

Pediatric Orbital Hydatid Cyst Simulating Orbital Tumor

Lamia Benantar^{1*}, Yassine El Allouchi¹, Hasna Abdourrafiq¹, Souhaib Aboutofayl², Khalid Aniba¹

¹Neurosurgery department, Ibn Tofail Hospital, Mohammed VI University Hospital Center, Marrakech Morocco

²Ophthalmology department, Arrazi Hospital, Mohammed VI University Hospital Center, Marrakech Morocco

Case Report

***Corresponding author**

Lamia Benantar

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Abstract: Hydatidosis is a parasitic disease that is endemic in many traditional livestock breeding countries, including Morocco. Orbital location is extremely rare and represents less than 1% of all locations. We report the case of a 14-year-old child who presented for a non-axial, non-reducible inferonasal grade II proptosis with a deep decrease in visual acuity of the right eye without any deterioration of the general state of health, or other neurological deficit. MRI shows a cystic lesion bilobed with calcification seat on the right external muscle of the right orbit. The rest of the radiological assessment, including the abdominal ultrasonography, reveals hydatid cysts, stage I, II, III and IV of GHARBI classification. Hydatid serology is positive. The patient underwent surgical treatment of orbital hydatidosis followed by medical treatment with Albendazole. Bacteriological examination confirmed the diagnosis of orbital hydatid cyst. The postoperative evolution was favourable. Orbital hydatidosis should be a differential diagnosis of cystic orbital lesions especially in endemic countries.

Keywords: Hydatidosis, health, deficit, cystic lesion

INTRODUCTION

The orbital location of the hydatid cyst is rare. It is endemic in some parts of the world, affecting mainly young adult and children [1-3]. Clinical presentation is marked by progressive, non-pulsatile and unilateral proptosis [1-4]. Imaging investigation visualizes the lesion, locates it and guides therapeutic management [3,5]. However, it is sometimes difficult to difference between hydatid cyst and other intraorbital cystic lesions [3]. The treatment is essentially surgical. The major risk of surgery is the perioperative rupture with its consequences [2,4,5].

CASE REPORT

It is about a 15 years male child without particular medical history who presented progressive proptosis of the right eye without alteration of the general condition.

The ophthalmological examination of the right eye shows grade II un-painful, non-inflammatory proptosis, non-axial, not reducible, not expansive, without breath or thrill, with slight conjunctivae

hyperemia without dilation of the episcleral vessels. He had a major loss in visual acuity at 1/10 and the back of the right eye shows a pallor of the right temporal hemi papilla and a diminished macular reflection.

The CT scan shows a cystic lesion in the superior angle of the right orbit and pushing the optic nerve inside, outside it is in close contact with the extern wall of the orbit, this formation is also seat of calcification (figure 1).

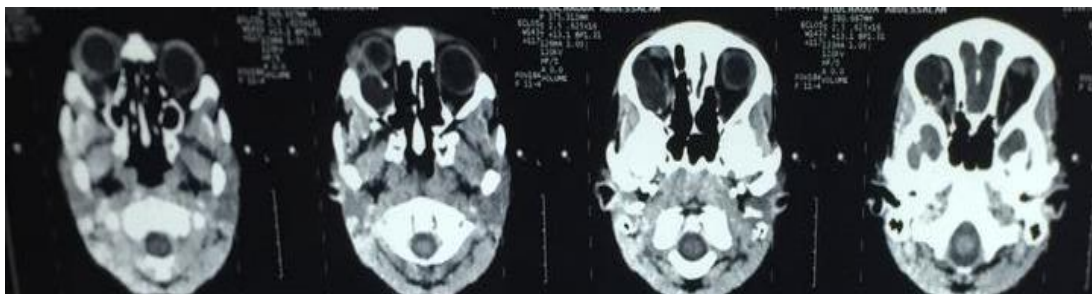


Fig-1: Brain CT scan in axial section without injection of the contrast shows a cystic lesion with calcification

The MRI confirms the results of the CT scan; the lesion is bilobed centered on the right external

muscle of the right orbit driving the neighboring organs blowing the roof of the orbit without any sign of intra

cranial extension, which may be related to a hydatid cyst (figure 2).

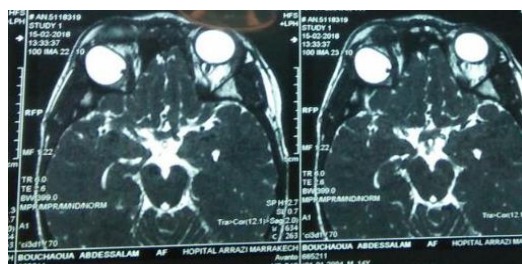


Fig-2: MRI in axial section T2 sequence that shows a bilobed cystic lesion without intra cranial extension.

Others paraclinicals exams showed a positive hydatid serology, the chest X ray was normal and abdominal ultrasound shows multiple hepatic hydatid cysts.

The treatment was medico-surgical: The surgical treatment consisted in a complete excision of the lesion by fronto-orbital approach (figure 3 and 4).

