Proptosis as a Manifestation of Cysticercosis

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Cysticercosis is a pleomorphic disorder whose presentation depends on a combination of inflammatory response, topography of the lesions, degree of parasitic load and sequelae of previous infestation. Proptosis is a rare presentation of cysticercosis. We describe a case of disseminated cysticercosis presenting as epilepsy with progressive painful proptosis.

Case Report

A 9 year old non vegetarian female was symptomatic for 1 month with headache followed by tingling and numbness of the right leg. Subsequently she had several complex partial seizures involving the right half of the body. Seizures were controlled on carbamazepine (12 mg/kg/day). Ten days later she developed progressive painful proptosis of the right eye with redness, lacrimination and diminution of vision. There was no history of fever, vomiting or cough. There was history of contact with a case of tuberculosis.

Examination revealed a well nourished child with a BCG scar. Right sided proptosis was present with conjunctival suffusion. Pupillary reactions and eye movements were normal. Fundoscoy revealed evidence of early papilledema on both sides. The neurological and systemic examinations were normal.

Hemoglobin and blood counts were normal. ESR was 5 mm. Mantoux test was 20 mm at 48 hours. Lumbar puncture revealed an acellular CSF with normal biochemistry. ELISA and PCR (polymerase chain reaction) for antibodies against *Mycobacterium tuberculosis* were negative. Serum and CSF antibodies against cysticercosis were absent.

Roentgenography of the skull and chest were normal. Orbital ultrasound revealed a cystic lesions with an eccentric rryaral nodule in the inferior rectus mus'cle of the right eye suggestive of a cysticercosis lesion. The eyeball was normal. On CT a solitary lesion was seen in the left parietal area with perifocal edema suggestive of granulomatous involvement. No other lesions or calcifications were present. The **MRI** revealed a solitary cystic lesions with an eccentrically placed mural nodule in the left parietal area. The rest of the brain parenchyma, ventricles and basal cisterns were normal *(Fig. 1). A* focal lesion with poorly defined morphology was seen in the inferior rectus muscle of the right eye. The retroorbital fat plane was preserved *(Fig. 2).*

The child was put on prednisolone 2mg/kg. Two weeks later albendazole was added at 15mg/kg/day and contin-

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ued for two weeks. Steroids were continued for 2 weeks after albendazole therapy and then tapered. Anticon-vulsant therapy was continued. Proptosisimproved with regression in size of the cyst as seen in serial ultrasounds. However, seizures recurred after tapering steroids for which the dose of anticonvulsants

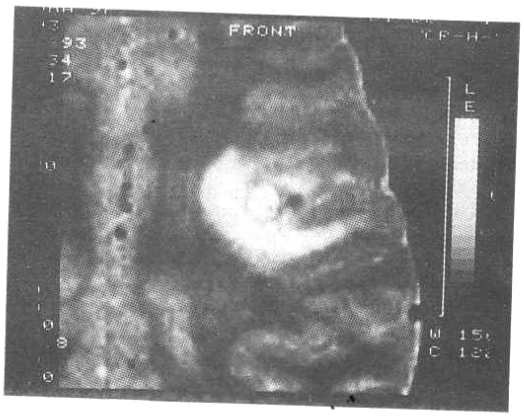

Fig. 1. MRI showing ring lesion in the brain.

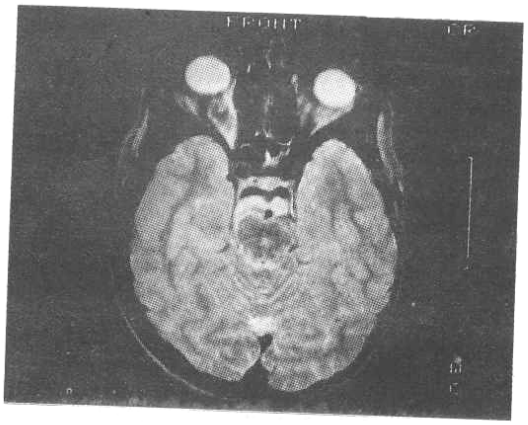

Fig. 2. MRI of the orbit showing cystic lesion with mural nodule in the muscle.

was increased and steroids given for 2 weeks. The child is asymptomatic 3 month after cessation of steroids. Repeat CT scan at 3 months showed regression in size of the intracerebral lesion with decrease in peripheral edema. The orbital lesion had almost disappeared. Proptosis was absent.

