otitis the symptoms and signs are usually ill defined." Past experience with similar ear lesions treated by paracentesis convinces me that the present cases were very definitely suppurative in type. The sudden onset, the ear-ache at night with bulging in a few short hours, deafness and pyrexia in all of them, actual-rupture of the drum in two cases, and in three the development of "snow-flakes" or "puffs of cotton-wool" due in all probability to localized massing of pus cells, scattered over the inside of the drum, strengthen this conviction.

It has been generally agreed that with a bulging drum, be it due either to acute catarrhal or to acute suppurative inflammation, abortive measures are neither adequate nor safe. Watson-Williams (1933), Graham-Brown (1936), and Colledge (1937), in the more recent literature, suggest that "immediate" incision of the drum is necessary. If sulphanilamide therapy is capable of favourably influencing otitis (acute infection of the middle ear) at both the earlier and the later stages (Horan and French, 1938) the same good results should be possible in the intermediate stage—that is, in cases of suppurative otitis with bulging in which rupture has not taken place. It was decided, therefore, with some trepidation, and not without some anxious moments later, to try the effect of sulphanilamide without resort to surgical measures. All cases were treated as of the same age group for purposes of dosage. $7\frac{1}{2}$ grains of sulphanilamide (1 tablet) was given, crushed or to be chewed, every four hours for the first two days, the number of tablets being reduced on alternate days by one till the patient was receiving two tablets only on each of the last two days. That was the minimum dosage, but where the local ear signs were not clearing satisfactorily reduction of the number of tablets was delayed. The average total per case was 225 grains over an average of seven days.

To be able day by day to observe clearly the progress made, through a canal unblocked by the usual discharge of pus, to note the gradual diminution of the bulge, to see the normal landmarks return and the inflammation disappear as resolution became complete and normal lustre and function were restored within a few days, was a novel experience. No less pleasing was the appreciation of the fact that by avoiding surgical measures these children were escaping not only the mental and physical trauma inseparable from anaesthesia and surgical operation but the further danger of superadded infection. Even in Case IV, in which rupture of a sero-sanguineous sac took place within a few hours of the onset, probably from greater virulence of infection, the discharge quickly became clear and very small in amount, so that after the first few hours there was no interference with visualization of the drum. Case VII was probably the most spectacular in that the infection was completely arrested at the actual stage of rupture. The likelihood of spontaneous remission may be dismissed as all the cases had a sudden onset, and even in a case of simple catarrhal otitis Mollison (1936) believes that with a sudden onset there is little chance of resolution. How much truer must it be with a drum bulging with pus! With such a small number of cases controls were out of the question, but I may be permitted to compare, or rather to contrast, other children treated in the same way during the same epidemic, seen at a later stage when rupture of the drum had taken place and a discharge had existed for at least twenty-four hours. In those the discharge remained purulent, the average time taken for complete recovery being twenty-three days, whereas in the present series the average was eleven days. Even with so small a number the results were so outstanding as to suggest that, if seen early and sulphanilamide therapy is immediately instituted, conservatism may be practised with safety in cases of bulging in which

rupture has not taken place, with a dropping temperature, disappearance of pain, diminution of deafness, lessening of the bulging, and a reasonably steady pulse.

Summary

Seven cases of acute suppurative otitis media with bulging of the drum, occurring in children and successfully treated without paracentesis, are described.

The treatment adopted was the early use of sulphanilamide in adequate dosage. No local treatment was considered necessary.

REFERENCES

- Colledge, L. (1937). *British Encyclopaedia of Medical Practice*, 4, 412, London.
Graham-Brown, L. (1936). Sir R. Hutchison's *Index of Treatment*, 11th ed., p. 260, Bristol.
Horan, V. G., and French, S. G. (1938). *British Medical Journal*, 2, 942.
Mollison, W. M. (1936). French's *Index of Differential Diagnosis of Main Symptoms*, 5th ed., p. 247, Bristol.
Watson-Williams, E. (1933). Parsons and Barling's *Diseases of Infancy and Childhood*, 2, 1584, London.

CYSTICERCOSIS EPILEPSY

BY

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The following case is of interest on account of the relative rarity of the condition and the unusual clinical features presented.

Case Report

A soldier aged 37 was admitted to the neuro-psychiatric wards of an emergency hospital on November 8, 1940, for observation on account of marked abnormalities of conduct. There was a history of his having wandered away from his post while on guard duty and being unable to give any satisfactory explanation of his conduct. The patient was of good physique and was the eldest of seven children, all of whom are alive and healthy. Childhood was normal and he had had no illnesses. He served his apprenticeship as an iron-moulder, and in 1923 joined the Army. In January, 1927, he was drafted abroad, and served in various districts of Northern India until December, 1933, when he was placed on the Army Reserve and returned to London. While in India he contracted sand-fly fever in 1929 and suffered from intestinal colic of unknown origin in 1931.

He remained healthy and in constant employment until October, 1934, when he awakened one morning with "cramp-like" pains in both arms and both legs, and was informed by his room-mate that he had been throwing his arms and legs about during the night. He attributed his symptoms to the effects of nightmare, and did not seek medical advice. In May, 1935, he was found lying on his bedroom floor one morning, and had no memory of what had happened. He sought medical advice, but does not seem to have received any treatment. In November, 1936, he had an attack of "mental confusion," which came on suddenly, but there is no history of loss of consciousness or of falling. He was treated at this time with 1 grain of luminal at night, but the diagnosis of epilepsy does not seem to have been established. He remained well, and was called up for service in September, 1939. In May, 1940, when in France, he felt a choking sensation while bending over his haversack, and then lost consciousness. On recovering, his arm muscles were painful, but his companions informed him that there had been no evidence of twitching and that his colour had remained pale. He returned from France in June and remained well until September, 1940; at this time, while on guard duty, he felt a choking sensation coming on, and left his post in order to sit down. He did not remember anything further until he awakened up in the guardroom and was informed that he had threatened an officer with violence. In view of his plea of loss of memory he was transferred to this hospital for observation and investigation.

On admission no abnormality was noted in his physical condition. Examination of the central nervous system was negative. His blood gave a negative reaction to Wassermann

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.

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BIBLIOGRAPHY

- Dixon, H. B. F., and Smithers, D. W. (1934). *J. R.A.M.C.*, 62, 426.
Holmes, F. (1934). *Ibid.*, 62, 296.
MacArthur, W. P. (1934). *Ibid.*, 62, 241.
Marsh, E. B. (1934). *Ibid.*, 62, 294.
Schmite, P. (1928). *Les Cysticercoses du Névrose*, Paris.
Vosgien, Y. (1911). *Thèse Paris*, No. 373.

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%,