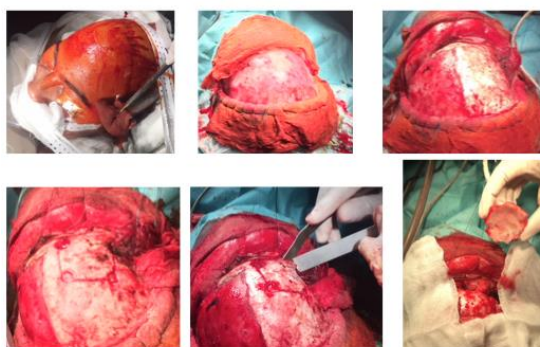


Fig-3: The different surgical times are demonstrated: A bitragal incision, dissection of the fascial plane to the orbital rim, realization of a right frontal flap with orbital deposit

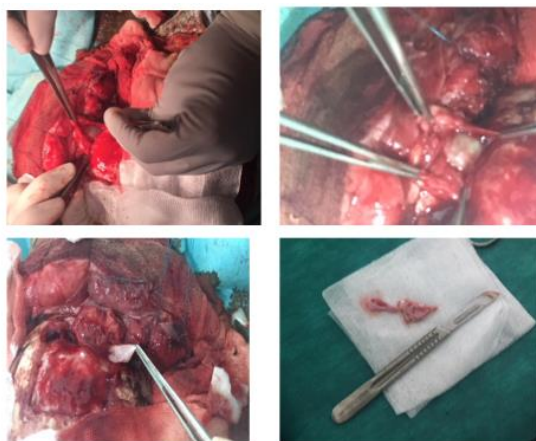


Fig-4: Careful dissection of the cyst, puncture and aspiration of its contents, total remove of the cyst wall

In our experience we used hypertonic saline serum, and oxygenated water to sterilize the cystic site and we instituted medical treatment with Albendazole: 10 mg/kg/day for 28 days in 3 separate cures of 15 days, and we had a long follow up to check for recurrence. The postoperative evolution was favorable with regression of exophthalmia and early visual recovery.

DISCUSSION

Hydatid disease is a zoonosis caused by the larval form of solitary worms of *Echinococcus Granulosis* [1-4]. It is an endemic disease in rural areas, cattle and sheep rearing areas: South America, Africa, the Middle East, Australia and mainly Mediterranean Rim [1-4].

The most frequent locations of the hydatid cyst are: liver (60-70%), lung (20%), mesentery, abdominal wall and spleen. The rare localizations are: retro orbital, gluteal, zygomatic, bronchial, parotid, urethra and tibia [3,4]. Orbital location constitutes less than 1% of all hydatid localizations [1,2,3,4]. Contamination comes from the gastrointestinal tract [5]. Association with other locations is not often reported in the literature [3,5].

All ages can be affected but there is predominance among young adults and children [1,2]. There is no sex predominance [1,2].

The clinic is characterized by progressive (one week to two years), non-pulsatile and unilateral proptosis [2,3,5]. At a late stage there will be a decrease in visual acuity with oculomotricity disorder that can lead to total ophthalmoplegia, optic atrophy, and papillary hyperemia by compression effect [5]. Other clinical manifestations may include chemosis, orbital pain, palpebral edema, conjunctivitis and orbital cellulitis [2,3]. A non-pulsatile and painless unilateral proptosis evolving gradually should be considered the diagnosis of hydatid cyst in endemic regions [2,3].

The location at the orbit may be variable (retrobulbar, extra-conical or intra-conical) but hydatid cyst usually sits at the supero-medial or super-lateral angle [1,3]. Left side is more affected than right side, which can be explained by the path of left carotid that is born directly from aortic arch [1,5]. Multi-cystic form is rare, it is most often a single cyst [5].

The purpose of the radiological assessment is to locate the lesion, establish relation to the ocular and orbital structures and to guide therapeutic management [2,3,5]. On CT the cyst is homogeneous well-limited, lobulated, intra-orbital, the center of each lobule has a density similar to water. Coronal sections evaluate relationships with orbital walls and existence of a possible erosion of bone structure [2,3,4]. In magnetic resonance imaging (MRI), hydatid cyst is T1 and T2 iso-signal. MRI also has the advantage of better visualizing internal structure, nature of the cyst and relationships with adjacent structures [2,3]. Orbital ultrasound is a useful test when a double-walled image has been visualized [2]. However, this radiological assessment does not make it possible to establish with certainty the differential diagnosis with other intra-orbital cystic lesions in particular: abscess, mucocele, intra-orbital hematoma, lacrymal cystic tumor or a lacrymal cyst, lymphangioma, epidermoid or dermoid cyst and teratoma [2,3]. Hydatid serology is generally negative especially in primary orbital location [2,3].

The treatment of orbital hydatidosis is mainly surgical. Different approaches can be used: transcranial, transconjunctival, orbitotomy,

transmaxillary, endoscopic transnasal [1,2,4,5]. The approach depends on the size of the cyst, its location, the patient's general medical condition and the surgeon's experience [1,4,5]. The most used approach is transcranial with fronto-temporo-orbito-zygomatic approach [1,2]. The most serious complication of surgical treatment is the intraoperative rupture of the cyst, which can expose to serious anaphylactic and inflammatory reaction and postoperative relapse [1,2,5]. Some authors recommend doing a puncture aspiration of the contents of the cyst followed by an injection of scoliodical solution for a few minutes and finally re-aspiration of the cyst and excision of its wall [1,2]. Scoliodical solutions used are: hypertonic saline, absolute alcohol, silver nitrate, hydrogen peroxide and prebendazole [1,2]. Hypertonic saline serum is the most used; it is the most appropriate solution for neurosurgical procedures because of its non-toxic nature for nerve structures [2].

Adjuvant medical treatment is always appropriate; it reduces the risk of relapse and decreases the size of the cyst if administered preoperatively (Albendazole, 2 to 4 weeks before surgery) [1,4]. The preoperative diagnosis being sometimes difficult, the administration of albendazole is only postoperative at a dose of 10 mg / kg for 12 weeks [1].

CONCLUSION

Clinical and serologic evaluations are not sufficient for diagnosis. Radiological investigations had an important role in the differential diagnosis. Hydatid cyst should be included in the differential diagnosis of unilateral proptosis in children, especially in endemic areas. Definitive diagnosis is rarely established preoperatively.

Contributions of the authors

All the authors contributed to the medical care of the patient, as well as the writing this article they approved.

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