and Kahn tests. The cerebrospinal fluid gave a negative Wassermann reaction, the Lange test was 0111000000, Fehling's test was negative, no increase in globulin was found, and there was one small lymphocyte per c.mm. In view of his history the possibility of epilepsy was considered, and it was decided to utilize pitressin after his water balance had been established as a diagnostic test. This was carried out on November 13, but beyond the onset of severe frontal headache and nausea no definite result was obtained. At this stage the possibility of cysticercosis infection was considered, and it was elicited that pork had been a fairly regular article of his diet while in India. On November 14 radiographic films of the skull, root of the neck, upper arms, forearms, thighs, and legs were taken as a routine measure. The standard of radiograph aimed at was that of ordinary exposure conditions for bone detail with a very slight under-exposure. Widespread evidence of cysticercosis infection was obtained. The degree of opacity in the various cysts was seen to be uniform, and indicated that the infection was probably of equal duration in all parts.

Discussion

As MacArthur has pointed out in his original article on the subject, the history itself—namely, in the absence of any evidence of a familial or personal epileptic taint, the onset of fits in an adult who is not suffering from neoplasm, syphilis, or the after-effects of head injury—may be suggestive. The history of residence in India increases the possibility of cysticercosis infection, although the absence of such a history does not necessarily rule out this possibility. In most cases the diagnosis is easily established if palpable cysts are present, since one of these may be excised under local anaesthesia and examined in detail. In the present case this was not possible, as the parasites had lodged deep in the muscles and so escaped detection by any other means than that of radiography. In the absence of palpable cysts no single series of examinations can be relied upon to exclude cysticercosis, and in doubtful cases it is advisable to keep suspected cases under observation, examining the body surfaces at regular intervals for the development of superficial cysts and performing regular radiographic examinations. Blood films are considered to be of little diagnostic value, since, although an eosinophilia may be present in the earlier stages when the embryos are active in the body, in the established condition the parasites have become walled off and exert little influence on the blood picture. The prognosis in this condition must be a matter of extreme difficulty, since during life there is no method of determining the number of cysticerci present in the body or of ascertaining their future behaviour, on which the prognosis depends.

Summary

A case of cysticercosis epilepsy presenting unusual clinical features is described.

Emphasis is laid on the importance of regarding every case of epilepsy occurring in a previously healthy adult who has lived for a period in the Tropics as a probable case of cysticercosis until it has been proved otherwise.

The value of radiographic investigation in this condition is demonstrated.

A negative radiograph of the skull is not considered to be of any significance, since well-marked calcification can be demonstrated in cysts of the soft tissues.

Calcification of the cysts is a relatively slow process, and the degenerative changes may be complete in the muscles at a time when the brain is unaffected.

The size of the cysts depends mainly on their age and situation. If in firm tissues, where they are subjected to equal pressure on all sides, they are small and rounded; while in the muscles, where the pressure is unequally distributed, they lie between the muscle fibres and are oval in shape.

Evidence is produced in support of the theory that the cysticerci while alive enjoy a relative tolerance on the part of the host, but that after death they act as foreign irritants and produce changes partly by their toxic effects and partly by increased pressure on the surrounding tissues.

My thanks are due to Lieut.-Colonel G. Petit and to Dr. A. M. Dryden for facilities in examining this case, and to Dr. J. Kemp Harper and Dr. J. Fergus Henderson for carrying out the radiological investigations.

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CASE OF VENTRICULAR FISTULA

BY

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The recording of a solitary case can scarcely be expected to add much to our knowledge of the local effects of the newer chemotherapeutic agents, yet the following case presents some unusual features, justifying a very brief summary that includes only the essentials.

