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PERIORBITAL CYSTICERCOSIS: CASE REPORT
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PERIORBITAL CYSTICERCOSIS: CASE REPORT

P. W. ATIPO-TSIBA

SUMMARY

Cysticercosis is a larval cestodosis. It is due to the development in human body of the larval form of *Taenia solium*, *Cysticercus cellulosae*. A person can be infected in two ways: by eating the infected pork, resulting in Taenia in the intestine (taeniasis) and excretion of infective eggs in faeces, secondly, by ingesting food or water contaminated with faeces containing eggs, resulting in the development of larval forms containing cysticerci of *Taenia solium* (cysticercosis).
This Disease has a worldwide distribution, mainly related to poor hygiene. In Africa, several outbreaks are reported in south of the Sahara. The location of the larvae in the central nervous system (neurocysticercosis) represents the most severe form of this disease. At eye level, cysticercosis can occur either in the related structures (eyelids, conjunctiva, orbit), but these locations are rare, either in the eyeball more frequently. We report the first case of cysticercosis (periorbital cyst) diagnosed in the ophthalmology department of the University Hospital of Brazzaville (UHB) in a patient from Madagascar.

INTRODUCTION

Cysticercosis is linked to the development in human body of the larval form of *Taenia solium*, *Cysticercus cellulosae*; this is a larval cestodosis (1, 2). The location of the larvae in the central nervous system (neurocysticercosis) makes a most severe complication of this disease (1, 3-6). A person can be infected in two ways (7, 8): one, by using the infested pork meat is not cooked sufficiently, resulting in Taenia in the intestine (taeniasis) and the excretion of infective eggs in faeces and by ingesting food or water contaminated with faeces containing eggs, resulting in the development of larval forms containing cysticerci of *Taenia solium* (cysticercosis).

Representing 90% of cases worldwide, the first mode of transmission is by far the most common.

Two major epidemiological factors are present to explain the importance of cysticercosis, man-pig promiscuity especially in pastoral areas, and hygiene related to faeces. The infective eggs are very resistant and can survive in the environment for months or even years (1-5).

The global distribution of disease is mainly due to the conditions of poor hygiene; cysticercosis is now a disease of poor countries, where its frequency is still largely underestimated (3, 7-10). Cysticercosis is currently reported in Central and South America (Mexico, Guatemala, Ecuador, Honduras, Bolivia, Peru, Brazil), Africa (Senegal, Benin, Ivory Coast, Togo, Ghana, Burkina Faso, Nigeria, DRC, Cameroon, Burundi, Kenya, Rwanda, Tanzania, Uganda, Mozambique, Zimbabwe, South Africa), in the Indian Ocean (Madagascar), Asia (Indonesia, India, Vietnam, Cambodia, Laos, Korea, China, Nepal, Mongolia, Philippines, Myanmar) (7-9, 11).

Cysticercosis is a rare disease in Congo - Brazzaville; no cases have been diagnosed to date. We report the first case diagnosed at the UHB in a patient from Madagascar.

CASE REPORT

A 25-year-old woman consulted for a right periorbital cyst, evolving for nearly two years, without impairment of visual acuity, and without exophthalmos.
Its review noted:
- an ovoid cyst, approximately 3 X 1.5 cm dimensions, spread along the lateral orbital wall (Figure 1);
- no inflammatory signs,
- healthy eyes skin;
- without lymphadenopathy (pre tragienne area, under mandibular area).

