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# Multiple liver masses in a young woman from Morocco

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***ABSTRACT:***

Cystic hydatidosis is caused by *Echinococcus granulosus* and is endemic in the Mediterranean basin. We present a case of a 17 years old Moroccan woman presented with abdominal pain and fever. Abdominal ultrasound and computed tomography showed multiple liver masses and were consistent with cystic hydatidosis. The serology confirmed the diagnosis and a combined therapeutic strategy including oral albendazole and subsequent percutaneous drainage or traditional surgery.

## BACKGROUND

Echinococcosis is a parasitic zoonosis caused by tapeworms of the *Echinococcus* type, that presents part of its life cycle in definitive hosts (dogs and other carnivores) and intermediate hosts (sheep, goats, swine, etc.)[1]. We recognize primarily two pathogenic species of medical importance, which are: *E. granulosus* (Cystic Echinococcosis) and *E. multicularis* (Alveolar Echinococcosis)[2,3]. Humans are accidental intermediate hosts that become infected by eating eggs of parasites released in the environment[1]. The cysts can spread in multiple parts of the body, but in particular liver is the most frequently affected.

## CASE REPORT

A 17-year-old Moroccan woman arrived at the Emergency Room of the University Hospital in Sassari (Sassari, Italy) complaining abdominal pain and fever started ten days before.

The patient had made a complete abdominal ultrasound at another center, which showed the presence of a cyst (dimension 98 x 84 mm) in the V hepatic segment and other two cysts of the VI and VII segments. A chest-abdominal CT with contrast medium was required and confirmed the hypodense lesions with sporadic parietal calcifications between the IV-V segments and in the III segment. This last one had an exophytic development near the little gastric curve, measuring in their diameter 10 cm and 3.5 cm, respectively (Figure 1).

Another cyst with thick parietal calcification was found between the IV and VIII hepatic segments under the Glisson's capsule. The diameter of this lesion was *circa* 4 cm (Figure 2). The case report was discussed in a multidisciplinary meeting with radiologists and general surgeons.

The differential diagnosis included hepatocellular carcinoma or liver metastases, hepatic abscess, hemangioma or hamartoma. But, considering the anamnestic history, the young age and the radiological characteristics, in first hypothesis the lesions appeared to be cystic hydatidosis in different evolution phases. IgE and IgG with Enzyme-linked immunosorbent assay (ELISA) were performed and confirmed the suspect of Echinococcosis. The treatment was oral Albendazole 400 mg 1 tablet per oral twice daily for three months and then radiological follow-up with ultrasounds. A possible surgical treatment with puncture-aspiration-injection-reaspiration (PAIR) could be considered at the end of the medical treatment.

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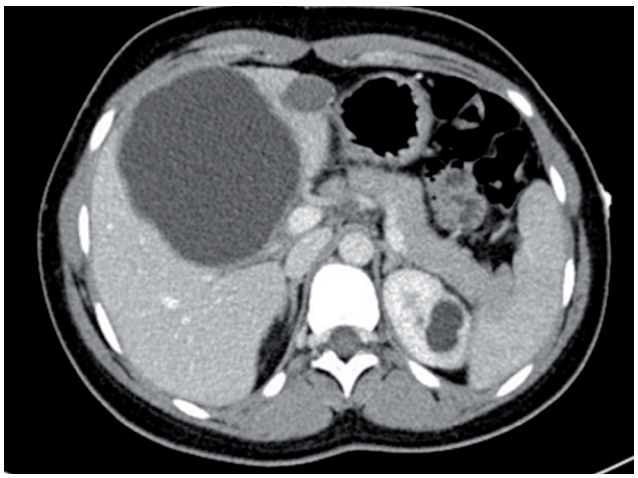

**Figure 1.** Contrast enhanced abdominal Computed Tomography showing two hypodense formations compatible with hydatid cysts of the IV-V e III hepatic segments.

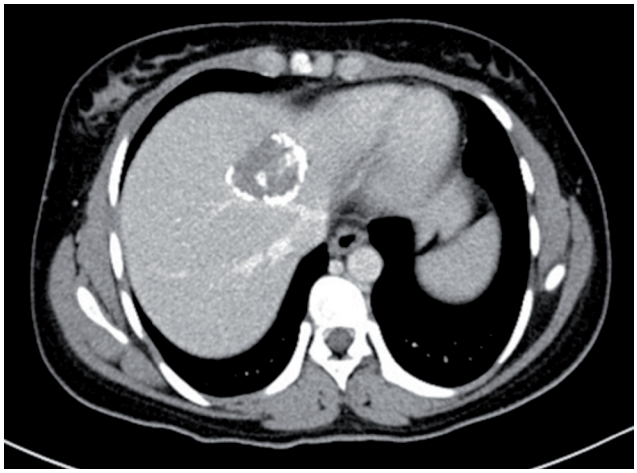

**Figure 2.** Contrast enhanced abdominal computed tomography showing and hydatid cyst of IV hepatic segment with calcified pericyst.

## DISCUSSION

There is not a unanimous agreement about the correct treatment of cystic hydatidosis[5]. The therapeutic choice could change for different reasons including the anatomical relations of the cysts with the vascular structures and with the other organs, the large dimension, the spread in multiple parts of the body, the ultrasound staging and the characteristics of the patient[2].

The association of the medical therapy with Albendazole and a percutaneous drainage with PAIR or traditional surgery are usually used for hepatic cysts and other abdominal sites. This kind of combined medical-surgery approach is indicated for inoperable patients, in case of relapse or failure of the only medical therapy[2,4].

In our case, we selected the combined therapy to minimize the surgical risk. The main challenges included the many hepatic lesions, the large dimension of the cyst between the IV-V segments (diameter >5 cm) and the anatomical connection with the vascular structures that could cause the rupture of the cysts. Cystic lesions of the liver represent a heterogeneous group of disorders with different etiologies. In many cases these lesions are found incidentally through imaging studies. Larger cysts could be symptomatic and eventually cause complications. Echinococcosis is only one of the potentially cause of liver cysts, but it is a significant public health problem in different developing areas of the world (South America, the Middle East and eastern Mediterranean, some sub-Saharan African countries, western China and the former Soviet Union)[6,7].

Surgery is not always the first correct approach, as in our case it was better to start with Albendazole or other anti-parasites treatment to reduce the dimensions of the cysts and minimize the surgical risk. A radiological follow-up with ultrasounds or CT or RMI is important to keep under control the efficiency of the medical therapy.

## CONCLUSIONS

Cystic hydatidosis is not a simple diagnosis, and the crucial role of the patient's anamnesis (the native country or travel history) should be emphasized, together with imaging and the laboratory tests. Further studies are needed to identify the correct therapeutic approach and follow up strategies. Epidemiologic studies should be performed to better clarify the real prevalence of the disease both in endemic and non-endemic countries.

### Conflict of Interest

The authors declare no conflict of interest.

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