CASE STUDY

Primary Hydatid Cyst of the Neck: Case Report☆

Hidatidosis cervical primaria. A propósito de un caso

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Clinical Case

We present the case of a 52-year-old male patient, lacking relevant personal antecedents, who came to consultation due to a right latero-cervical mass that had grown slowly over the previous year; in the last few months, there had been neck pain radiating to the upper right arm. Physical examination revealed a 4–5 cm mass with well-defined borders at the level of the right jugulo-carotid chain (levels II–III). This was accompanied by neck pain radiating to the upper right arm and a slight sensory deficit in the area of the C2–C3 metameres.

Cervical echography and CT showed a cystic mass with well-defined borders, lacking internal vascularisation, in the right prevertebral area, with anteromedial displacement of the vascular bundle connecting to the right paravertebral foramina. These findings were confirmed using NMR (Fig. 1). Given the inaccessibility of the cyst and the potential risk of rupture, fine-needle aspiration was omitted.

We decided to extirpate the lesion, locating it medial to the sternocleidomastoid muscle and deep under the vascular bundle of the neck. The cyst broke during this process, leaking clear fluid and multiple whitish vesicles suggestive of hydatid daughter cysts (Fig. 2). In the face of this finding, the suspicion of hydatid cyst was confirmed intraoperatively by the pathology department. Consequently, the entire operating field was washed and protected with hypertonic saline solution. Pressure on the cervical nerve roots was confirmed at the prevertebral level.

The final pathology examination reported laminated cyst wall and vesicles, indicative of hydatid cyst.

An extended study using chest X-ray and abdominal echography excluded both liver and lung involvement. The diagnosis was consequently primary cervical hydatid disease. The patient began treatment with albendazole in the immediate postoperative period. Serological studies were initially negative but turned positive 1 month postoperatively.

Discussion

Hydatid disease is a parasitic infection caused by the larva Equinococcus granulosis, endemic in Mediterranean countries, South America, the Middle East and Asia. During its life cycle, the dog is its definitive host; the adult larva sets its eggs in the dog’s intestines and the environment is then contaminated upon expulsion outside with the host’s faeces. Intermediate hosts can be sheep, cats and, oc-
sionally and accidentally, people,\(^1\) who become infected by ingesting contaminated food; the eggs then hatch in the duodenum. At that point, the parasite spreads by portal circulation and reaches the liver (the most frequently involved organ, 75% of the time, followed by the lungs, 15%); however, other routes have been described, such as porto-cava anastomosis, lymphatic circulation or direct egg inhalation, which could explain less frequent locations such as the spleen, kidneys, heart, central nervous system and even soft tissue, as in the case that we present here.\(^3\)

Head and neck hydatid disease is rare, with less than 0.5% being reported,\(^1\) including cases in the parotid gland, thyroid and parapharyngeal area.\(^3\) The neck location is limited to countries where echinococcosis is endemic and in patients with antecedents of prior hepatic and/or lung echinococcosis. It is very rare to find it as the primary presentation of hydatid disease.

Hydatid cysts in the neck are usually asymptomatic and slow growing, with occasional pressure symptoms. Spontaneous or iatrogenic cyst rupture can have serious consequences, including anaphylactic shock, even as the first symptom. Personal and family history, as well as the individual’s profession and place of residence, can help to suspect the diagnosis; however, the characteristic signs and symptoms are not pathognomonic in the head and the neck,\(^4\) making its diagnosis a real challenge.

Radiological studies are of great relevance, particularly echography, CT\(^2\) and NMR, with the NMR scan being the study of choice if there are complications or presence of a solid pattern.\(^2,4,5\) These tests are generally more sensitive than serological diagnosis. Consequently, the presence of internal septa or membranes floating in a cyst—even in the presence of negative serological results—is considered to be the pathognomonic criterion for hydatid cyst.\(^6\)

The disease is specifically diagnosed by analysing the fluid content of the cyst; however, despite this, the use of fine-needle biopsy is controversial, given the potential risk of spreading the eggs and of causing an anaphylactic reaction from cyst rupture.\(^4,6\)

Serological studies have low sensitivity and specificity, so a negative result does not exclude the disease. However, recent studies have shown that ELISA results have high specificity and sensitivity; this test has been gaining greater importance in follow-up of patients in treatment.\(^2\)

When hydatid disease is found, a complete systemic examination should be carried out to rule out involvement of other organs.

The treatment of choice is still surgery,\(^6\) making sure the germ layer of the cyst (producing the protoscolices) is removed. If the cyst ruptures, the surgical field should be surrounded by dressings soaked in hypertonic saline solution to avoid dissemination. A pericystectomy (removal of the cyst with its outermost fibrous layer) is normally performed.

Therapy with imidazole derivatives, fundamentally albendazole, is recommended as complementary treatment before and after surgery.\(^5\) It is also suggested when surgery is impossible, in cases of relapse or if multiple organs are involved. Standard therapy consists of 3 cycles of 4 weeks each, with serological and hepatic monitoring due to the hepatotoxicity of this drug.

A new therapeutic strategy, called PAIR,\(^7\) has been used for cases of hepatic or pulmonary involvement. This option consists of the percutaneous aspiration, injection and reaspiration of the cyst content, associated or not with intra-cystic application of imidazoles. Although the technique, still being developed, seems to offer fewer complications and relapses, using it for head and neck involvement is advised against, given the lack of experience with it in these cases.

**Conflict of Interest**

The authors have no conflicts of interest to declare.

**References**

