

While the plan thus briefly outlined may not be unusual or final, I believe that if a greater proportion of the leading hospitals will follow some such well defined plan it will give to the profession an impetus that must result in establishing the "future of anaesthesia" in its logical relationship to the other departments of our profession.

GENERAL DISCUSSION.

Dr. A. L. FLEMMING (Bristol), who had acted as chairman while Dr. Johnston read the opening paper, said that the President had touched on very vital points. The barriers between the various clinical departments at the hospitals were breaking down, which was a good sign, but in the universities this was not the case yet, a fact which he deplored. A great improvement to be noticed was the closer relation nowadays between anaesthetists, both individual and national. The establishment of the Anaesthetic Exchange in Manchester was a milestone in the history of British anaesthesia. As regards the teaching of anaesthetics, what was necessary was the elimination of chance and art in favour of certainty and science. From the point of view of the public the sooner an art could be turned into a science the better, though the time was not yet when the art could be entirely overlooked. He stressed the necessity of the preliminary teaching of anaesthetic drugs being given by the chemist and not by the anaesthetist. An anaesthetic research committee should be established at every teaching centre and university, and be run by collaboration between the physicist, chemist, biochemist, surgeon, and anaesthetist. The ease with which open ether could be administered took away the interest of the student from anaesthetics, which was a pity. He was glad to note that the collaboration between the surgeon and the anaesthetist had increased of recent years.

Dr. R. E. APPERLY (London) queried the effects of aldehyde; the recovery showed irregularity of breathing accompanied by struggling. With minute traces of aldehyde there was sickness and struggling in the case of patients during recovery. Co-operation between the surgeon and the anaesthetist was most necessary in local and regional anaesthesia.

Dr. F. H. McMECHAN (Avon Lake, Ohio) was glad that water-tight compartments had been broken down since anaesthesia had become necessary for research work. Experimenters had thus become converts to association with anaesthetists. The prevention of avoidable deaths on the table must be supplemented by the abolition of unnecessary deaths during the following seventy-two hours. As regards teaching, even the best anaesthetists were limited to certain technical performances. The patient had good surgery and good anaesthesia, but often lacked good doctoring later. The anaesthetist should dominate the preparation of the patient, the patient himself during induction and maintenance of the anaesthetic, and the after-treatment during the post-operative period. The surgeon would thereby be relieved of much work for which he had neither the time nor the training to accomplish with satisfaction.

Dr. S. R. WILSON (Manchester) wished to stress the value of the printed word, as in his opinion the advances made during the last century had been due to this. Meetings also had their value, and he strongly advised anaesthetists to attend and put up with any financial loss incurred. As regards the physician in relation to anaesthesia, any shortcomings in the advice given by the physician must be attributed to the physician and not to the anaesthetic. The physician must take into account not only the systolic pressure but the diastolic, which was the more important. His experience with students and open ether was at variance with Dr. Flemming's. The students were, if anything, too inquisitive.

The PRESIDENT, in reply, said that art could not be taught, for it was inherent in the individual; science wedded to art made the perfect anaesthetist. Pharmacology and chemistry should be taught in the other departments, and the anaesthetist should confine himself to teaching his students to give anaesthetics safely and comfortably. There was a great difference between a condition of anaesthesia and a condition in which the patient was practically dead to the world. Even under open ether shock and loss of blood might cause death. In collaboration with another worker Dr. Bourne had produced an ether free from impurities, and this could be given to produce an anaesthesia with little or no after-vomiting. The work of Dr. Moots and Dr. McKesson was of the utmost value. Dr. Apperly was right in stressing the value of regional anaesthesia; the trouble was that it had been wrongly applied, as, for instance, in the case of toxic goitres.

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ACUTE SUFFOCATIVE PULMONARY OEDEMA.

THE following three cases may be added to those reported in the JOURNAL during the last few months:

CASE I.