Discussion

Cysticercosis is a systemic infection with the larval stage of the *Tenia solium.* One series reported invasion of the'brain in 60%, the eye in 3% and the muscles in 5% of patients(l). The parenchymal cyst about 15 mm in diameter, consists of a wall with an invaginated nodule containing the larva or the scolex. The neighboring parenchyma and vessels undergo extensive inflammation which subsides with the death of the organism^). After about 18 month the scolex dies and the remaining cyst and nodule may calcify. Unlike skeletal muscle cysts the cerebral cyst calcify infrequently and less completely(3). Majority of the pa-' tients are between 20 and 50 years of age and the average interval from initial infestation to onset of symptoms is 5 years with a range of 5 months to 30 years(3). Cases are being reported with increasing frequency in the pediatric age group. Cysticercosis is an uncommon cause of proptosis in all age groups with reported incidence varying from 0 to 20%(4-8).

In endemic areas, cysticereosis is the commonest cause of epilepsy in young adults. Between 53-59% of patients with cysticercosis have epilepsy and it is the sole manifestation of the disease in 18-34%(6-8,9). Focal seizures have been reported in upto 75% of patients(6,9,10).

CSF findings have been found to correlate with subarachnoid rather than parenchymal localization of the cysts and the activity of the meningeal inflammation(8,10). CSF eosinophilia has been reported in 30 to 77% of cases with meningitis(10,ll). Our patient had parenchymal lesions without any cysts in the ventricular or subarachnoid locations. This may account for the normal CSF.

The role of serology in the diagnosis is not well defined. All serologic findings depend on the specific antigen used and cross reactions with other helminthic diseases can occur. In addition serology is relatively insensitive in patients without meningitis—in one study serological confirmation of diagnosis was possible in only 42% of patients without meningitis(12).

Radiological findings are often the most sensitive markers of the disease(13). Soft tissue calcifications suggestive of .intramuscular cysticerci are found in a few patients with reported incidences varying from 17-97%(6). Skull roentgenograpahy may reveal nonspecific calcifications or deminerali-sation consistent with raised intracranial pressure. In 4 to 5% of patients a characteristic circular halo is seen with an eccentric nidus 1 to 4 mm in diameter corresponding to the scolex(ll,14). Many reports have appeared describing CT features of neurocysticercosis(6,16). Parenchymal lesions usually appear as low density foci with contrast enhancement usually in a ring fashion. This foci includes the cyst itself and/or surrounding edema. Basal meningeal involvement may cause either basal contrast enhancement or extracerebral masses but the commonest finding is hydrocephalus(15). Intraventricular cysts are isodense with CSF and

may be difficult to visualize on CT. MRI imaging with its multiplanar imaging capabilities and sensitivity to flow effects is a powerful technique to evaluate neurocysticercosis not only because of its ability to actually detect the cysts but also because of its ability to detect signs of cyst degeneration and pericystic inflammation(17). However, MR is insensitive to parenchymal calcification which are well seen on CT scans.

Therapy is controversial in the absence of well defined criterion to assess disease activity. Ocular cysticercosis is an indication for surgical treatment as medical management usually fails and the inflammatory response may threaten the eye(18). Our patient had protopsis due to involvement of the ocular muscle rather than intraocular structures. Thus we decided to undertake medical treatment which has been successful.

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Nightmare due to Ciprofloxacin in Young Patients

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The debate regarding use of ciprofloxacin in children is mainly on the possible effect on growth of juvenile cartilage and arthrbpathy. However, it has been found that ciprofloxacin also causes many transient adverse reactions and one of them is nightmares(l). Two cases of nightmares related to ciprofloxacin therapy are reported.

Case Reports

Case 1: A $4^{1/2}$ years old boy was referred for excessive irritability and sleeplessness. Parents noticed that the child woke up within minutes of sleep, started crying, and also complained of dogs in the room. The child was having fever for a week and was started on oral ciprofloxacin by a private practitioner, a day prior to admission.

On examination, the child was conscious and co-operative. He was mildly febrile, pulse and blood pressure were normal. Both spleen (2.5 cm) and the liver were enlarged (1.5 cm). Central nervous system and other systems were within normal limits. The widal test was positive with O and H titres being 1:240 and 1:120 respectively. Blood culture was positive for *Salmonella typhi* and sensitivity showed a multi-drug resistant pattern. Ciprofloxacin was omitted on the day of admission and the patient was put on ceftazidime. On the 2nd day of admission the child become stable and fever came down on the 4th day of hospital stay.

Case 2: A 5 year old child was admitted with high grade fever for 14 days. She had been on ciprofloxacin 3 days prior to admission as her blood report showed a positive Widal test (O and H titres being 1:320 and 1:240). On exami-

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