Case Report

A man was admitted to an E.M.S. hospital on June 1, 1940, having sustained a gunshot wound of the head an indefinite number of days previously. On account of cerebral compression he was unable to give any history, but it is known that he was not picked up until three days after receiving the wound. On admission there was a jagged septic wound of entry in the left parietal region, with foul discharge. The patient was semi-comatose and lay coiled up on his side. He had photophobia, right homonymous hemianopia, and weakness of the right leg, with up-going toe. A penetrating wound of the forearm, with compound fracture of radius and median nerve injury, was also found. The temperature was 99°, the pulse 56, and the respirations 18. Radiographs showed foreign bodies in the brain and a comminuted fracture of the left parietal. He was treated with 1 gramme of sulphapyridine (M & B 693) four-hourly, magnesium sulphate enemas, and intravenous sucrose injections.

On June 4 the scalp wound was excised and the opening in the skull enlarged, care being taken not to disturb any dural adhesions. The brain was black and mushy and foul-smelling. The track was explored for two inches, and portions of bone, metal, and hair were removed, together with much pus and broken-down brain. The longitudinal sinus was found plugged with septic clot; this was removed and the sinus packed with flavine gauze. A flavine pack was applied over the whole wound. Culture from the wound gave a profuse growth of organisms of the *B. coli* type. Post-operatively a fungating hernia cerebri developed; the track was explored with sinus forceps on several occasions, but only a small quantity of pus was obtained.

June 10.—Definite improvement. He was fully conscious, the pulse was 72, the fields of vision had improved, and the hernia was not increasing.

June 28.—For the past few days he had been getting worse again; the hernia cerebri was increasing and cerebrospinal fluid was escaping in large quantities from the centre of the hernia: evidently there was a fistula through to the lateral ventricle. Further treatment with sulphapyridine and hypertonics was given.

July 5.—The temperature was now 103°, and there was stiffness of the neck and pain in the back; large quantities of cerebrospinal fluid were still escaping, becoming slightly purulent. By lumbar puncture a heavy purulent fluid was obtained, practically pure pus, with very high cellular content, 95% polymorphs; cultures showed coliform organisms corresponding to those previously found in the brain; chlorides 0.665%,

protein 0.520%, no sugar. It is to be noted that the fluid was not under pressure, probably owing to the rapidly leaking fistula. Sulphapyridine was continued by injection, but no improvement was seen.

July 16.—Operation: the scalp was freed from edges of wound and freshened. Too much of the dura was missing to permit of closure; the edges of the sinus were cleaned up and the whole wound and fistula were packed with sulphapyridine powder; the skin edges were carefully approximated and closed watertight. Lumbar punctures and hypertonic treatment were continued.

July 24.—Considerable improvement; the wound healed by first intention. The cerebrospinal fluid was still cloudy—cells 910 per c.mm., polymorphs 95%, many pus cells present, cultures sterile; chlorides 0.710%, protein 0.185%, trace of sugar.

From this point progress was uninterrupted, and six months later the only remaining neurological signs were a right lower quadrantic hemianopia and a pulsating closed hernia cerebri of comparatively small dimensions. In the interval the divided median nerve had been sutured in the forearm, and now showed early signs of recovery.

Commentary

The special points to be noted in this case are: (1) The care taken to avoid meningeal infection in the first operation. (2) Despite intensive hypertonic treatment, the open hernia cerebri dragged upon the lateral ventricle and so led, after a time, to the formation of a fistula. (3) The fistula inevitably led to infection of the ventricles and then to spread to the basal and spinal meninges; it also produced profound alterations in the hydrodynamics of the cerebrospinal fluid, which accounts for the unusual features, such as the replacement of the fluid by frank pus under no increase of tension. (4) The failure of general chemotherapeutic treatment to arrest the widespread meningitis under these special circumstances; nevertheless the wound healed per primam although bathed in purulent cerebrospinal fluid. (5) After closure of the fistula the fluid had to pass through the foramina in the roof of the fourth ventricle and so dilute the spinal fluid, probably carrying to it sulphapyridine obtained from the wound and possibly some also from the blood stream.

Clinical Memoranda

Abscess of the Medulla Oblongata Associated with Chronic Pul- monary Tuberculosis

The unusual clinical features of the following case make it interesting enough to be placed on record.

