CYSTICERCUS RACEMOSUS IN THE FOURTH VENTRICLE: REPORT OF TWO CASES

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INTRODUCTION

Cysticercosis is caused by the larval stage of *Taenia solium*, *Cysticercus cellulosae* and may be symptomless unless the cysticerci invade the vital organs, including the central nervous system (Faust *et al.*, 1974). Man becomes infected by ingesting the viable egg of *T. solium*. The embryo burrow into the intestinal wall and enter the blood capillaries and are transported in the blood stream to any tissue where they develop into bladder-like larvae. Two types of cysticercus of *T. solium* are known and have been reported from Thailand, (Leelachikul and Chuahirun, 1977; Viranuvatti and Tuchinda, 1954; Chitanond and Intavasu, 1962; Tan tajumroon and Thitasul, 1966): *Cysticercus cellulosae* is an oval encapsulated cyst containing a scolex. This form has been occasionally reported to invade the subcutaneous tissue, skeletal muscle, eye, heart, lung, thyroid gland and brain (Faust *et al.*, 1974).

Cysticercus racemosus, the rare type, is a branching unencapsulated racemose type of larva which may or may not contain a scolex, attached together with the stalk resembling a bunch of grapes. These may develop in the ventricles, subarachnoid space, choroid plexus as well as in superficial cyst capsule (Chitanond and Intavasu, 1962; Faust *et al.*, 1974). The present paper reports two cases of cysticercosis of the *racemosus* type.

REPORT OF CASES

Case 1: A 29-year-old Thai male was admitted with the chief complaint of headache of seven days duration. His illness started seven days prior to admission when he developed headache with vomiting, poor vision and weakness of both legs. There was no history of previous head injury but had however, cerebral malaria 11 years ago which was completely cured.

Physical finding revealed motor weakness of both lower extremities, hyper-reflexia of knee jerks and papillodema in both eyes.

Laboratory examination: Haematocrit 44%, white blood cells 23,250/c.mm. polymorphs 88%, lymphocytes 9%, monocytes 3%. CSF - Total protein 1.7 gm, sugar 76 mg%, sodium chloride 700 mg%. Stool examination and urinalysis were normal.

Cerebral angiogram showed pericalosal branch of anterior cerebral artery slightly deviated. The fourth ventricle was shifted to the left. Space occupying lesion (lobulated lesion) in the fourth ventricle inducing compression and obstruction of the fourth ventricle.

Surgical treatment: The patient underwent suboccipital craniectomy and 3 cystic masses in the fourth ventricle were successfully removed (Fig. 1).

Three of the thin wall acephalocysts measured 4.1 × 2 cm, 1 × 1 cm. and 1 × 0.5 cm. These were diagnosed as *Cysticercus racemosus* of the fourth ventricle or soft tissue, cysterna magna and fourth ventricle cysticercosis (Fig. 2).

The patient recovered uneventfully and went home. He had been well for 5 months. However, the patient was admitted again

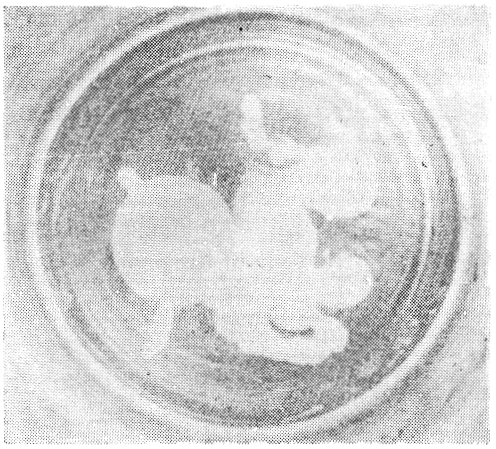

Fig. 1—Showing cystic mass removed surgically from the fourth ventricle.

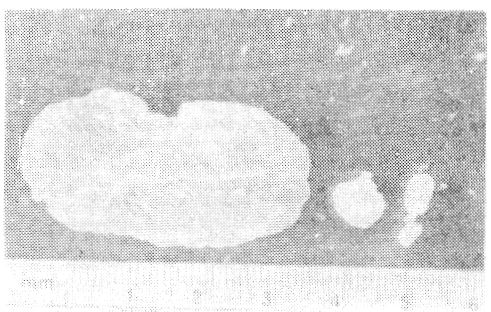

Fig. 2—Showing the 3 cysts that have been removed from the fourth ventricle.

because of having headaches for 8 days. He also developed blurred consciousness, papilloedema and hyper-activity of deep tendon reflexes. He underwent another suboccipital craniectomy. This time multiple cystic masses of racemose type of Cysticercus with no scolex were found in the cysterna magna in the fourth ventricle. The size varied from $2.5 \times 1.5 \times 0.5$ to $6.5 \times 2.5 \times 0.5$ cm. The cysts flowed out with the cerebro-spinal fluid.

The patient was discharged but six months later, the patient came back with recurrent cysticercosis causing obstruction of the fourth ventricle.

Another operation was performed, a few cystic masses of *C. racemosus* occupying the fourth ventricle were removed. The cysts were found to contain no scolex.

Patient went home in good condition and never came back for follow up.

Case 2: A 23-year-old Thai male was found unconscious on his bed one morning. He was admitted to Siriraj Hospital and after laboratory and radiological examinations a provisional diagnosis of cysticercosis cellulosae was made.

Surgery revealed multiple cysts of about 1-2 cm. in size, yellowish in colour occupying the foramen magnum. Parasitological diagnosis was *racemosus* type of cysticercus (Fig. 3). The patient recovered uneventfully after operation and was discharged in good condition. The patient never returned for follow up.

Fig. 3—Showing multiple cysts of various sizes of *Cysticercus racemosus* in the spinal fluid during surgery.

DISCUSSION

Cysticercus cellulosae have been reported from the human brain, subretinal and eyelid (Becker and Jacobson, 1951; Simms *et al.*, 1969; Jampol *et al.*, 1973; Bartholomew, 1975), In patients who develop symptoms of space occupying lesion, cysticercosis must be considered in the differential diagnosis. The onset is usually acute with headache, signs of increased intracranial pressure, loss of consciousness and neurological signs (Suwana and Tangchai, 1973).

Cysticercus racemosus is a large cyst consisting of multiple cysticerci attached together by stalks. It is usually found in a large space, such as the fourth ventricle, most frequently found in the chiasmatica bursa. It may be found in the foramen magna, invading into the fourth ventricle or down into the spinal cord. The *C. racemosus* appears like a bunch of grapes, consisting of numerous cysts attached to the central stem by the stalks. The whole *C. racemosus* is about 1-6 cm. in diameter. It is interesting to note that these small cystic larvae contain no scolex. It is believed that the scolices have degenerated. When the cyst becomes big and no longer floats around, it will settle somewhere in the brain passage, such as in the ventricle where the cyst will develop into the size that may eventually obstruct the cerebrospinal fluid flow (Chitanond and Intavasu, 1962).

The disease is rather severe and may be fatal as there is no specific drug to lyse the cyst. Surgery offers only palliative treatment and cannot remove all the cysts occurring in the brain. Besides, the recurrent rate is very high. The cyst may produce pressure necrosis and/or obstruction of the CSF flow.

SUMMARY

Two cases of cysticercosis of the racemosus type found in the fourth ventricle of the brain are presented. The symptoms were blurred vision or loss of consciousness and increased intracranial pressure. The condition recurred several times in one patient in whom repeated operations to remove the cysts were required.

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