Cryptococcal Meningitis

Report of two cases

BY

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Cryptococcosis is apparently a rare disease in Rhodesia. Davey and Ross (1969) recorded the first case of Cryptococcosis involving the tibia of an African woman. In this communication we are describing two cases of the disease involving the meninges.

CASE REPORTS

Case 1:

A 35 year old African, Thomas Azan, of the Angoni tribe in the Dedza District of Malawi, was employed as a labourer on a forest estate at Penhalongs, was admitted in April, 1970, to the Umtali Hospital. He complained for four weeks of headache, poor vision and a stiff neck. A lumbar puncture showed 80 white cells, mainly polymorphs, protein 25 mgs./100 ml., sugar 20 mgs./100 ml. and chloride 645 mgs./100 ml. Gram stain revealed yeasts of the cryptococcus. No A.F.B. was found. He deteriorated after admission, becoming blind with gross bilateral papilloedema and fixed dilated pupils. He was slightly confused and had slurred speech. The cranial nerves were intact and there were no other important findings.

He was started on intravenous Amphotericin treatment and transferred to Harare Central Hospital where it could be continued. Other investigations were normal; Hb. 13,0 grams, E.S.R. 15, W.B.C. 6 000, the differential count being normal, the blood V.D.R.L. was negative. The chest X-ray was clear. A repeated lumbar puncture showed a high protein content of between 190 and 340 mgs./100 ml., glucose between 20 and 50 mgs./100 ml. and white cells 200 to 400, mainly polymorphs. Cryptococci were indentified by India ink and phase microscopy and unsuccessful growths were attempted on Sabarauds glucose agar. A ventricular drain was inserted.

Amphotericin (50 mg. I.V. in 500 ml. of 5 per cent. dextrose) was given on alternate days. Intrathecal injections not exceeding 0,7 mgs., were administered initially and then through the ventricular drain about once a week. After 1,5 grams of amphotericin the C.S.F. became clear of cryptococcus but the protein remained high. No clinical improvement was observed and the patient suddenly collapsed and died on 17th July, 1970.

AUTOPSY

The autopsy was performed by Dr. N. Gane. "In the respiratory systems there was thick mucopus in the right main bronchus; the lungs were generally moderately congested. A small pale nodule 0,8 cms in diameter was found beneath the pleura of the left lower lobe. The spleen weighed 200 G. Pus was seen with fibrous adhesions over the base of the brain (weight — 1 200 G.) especially surrounding the optic nerves and extending back to the fourth ventricle. Scattered areas of pus were seen beneath the subarachnoid membrane over the cerebral hemispheres. There was early coning of the brain.

HISTOLOGY

Cryptococci were demonstrated; the primary was in the pleura of the left lung. In the main sections, an organising chronic meningitis was evident in which plasma cells, lymphocytes and occasional giant cells were seen. Cryptococci were present in fair numbers and showed marked variation in size and staining intensity.

Case 2:

Zakeo, an African male, was referred from the Marandellas Hospital in a confused and sickly state to Harare Hospital in November, 1970. He had been confined for about four weeks and had not improved after being given Melleril. His condition deteriorated steadily.

On examination he was grossly dehydrated. His gums were oozing blood slightly and were pyorrhoeic. The mucous membranes were pale. His breath was slightly acidotic but there was no jaundice. A few small mobile lymph nodes were palpable in the right axilla. The cardiovascular system was normal, the blood pressure being 130/85. Inspiratory crepitations were heard at the left base behind. On abdominal examination the veins over the surface of the abdomen were prominent and the flow of blood in them was upwards. The fingers were not clubbed. The veins in both legs stood out prominently and the upper part of the thighs were tender.

The patient was confused and uncooperative lying with eyes open, looking straight ahead of him; his neck was quite rigid and the Kernig's sign was positive. The pupils were equal but reacted only slightly to light. The right fundus appeared normal but slight papilloedema was thought to be present in the left disc. When turned on to his left side he assumed a position of left opisthotonus. The biceps, triceps and supinator reflexes were brisk as were the knee jerks but the ankle jerks were doubtfully present. The plantar responses were flexor.

A lumbar puncture showed a slightly xanthochromic fluid, the pressure being 105 mm. water with a free rise and fall. The leucocyte count of the fluid was 85 cells per cu.mm. (lymphocytes 55 per cent and polymorphs 45 per cent.) The protein content was 410 mg./100 ml. Pandy ++ and glucose was 16 mg./ 100 ml. No organisms were reported for parasites. Blood smears were negative.

COURSE

The patient was given penecillin, but the next day tuberculous meningitis was considered a more likely diagnosis and so antituberculous therapy was commenced. The following day the patient's condition had deteriorated. His level of consciousness had dropped and he now hardly responded even to the most painful stimuli. A few hours later his breathing had become almost Cheyne-Stokes in character. His left pupil had become fixed and dilated, the right pupil being smaller with a poor response to light. The left fundus showed papilloedema and the margin of the disc in the right eye was blurred. His neck stiffness had become less.

On 13th November, 1970, as he seemed to be a little better and as he was not moving his left arm, we arranged for a bilateral carotid arteriogram to be done but this investigation proved negative. The next day the patient died.

AUTOPSY

An autopsy was performed by Dr. Ashworth. Important pathological changes at autopsy were confined to the central nervous system, the lungs, spleen and liver were essentially normal.

The brain weighed 1370G.; it was oedematous and a generalised meningitis was present, the exudate being a pale white. The ventricles were slightly dilated but no block was seen nor was a tuberculoma found.

On histological examination there was a marked giant cell (mostly foreign body type), reaction in the meninges coupled with a diffuse infiltration of histiocytes and lymphocytes. Neutrophil aggregates were seen in areas. Numerous organisms, histologically typical of *C. neoformans* were present.

COMMENT

The Cryptococcus neoformans is widespread in nature and is apparantly found regularly in soil contaminated by bird droppings. The spores are inhaled and spread takes place from the respiratory system and nasopharynx to the limb bones and central nervous system. The prediliction of

the nervous system to involvement is well described. Perhaps the most common effect on the brain is its liability to form inflammatory tissue around the optic nerves. At postmortem large gelatinous multiple 'cysts' are found. These produce symptoms which may simulate almost any brain disorder. However, it seems rare for this disorder to give peripheral or motor sensory signs although it can occasionally affect the spinal cord.

The disease too, has a tendency to appear secondarily to other sytemic illnesses, such as the reticuloses, leukaemias and diabetes or sometimes it is following treatment with steroids.

It has been recognised in East Africa.

In 1958, Neville and Cooke reported human cases from Kenya. All were Kikuyu; all had apparent lesions in the base surrounding the optic nerves. The following year Turner recorded a further instance from Kenya — a young Embu male who showed bilateral papilloedema. In Leopoldville in 1962 Equine cryptococcosis was described in a horse — this was the first time that the condition was seen in animals in the Congo.

Summary

Two cases of cryptococcal meningitis are recorded in Africans from Rhodesia.

REFERENCES

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