Figure 1

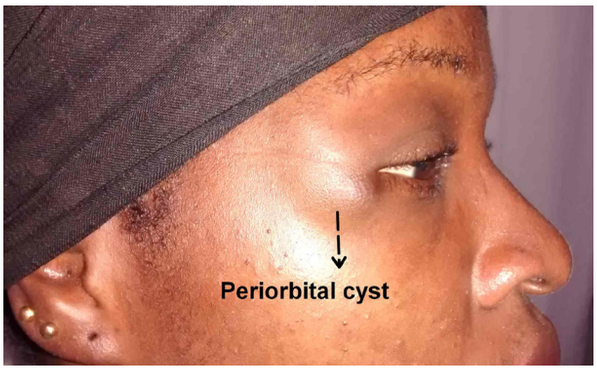
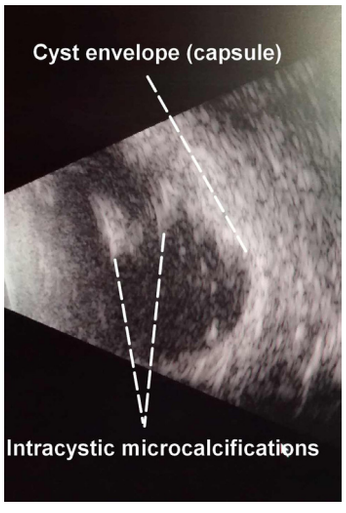


Figure 2



The B ultrasound showed a well-encapsulated cystic mass, with two intra-lesional micro-calcifications (Figure 2). Ultrasound of the eye was normal.

Blood count noted hyper eosinophilia without leukocytosis, sedimention rate was normal.

The non-inflammatory nature of the cyst, the hyper eosinophilia, the presence of intra-cystic micro calcifications, the country of the patient (Madagascar), pushed us to achieve an ELISA test in search of anti *Taenia solium* antibodies. This test was positive.

The surgical treatment had consisted in complete removal of the cyst. The pathologic examination had revealed a bladder containing a liquid and a typical but calcified scolex, split in two, with characteristics hooks crown.

The patient was treated by oral route with Albendazole for two weeks. The post-operative period were simple.

DISCUSSION

Cysticercosis has been eradicated in Europe in the early twentieth century, except in some countries of Eastern Europe. Moreover, the number of cases of cysticercosis in people who have traveled to endemic countries is increasingly high. In the United States, over the past few decades, neurocysticercosis has become a major public health problem due to the increasing influx of immigrants, especially from Mexico. Finally, the use of common household staff from endemic areas is a major factor of transmission to people who have never traveled or not eating pork (12-14).

In Madagascar, where the first human cases confirmed by autopsy, was reported in 1910, cysticercosis is a public health problem. Active prevalence of cysticercosis can be estimated at 10%, indicating a high endemicity placing Madagascar among the most affected countries (9, 15).

The cysticercus occurs in tissues such as a fluid-filled cyst, thin and translucent wall. The scolex is invaginated and appears as an eccentric opaque nodule. To complete its life cycle, the cysticercus is to survive in the tissue of its host several weeks or even months. According to the immune tolerance of the host is strong or weak, the cysticercus develops more or less slowly towards death (calcification). Several locations are possible, but the most common are the nervous system, eye, muscle and subcutaneous cellular tissue (1-5).

The nervous system is achieved in 60-90% of cases. Cysticercosis primarily affects the central nervous system. Nerve tissue opposes an inflammatory response to infection, which together with the degeneration of the larva, marked the beginning of neurological signs, while the live larvae remaining clinically silent (1, 3, 5, 6, 10). The parasite usually live 18 months to two years, but sometimes survival beyond five years. After the death of the parasite occurs cyst degeneration process. Then appears a slow process of calcification. Neurocysticercosis has a polymorphic presentation, depending on the location of the lesions, their number, the inflammatory response and life stage of the parasite (3, 4, 6). It describes several clinical pictures, dominated by four symptoms: crisis of epilepsy; headache; focal neurological deficits; an unexplained intracranial hypertension syndrome. Completely asymptomatic forms have been reported. Neurocysticercosis is a common cause of epilepsy in poor countries. CT Scan and Magnetic Resonance Imaging (MRI) exams are the choices. Although they are highly evocative images observed on CT and MRI are not pathognomonic (6, 15, 16).