Nine weeks ago I was called in the middle of the night to see a patient whom I had been treating on account of double aortic and mitral systolic murmurs. He was sitting up on the side of the bed supported on either side. His face was pallid and grey and a cold perspiration was running down his cheeks and neck. All skin surfaces were cold and clammy. He was breathing in short sharp gasps, using all the muscles of forced respiration. He had a frequent cough and each time brought up pink frothy fluid. His pulse was almost uncountable, feeble but regular. His whole aspect was that of a man about to die—a typical attack of acute suffocative pulmonary oedema. While a hot mustard foot-bath was being prepared he was given a hypodermic injection of morphine gr. 1/3 and atropine gr. 1/120, and a few minutes later one of digitalin, gr. 1/100. In a little more than half an hour he was sitting propped up in bed, breathing easily. His pulse rate had dropped to 80, and his skin was dry and warm. On this occasion some blood was also taken from the median basilic vein. Amyl nitrite inhalation seemed to have no effect.

Within the same week he had three other attacks similar in character and all occurring at night, but on each occasion easily controlled by a hypodermic injection of morphine gr. 1/3, atropine sulphate gr. 1/120. A few days later he had a fifth attack, but this occurred in the daytime. He was then given nightly doses of chloral hydrate gr. 30 and ammon. bromide gr. 30, and leeches were applied to the right costal margin over the liver. He was also given a mixture containing bromide and digitalis as a routine during the day.

For seven weeks he was free from attacks and had been allowed up daily in his room for two hours during the latter part of this time. For a week or ten days his nightly sleeping draught had been at first diminished and then left off without any interference with his sleep.

Suddenly, two nights ago, after he had been some time in bed, an attack started; and, in his own words, he first felt a tightness in his chest, he then came over hot and commenced to cough, and in ten minutes he was in the full blast of an acute suffocative attack. He was given morphine and atropine with digitalin as before, but as half an hour later improvement was only slight atropine alone (gr. 1/100) was repeated, and after another half-hour he was comfortable in bed, with a normal pulse, breathing easily, and able to talk and laugh.

He fell asleep a little later and had a good night and was breathing normally the following morning. This attack—his sixth—was the worst.

He states that in the interval just mentioned he found that the attack seemed to be warded off by inhaling oxygen on the first sensation of any tightness in the chest. Whether an attack would have developed without the oxygen is doubtful. At any rate it inspired him with confidence.

CASE II.

Within a week of the first attack in the case just recorded, I was called at 2 a.m. to see a similar case in the same village. This patient, however, had no cardiac murmur, but the auricle was fibrillating. A hypodermic injection of morphine and atropine and one of digitalin very soon cleared up this man's attack, and since then he has not had a recurrence.

CASE III.

About eighteen months ago I saw a third case—a severe one—but as this man was known to have albuminuria a hypodermic injection of atropine and digitalin alone was given, without the morphine, and good recovery was also obtained.

It would appear that this condition is not a rare one, but one which a general practitioner is liable to meet at any time. Its onset is exceedingly sudden, and very little warning is given of its advent. Only in my first case did the patient seem to have lost consciousness during the whole attack, and this was only evidenced by the fact that he did not know of the second injection of atropine.

The treatment that seems to have given success in these cases is as follows:

During the attack: Hypodermic injections of morphine and atropine and digitalin; hot mustard foot-bath. A repetition of the atropine in half an hour if no marked improvement has occurred. Recourse to bleeding in very severe cases in which the above treatment is failing.

Between attacks: Oxygen on the first sign of recurrence; bromide and digitalis in a mixture; chloral and bromide at nights; leeches applied over the liver. General attention to state of bowels and stomach, and removal of septic teeth, etc.

An interesting point is that in none of the three cases was there any general oedema and none of them had rheumatic hearts.

Arlesey, Beds.

