until the patient's reactions and type of breathing are considered satisfactory. Direct oxygen may be required for the first few hours, and possibly drainage.

Conclusions

The closed method of anaesthesia would appear to offer the nearest approach to an ideal in the surgery of the chest, as it gives a sufficient depth of narcosis with a quiet fully oxygenated subject and a rapid recovery.

The method is subject to certain technical disadvantages, but it is claimed that these have been to a large extent overcome.

With newer anaesthetic gases, because of their intrinsic properties and initial cost, its use is essential.

A technique has been indicated by which the risks attendant on (a) the conversion of the respiratory system into a closed circuit, and (b) thoracic surgery as a whole, have been to a large extent minimized.

REFERENCES

- ¹ Guedel, A. E., and Waters, R. M.: *Anesthesia and Analgesia*, 1928, vii, 238.
- ² Rowbotham, S.: *British Medical Journal*, 1931, ii, 693.
- ³ Gale, I. W.: *Journ. Thoracic Surg.*, 1934, iii, 393.

LOCALIZED NON-SUPPURATIVE ENCEPHALITIS OF OTITIC ORIGIN *

BY

J. B. HORGAN, M.B., CH.B., D.L.O.

CORK

Upon the basis of three cases personally observed and of three cases, in children, recorded by Adson of the Mayo Clinic under the title of pseudo-brain abscess, C. P. Symonds contends that a localized non-suppurative encephalitis constitutes a distinct intracranial complication of otitis media. The following case corroborates his view.

Case Report

A youth, aged 16, suffered from right suppurative otitis media since childhood. Otherwise his health was perfect.

May 23rd: Severe right-sided headache, vomiting, insomnia, anorexia, and diarrhoea.

May 25th: Admitted to hospital under the care of Dr. J. Dowling, Tipperary, who, owing to the patient's progressive deterioration and partial loss of consciousness, had him transferred to Cork on May 29th as a possible case of brain abscess. Upon examination I found that, though semi-conscious, the lad complained of pain about his right ear. A small amount of thick, fetid pus was found to be coming from a posterior superior marginal perforation in the otherwise intact right tympanic membrane. Fistula symptom was absent. Mastoid tenderness and cervical rigidity were absent. The left knee-jerk was exaggerated. There was hemiplegia of the left upper and lower extremities, with left lower facial paresis. The left plantar reflex was extensor. The left pupil was sluggish and dilated, the right normal. There was no papilloedema. Kernig's sign was doubtfully positive on the left side. There was slight evidence of bronchitis. Incontinence was present. Temperature 99.2° F., pulse 120, respirations 24.

May 29th: Complete mastoid operation with intentional removal of the tegmen antri and tympani. No plastic operation. No sutures.

May 30th: Hemiplegia more marked. Babinski and Kernig signs more positive. No rigidity. Spinal puncture. Fluid normal to tests. No growth on culture. Temperature 102°, pulse 112.

May 31st: Patient's condition deteriorating. Exploration of temporo-sphenoidal lobe from the mastoid wound in three directions with brain forceps; negative result. The lateral sinus and cerebellar dura were then exposed, the former occluded above and below by gauze plugs, and direct exploration of the cerebellum was undertaken with negative result. Temperature 99°, pulse 112.

June 1st: Spinal puncture. Fluid under moderate pressure, but otherwise again normal. Slow rotatory nystagmus to right, probably post-traumatic. Morphine freely used to control shouting and extreme restlessness. Temperature 99°, pulse 110.

June 2nd: Drinks refused. Trephination of right squamous temporal (1 inch). Crucial incision of congested dura. Cerebrum explored with expanding forceps in four directions, with negative result. Rectal salines. Morphine necessary. Temperature 100°, pulse 108.

June 3rd and 4th: Condition unchanged. Temperature 98°, pulse 100.

* Read before the Cork Clinical Society, May, 1935.

June 5th to 7th: Slight improvement in mental condition. Again taking drinks. Temperature 97° to 98°, pulse 60 to 80. Complained of severe headache, only relieved by morphine.

June 7th to 20th: Gradual improvement in all symptoms, natural sleep, incontinence ceased.

June 20th: Plastic operation to close retro-auricular wound.

July 21st: All parietic symptoms had disappeared. Ear dry. Returned home.

Commentary

From the pathological point of view I consider that I was justified in diagnosing the existence of brain abscess. The patient had advanced ear infection, with well-marked intracranial symptoms. Operation on the temporal bone had failed to remove these symptoms, and the other potential causes—namely, sinus thrombosis, meningitis, and labyrinthitis—could more or less definitely be excluded. A more possible explanation was otitic hydrocephalus, but in this affection, which usually occurs in childhood, there is invariably papilloedema, and the cerebro-spinal fluid is under greatly increased pressure, with normal cell count. The anatomical or localizing diagnosis was, to some extent, obscured by my inability to get any corroboration from the patient, to make even a rough examination of the visual fields, or to get a clear history of the case. The focal parietic symptoms above detailed were, however, definite enough to justify the supposition that an abscess or tumour of the right cerebral hemisphere involving the motor centres did in fact exist.