CASE REPORT

On the evening of December 11, 1940, a police constable aged 43 was admitted to St. Thomas's Hospital, having been ill at his home for ten days. His health had previously been good, apart from a single attack of haematuria, for which he had been treated in 1933; and he had been on duty until the onset of his illness.

His original complaint had been of severe headache and aching in the back and limbs; he had also noticed some unsteadiness of gait. After three days vomiting started, and became increasingly troublesome. Four days before admission obstinate hiccup developed; he then noticed numbness of the right side of his face and of his right arm for the first time. He described the headaches as being confined to the frontal region. The onset of vomiting he associated with eating fish which he thought was not fresh. After vomiting had persisted for three days he found that it was getting increasingly difficult to swallow, and this difficulty was particularly noticeable when

taking fluids. His appetite was good and he felt that he wanted to eat. He had had a chronic cough for some years, but during the last four days he had remarked that the cough had suddenly stopped. His bowels had been constipated since his illness and he had passed only small quantities of concentrated urine.

On examination he was markedly cyanosed and wasted; his temperature was 101.6°, pulse 52, and respirations 28. There was a fine nystagmus on looking both to the right and to the left. The disks were difficult to see, but appeared blurred at the edges. The tongue on protrusion deviated to the left. The speech was slurring. There was diminished sensation to pin-prick on the right side of the face and on the right arm. No other abnormality was found in the central nervous system. Examination of the chest showed poor air entry on both sides, more especially at the lung bases. He regurgitated fluids when given drink. When at rest he did not appear unduly distressed, but he became very dyspnoeic on slight exertion. His blood urea was 26 mg. per 100 c.cm., and the blood Wassermann reaction was negative. The cerebrospinal fluid showed: 12 cells per c.mm.; total protein 0.055%; a faint trace of globulin; and a negative Wassermann reaction. The fluid was not obviously under pressure.

A radiograph of the chest showed evidence of apical tuberculosis, more pronounced on the right side than on the left. The right base was emphysematous and the lower two-thirds of the left lung showed evidence of early bronchopneumonia. The patient was very dehydrated, and 5% glucose in saline was given by means of a slow intravenous drip; but he became distressed, so rectal glucose salines were substituted. His condition deteriorated rapidly, and the following day his speech was unintelligible. He showed signs of increasing pulmonary oedema and died during the afternoon.

A post-mortem examination was performed by Dr. J. A. R. Miles, who reported as follows:

“Lungs.—A small spontaneous pneumothorax on the right side. Both lungs show apical tuberculosis, the right showing a number of small cavities. There was gross oedema of the bases of both lungs.

• Brain.—A small abscess about 0.5 cm. in diameter, situated centrally in the upper part of the medulla oblongata. There were no other significant abnormalities.”

Death was due to the development of a septic abscess of the medulla oblongata following upon a chronic tuberculous infection of the lungs, which had become secondarily infected.

A film of the pus showed large numbers of Gram-positive cocci; tubercle bacilli were not found. Culture from the abscess was not done, as it was thought that it would give no further information of value, the infection being an impure one.

I am indebted to Sir Maurice Cassidy for his permission to give an account of this case.

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Perforated Oiled Silk in the Treatment of Burns

I am prompted to write this short note after reading the leading article in the *Journal* of November 16, 1940 (p. 672), and the report of the Royal Society of Medicine in the same issue (p. 679) on the treatment of war burns.

The present-day treatment of burns by tannic acid and gentian-violet, although giving excellent results as a rule, is not always satisfactory, particularly when sepsis occurs. The treatment of these septic areas is a problem, and in spite of all the various types of applications of lotions, oils, and even skin grafting, they often refuse to heal. The failure of epithelization is in my opinion due to too frequent dressings, which not only prevent healing and subject the patient to a daily torture, but even when carried out under an anaesthetic reduce him or her to a nervous wreck.

METHOD OF USE

Any treatment which produces this state of affairs is obviously wrong, and through the kindness of my colleagues