W. W. MACNAUGHT, M.B., Ch.B.

The case of acute pulmonary oedema reported by Dr. M. Cohen (*BRITISH MEDICAL JOURNAL*, March 20th, p. 528) is of especial interest as his patient was a young man. In my experience the usual type of patient is an elderly person with marked arterio-sclerosis and raised blood pressure. The cause of acute pulmonary oedema seems to me an acute failure of the cardiac action or some vasomotor disturbance. The following cases will illustrate this view.

CASE I.

A married woman, aged 74, had been under my care for the past five years. She was suffering from valvular disease of the heart with arrhythmia and extra-systoles. She never showed any signs of decompensation, being a very active woman. She had marked arterio-sclerosis, her systolic blood pressure being 180-200 and diastolic 100-110. Her urine contained traces of albumin, the specific gravity being 1012-1016. She was highly myopic, but apart from that the fundus of both eyes was arterio-sclerotic only. So it was a definite case of essential hyperpiesia. Suddenly one night last winter, being in comparatively good health, she developed an attack of acute pulmonary oedema. When I arrived another doctor was already present. The patient was semiconscious, sitting up in bed, pale and cyanotic, with a rapid pulse; systolic blood pressure 120 and diastolic 90. Coarse moist râles were audible all over the chest, and a little froth came from her mouth. After a brief consultation we decided on a liberal venesection from both arms; strophanthin and atropine were injected, followed later by 1/2 c.cm. of pituitrin. The patient still being very distressed a small amount of morphine was injected. Then we left her. Nine hours later we saw her again. She had had a few hours of good sleep, her blood pressure was raised to 140, she was more comfortable and obviously improved. In the urine albumin was present in considerable amount. In five days her blood pressure returned to 180, and she made an uninterrupted recovery. The albumin was gradually reduced to traces only with the rising of the blood pressure. Two months after, again at night, she had another attack with the same symptoms. The same treatment was applied and she was better again in the morning. But her blood pressure rose only to 140, and she complained of severe retrosternal pain, although the heart was not much enlarged by percussion. She was sleepless for three nights. A consultant was called in three days after the night attack, and advised the injection of 1/4 grain of morphine, with strophanthin and atropine. A few hours later she died. It was, in my opinion, a case of acute pulmonary oedema following the hyperpiesial crisis of B. Shaw. Pituitary extract seemed to me the most helpful drug in this case.

CASE II.

I was called urgently to see a woman of about 70 whom I had not seen previously. She had marked arterio-sclerosis, systolic blood pressure 220 and diastolic 110. Diagnosis: Acute pulmonary oedema, full consciousness being present. Treatment: Liberal venesection, pituitrin and atropine. Next day the blood pressure had dropped to 180 systolic and 100 diastolic. The pulmonary oedema passed away, but she developed a severe attack of bronchial asthma, which caused anxiety for a few days and subsided in fourteen days. I was under the impression that in this case the pulmonary oedema was caused by a vasomotor disturbance which produced later the attack of bronchial asthma.

London, E.1.

N. PINES.

The following case occurred at Charing Cross Hospital, in August, 1925, when I was house-surgeon to Mr. L. R. Broster.

A woman, aged 42, who had had the right breast removed on the previous day, suddenly developed intense dyspnoea and cyanosis, and frothy blood-stained fluid escaped from the mouth and nostrils. Death occurred within a few minutes, an injection of camphor in oil having no effect.

The *post-mortem* examination showed that no large blood vessel had been opened at the operation, and apart from the left lung all the organs were healthy. That lung was extremely oedematous, blood-stained fluid pouring off the cut surface; it weighed 18 oz., as against 14 oz. for the right lung. There was no sign of embolism of the pulmonary vessels.

This condition of unilateral pulmonary oedema is sufficiently uncommon to justify a record.

HAROLD ABRONIN, M.R.C.S., L.R.C.P.

Leyton, Essex.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

MENINGITIS AND ENCEPHALITIS DUE TO FOREIGN BODY IN THE CAVERNOUS SINUS.

