

Duarte Nuno Vieira • Anthony Busuttil
Denis Cusack • Philip Beth
Editors



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D. Nikolić, R. Henriques de Gouveia, F. Pedrosa, I. Pinto Ribeiro, F. Costa Santos, J. Costa Santos

Forensic Pathology Department, South Branch of the National Institute of Legal Medicine, Lisbon, Portugal

GIANT HYDATID CYST: AN UNSUSPECTED POSSIBLE CAUSE OF SUDDEN DEATH

Introduction

Hydatid cyst (*Echinococcus multilocularis*) is an uncommon human parasitic infestation in the so-called developed countries, seen most usually in Mediterranean areas, Australia and South America where it is endemic.^{1,2,4,5} Signs and symptoms vary, depending on the anatomical location and dimension of the cyst.² Usually it is located in the liver (55-75%)^{2,3,5,6} and the clinical diagnosis requires a high level of suspicion.^{3,6,7}

Material and methods

The present case refers to a Caucasian 93-year old female with a non-natural cause of death, due to severe craneo-encephalic lesions after an accidental fall. A postmortem examination was performed.

Results

The autopsy showed blunt force trauma to the right side of the head with cranial fractures and brain contusion. Unexpectedly, an hepatic mass was found (Figure 1). It occupied most of the abdominal cavity and extended to the pelvic area. Macroscopically, it weighed 9500 g, measuring 33 cm of diameter (Figure 2). The cut surface was cystic and contained a yellowish amorphous material with multiple vesicles resembling “daughter cysts” (Figure 3).

Microscopic examination disclosed the presence of a surrounding fibrous capsule (Figure 4), an outer laminated and an inner germinative membranes (Figure 5), as well as scolices amidst necrotic material and neutrophilic infiltrates (Figure 6), thus confirming the macroscopic hypothesis of hydatid cyst of the liver.⁸ *

* FC = fibrous capsule, LM = laminated membrane, GM = germinative membrane, S = *scolices*.

Discussion and conclusions

Hidatid disease is a parasitic infection most frequently caused by the larval form of the tapeworm *E. granulosus*, which uses the dog as the definitive host.^{9,10}

After ingestion, the larvae go through the duodenal wall to the portal blood system and into the liver, where they are found in about 60% of cases.

Some of them may escape hepatic filtration and continue to the pulmonary circulation. A small percentage may reach the systemic circulation, resulting in infection and cyst formation in any organ.^{9,10}

There may be symptoms of a feeling of pressure, but generally the cyst does not cause any clinical symptoms for a long time.² The cysts increase slowly in size, commonly reaching a sizeable mass over several years.

The fluid inside the cyst has highly antigenic properties, which may result in anaphilactoid reactions due to leakage either into a vessel or body cavity.

In Portugal the incidence of hydatid disease is very low (79 cases between 2000 and 2004), probably due to underreporting of the disease. It is in Alentejo (agricultural region) that the highest incidence can be found – 80%.

This case highlights the importance of histopathological exams even in the context of violent deaths.

It's relevance, apart from the gigantic dimensions (the 2nd largest⁹ in the literature, to our knowledge), lies in the possibility of spontaneous or traumatic rupture - with legal implications, consequently causing anaphylactic shock, which may lead to sudden death.

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Figure 1 – Hepatic mass found at autopsy



Figure 2 – Hepatic hydatid cyst



Figure 3 – Content of hydatid cyst

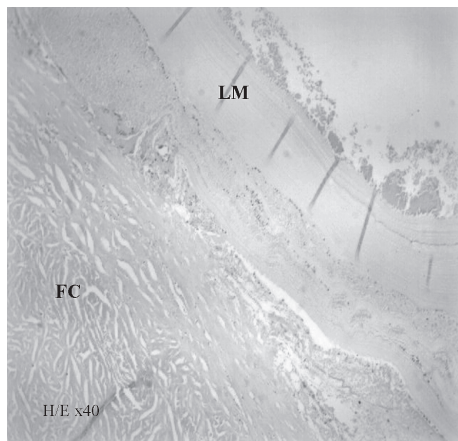


Figure 4 – Microscopic aspect of fibrous capsule and laminated membrane

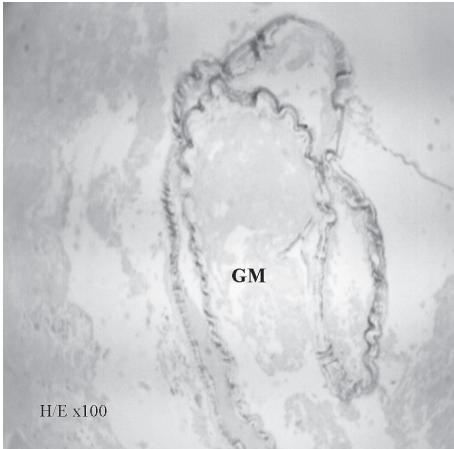


Figure 5 – Microscopic aspect of germinative membrane

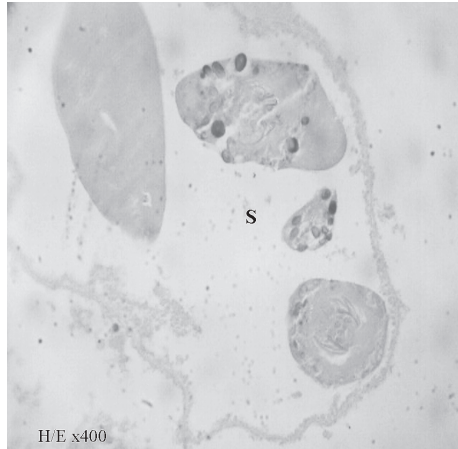


Figure 6 – Microscopic aspect of *E. multilocularis* scolices