A positive diagnosis of non-suppurative encephalitis was finally arrived at by deduction after the existence of brain abscess had been disproved by actual exploration on two occasions and convalescence had actually set in. I would still find many aspects of the case inexplicable were it not that I am now aware of Symonds's work on this subject. He states that every brain abscess must be preceded by a stage of inflammation, exudation, and oedema, and suggests that, as in other tissues, this inflammatory process may become arrested and resolution take place without pus formation. He further points out that, owing to the difficulty in differentiation between this condition and true brain abscess, it is most important to remember its possible existence in those cases in which, like that described, exploration has had a negative result.

In two of the six recorded cases operation was not carried out, but eventual recovery occurred just as it did in the above case and in four other cases in which the brain was explored. I am, however, quite satisfied that in my case recovery could not have ensued without the radical removal of the mastoid disease, and that it was assisted by the decompression and exposure of the brain, if retarded by the cerebellar and cerebral exploration.

REFERENCE

¹ Symonds, C. P.: *Journ. Laryngol. and Otol.*, xlii, 440.

Clinical Memoranda

Cerebral Malaria or Encephalitis Lethargica?

I am recording this case as it is of interest in showing that some cases at least of encephalitis lethargica in India may masquerade as cerebral malaria. Few instances of encephalitis lethargica have been reported from India. I believe that this condition occurs in India sporadically almost as commonly as in this country, but passes off as malaria with cerebral manifestations. Some of the cerebral conditions described in the past as sequels to malaria—such as disorders of the mind, disorders of speech and vision—might be so many cases of unrecognized encephalitis lethargica.

CASE RECORD

The patient is a young man, aged 23 years, a private in the Army, who has recently returned home from India. In October, 1934, while in India, he had an attack of fever with headache and giddiness, for which he was in hospital for three weeks. This fever, as far as he knew, was diagnosed as cerebral malaria. The temperature was never very high, being about 102° F. After some three weeks' stay in hospital he was sent back. He never fully recovered from the effects of the fever, and was finally discharged from the Army and sent home.

The first thing that struck me on seeing him (April, 1935) was his rigid gait and slow, monotonous speech. He had a typical Parkinsonian mask. I examined him on several occasions, but never found any evidence of oculogyric crisis. On inquiry of his brother I was told that when the patient went to the cinema, and had stayed there some time, his eyeballs rolled upwards, and remained stationary until he came home and went to bed. The next morning the eyes were normal again. The patient's vision is normal; there are no alteration of the superficial and deep reflexes, no tremors, and no festinating gait. The skin appears definitely greasy.

From the account there cannot be any doubt that the patient is suffering from post-encephalitic Parkinsonism. In all probability the disease which occurred in India was encephalitis lethargica, and not cerebral malaria.

Kenfig Hill S. Wales.

P. K. GHOSH.

Erosion of Internal Carotid Artery with Fatal Haemorrhage

A few cases of haemorrhage from the internal carotid artery, invariably fatal, have been recorded in connexion with middle-ear suppuration. In almost every instance the middle-ear disease was long-standing, and necrosis of the wall of the carotid canal had occurred. The case here referred to was acute, and therefore may claim to be of great rarity. I saw the patient in consultation with Dr. R. O. Knowles of Birkenhead, and have his kind permission to make this report. Very briefly the facts are these:

X. Y., aged 6. On May 26th, 1935, a slight sore throat with feverish symptoms. In a day or two a glandular swelling appeared beneath the upper end of the sterno-mastoid on the left side. On May 28th pain in the left ear occurred, and early in the morning of May 31st a haemorrhagic discharge came from the ear. This continued during the day, but was not sufficiently free to arouse any misgivings. About 6 p.m. on the same day a sudden profuse haemorrhage occurred from the nose and mouth of such intensity as almost to choke the child in its effort to dispose of the blood. Incontinence with copious evacuation of blood per rectum occurred a little later. Profound collapse ensued, and the child died at midnight.

No post-mortem examination was made, but the following conclusions seem inevitable:

1. Death was due to haemorrhage from an erosion of the carotid artery, where it traverses the bony canal in the petrous bone.

2. Some developmental defect existed in the bony canal exposing a small area of the vessel wall in the tympanic cavity.

3. The acute otitis media caused softening and eventual rupture of the uncovered segment, which would, no doubt, share in the attenuation of the middle and outer coats experienced by arteries traversing bony canals.

4. Haemorrhage, at first slight and intratympanic, becoming torrential when the erosion increased in size and flooding the nasopharynx through the Eustachian tube.

Liverpool.

COURTENAY YORKE, M.D., B.S., F.R.C.S.