It would appear that in the following case a piece of wood must have entered the orbit through the upper eyelid when the woman fell. Guided by the bony roof of the orbit the wood must have lodged in the cavernous sinus and broken off, obvious signs of injury disappearing owing to the elasticity of the skin of the eyelid causing it to resume its normal position.

A woman, aged 55, fell and struck her head against some wood outside her cottage door on the evening of July 19th. She was found by her husband a few minutes later and put to bed. Her doctor was called to see her in the morning and said she was suffering from concussion.

On July 23rd she was admitted to the Kent and Canterbury Hospital owing to the condition of the right eye. She had then recovered from the concussion. The right eye was proptosed downwards and forwards. The upper eyelid had a brownish appearance and was slightly oedematous; about its middle was a small graze less than 5 cm. in length which appeared to have involved not more than the superficial layers of the skin. There was no voluntary ocular movement. Examination with the retinoscope showed nothing abnormal within the eye; the temperature was slightly raised.

Two days later the local swelling and oedema, which was never very marked, had disappeared, and the eye could be pushed back into the orbit until it had nearly assumed its normal position. At the same time a curious crepitation could be felt transmitted through the eyeball. X-ray examination of the skull showed no bony lesion.

During the next week the patient became very drowsy and unable to concentrate her attention for any considerable length of time. The temperature chart showed an intermittent fever; the temperature rose to 101° on several occasions. On August 3rd an orbital abscess was diagnosed, and pus was obtained on exploring the orbit above the eyeball. Under a general anaesthetic an abscess the size of a walnut was found, opened, and drained. This, however, produced little effect upon her general condition. On August 6th there was a secondary haemorrhage through the drainage tube saturating the dressings. During the afternoon of August 7th the patient suddenly screamed and jumped out of bed; she died during the evening of the following day (August 8th).

Post-mortem Examination.—Acute pyogenic meningitis and encephalitis were found with an acute abscess in the right temporal lobe, communicating with the lateral ventricle, which also contained pus. Most of the substance of the right cerebral hemisphere appeared to be acutely inflamed. On removing the brain six small pieces of wood, the longest being 1.5 by 0.5 by 0.3 cm., were found inside the right cavernous sinus. It could be clearly seen that the infection had entered the cranium through the right orbital fissure. No bony injury was discovered. The eyeball was found intact, while the orbital abscess had been successfully drained.

The small healed wound seen when the patient was admitted to the hospital was the point at which the foreign body had entered. It is probable that the sudden alarm which she experienced the day before she died was due to abscess in the temporal lobe bursting into the lateral ventricle.

I should like to thank Mr. E. D. Whitehead Reid and Dr. J. A. Pringle for permission to publish these notes, and Dr. H. N. Seymour-Isaacs for assisting me at the *post-mortem* examination.

London, W.

J. F. L. KING.

PYLOROSPASM DUE TO HELMINTHS.

The following case seems of sufficient interest to be placed on record:

An Indian, aged 43, on December 5th, 1925, at 6 p.m., was seized with acute spasmodic pain in the epigastrium and sensations of dragging from the sides to the centre of the chest. He was intensely nauseated, but did not vomit. The pulse was 96, and the temperature 97.2°. The epigastrium was acutely tender and distended. The stomach resonance was high. The bowels had last been opened by a pill on December 4th.

Terebene (m v) given by the mouth was followed by the passage of flatus. Mindful of a similar case, I injected morphine 1/4 grain. Relief was prompt, and the epigastrium became less tender and presented a tense swelling on the left of the middle line. I gave 1/2 oz. of castor oil.

By the next morning he had passed nothing. The pains were returning and the swelling was greater. Castor oil was given again. At noon a motion was passed containing ova of ankylostoma, of *Ascaris lumbricoides*, and of *Trichuris trichiura*. He vomited a quantity of semi-digested rice, castor oil, and mucus. He had not swallowed rice for forty-eight hours. The epigastric swelling vanished and there was no pain. After anthelmintic treatment he passed numerous ankylostomes and six ascariids. He has been under observation ever since and is still well (September 14th).

Singapore.

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