At eye level, cysticercosis can occur either in the related structures (eyelids, conjunctiva, orbit), but these locations are rare, either in the eyeball more frequently. Without treatment, the disease progresses to major inflammatory complications, causing retinal detachment, hypertension and secondary cataract. The conjunctival location, the most common, realising swelling of 5 to 15 mm in diameter cystic appearance transparent, pink or yellow. Diagnosing ocular locations is easy if the cysticercus is visible inside the globe. The B-mode ultrasound gives decisive results (2, 4, 11, 12).

Muscle and subcutaneous locations are often screened retrospectively on a radiograph, in the form of tissue calcifications. Screening subcutaneous cysticerci is yet easy (nodules) for biopsy and pathological examination that highlights the vesicle surrounded by a granulomatous reaction (4, 10).

Generalised or disseminated forms (cerebral, ocular, subcutaneous and muscle) were statistically less frequent, but can be noisy and rapidly fatal (4, 12).

The diagnosis of cysticercosis can be mentioned on an epidemiological arguments (family pig farm, faecal matter), clinical (epilepsy disorders, decreased visual acuity), biological (hyper eosinophilia), CT (brain parenchymal form). Laboratory diagnosis involves immunology and pathology. Immunological techniques include search against T. solium antibodies or T. solium antigens circulating in the serum. The ELISA, although lower sensitivity and specificity than those of the EITB (Enzyme Linked Immuno Blot Assay Electroimmunotransfer) is the most used because it is simple technique, convenient for terrain and low cost. The EITB is to detect bands specific glycoproteins of T. solium. Seven bands are identified for the diagnosis of T. solium, these glycoproteins of molecular weight 13 kilodaltons (kDa), 14 kDa, 18 kDa, 21 kDa, 24 kDa, 39-42 kDa and 50 kDa (6, 10, 15, 16, 17). Histology is the only test for a definitive diagnosis by identifying the cysticercus (1-3, 6, 10, 13, 15).

The cestocide treatment has altered the course of cysticercosis, particularly in brain damage. The cestocides drugs, two are active:

- Albendazole, presented in 200 mg tablets or oral suspension containing 100 mg per teaspoon. The dose is 15 mg / kg / day, in 2 divided doses (15 days).
- Praziquantel, presented in 600 mg tablets. The dosage is 50 mg / kg / day, in 2 divided doses (15 days).

The preference is for Albendazole more active than Praziquantel.

The cestocides treatments can cause intracranial hypertension hence the need to involve corticosteroids, starting three days before the cestocide treatment as prednisolone or dexamethasone (12, 16, 18).

The efficacy of treatment in neurocysticercosis can be evaluated with a radiological control (CT or MRI) after three months. The sensitivity of the cysts may be selective for one or other of two cestocides. Intra ventricular cysts can be surgically extirpated where available. Hydrocephalus are derived either ventricular-peritoneal shunt or by ventriculo-atrial shunt.

Prolonged monitoring of patients, often not easy in poor countries, shows:

- a risk of recurrence, despite conventional treatment,
- interest, if repeated, prolonged sequential treatment of Albendazole or Praziquantel, given the possibility of a sensitivity of some cysts in each of the drugs for the same patient.

Recently a combination therapy Albendazole 15 mg/kg/d + Praziquantel 50 mg/kg/day for 10 days showed complete resolution in 64% against only 30 to 40% with monotherapy, with no difference in side effects (6, 9, 18).

In prophylaxis, a good policy against cysticercosis is imperative, two measures are necessary. Mass anthelmintic treatment, Praziquantel 10 mg/kg or Albendazole 400 mg, a single dose in both cases every 3 months. Avoid the pigs have access to human faeces by not allowing them to wander freely (9, 10, 12, 15).

In conclusion, health education is based on the change in eating habits (enough cooking pork), and the fight against faecal peril (latrines, hand washing). Those patterns have allowed the eradication of cysticercosis in temperate countries such as Portugal, and cause a significant drop in prevalence in tropical countries like in Reunion. Vaccination of pigs also offer a tool to help control the spread of the parasite.

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