

# Waterlily sign

José Vicente Arcos Machancoses,<sup>1</sup> Anna Parra Llorca,<sup>1</sup> Javier Martín Benlloch,<sup>1</sup> Ana Ortí Martín<sup>2</sup>

<sup>1</sup>Unit of Pediatrics, Hospital Universitari i Politècnic La Fe, València, Spain

<sup>2</sup>Division of Pediatric Infectious Diseases, Hospital Universitari i Politècnic La Fe, València, Spain

## Correspondence to

Dr José Vicente Arcos Machancoses,  
jvicentearcos@gmail.com

## DESCRIPTION

A 6-year-old boy, moved 2 years ago from rural northern Africa, was attended to in the emergency department showing productive cough and shortness of breath on effort, with decreased air inlet in right lung and under scapular isolated crackles. He presented with a 2-week history of physical decline and appetite loss. After no response to bronchodilators, a chest x-ray was performed, which revealed a giant cystic structure, occupying the middle lobe with typical features of hydatid cyst (figure 1). Contrast-enhanced CT (figure 2) revealed the waterlily sign that appears when the endocyst entirely collapses and floats in cyst liquid. It was associated with pleural collection and intrathoracic diffusion. No other sites were infested.

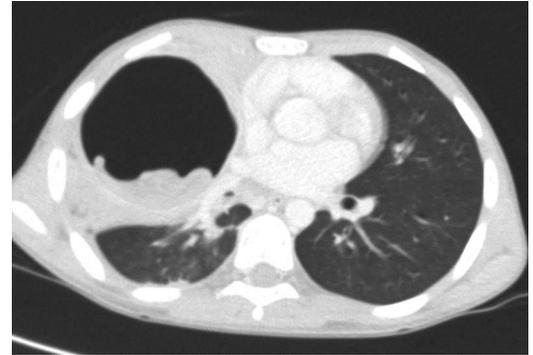
Hydatid cysts are caused by the larval stage of *Echinococcus* spp. The commonest host is dog and other carnivores. Man can be infected through consumption of the eggs contained in food or water contaminated by dog waste, and which has thus become an intermediate host. Many of the larvae are destroyed but some are encysted and grow.<sup>1</sup>

Clinical severity is related with the size of the cyst and its location. The most frequent sites are the liver, lung and peritoneum. Spleen, bone, soft tissue or heart have also been described as affected organs, both in children and adults. The death of the parasite usually leads to deflation of the cyst, wall necrosis and calcification.<sup>2</sup>

The confirmation of *Echinococcus* infestation was made by microscopical examination. Serology is available but imaging test when providing the waterlily sign, is highly reminiscent of hydatidosis. He was treated with albendazol combined with a



**Figure 1** Left panel: chest radiograph showing a cyst in the middle lobe. No other affected areas or calcifications observed. Right panel: lateral projection makes recognisable the collapse of the endocyst, seen in hydatid infections when fluid leaks out of the external wall and floats within the cavity.



**Figure 2** Contrast-enhanced CT. The waterlily sign represents the freely floating endocyst. Pleural effusion can be seen in close connection with the cyst.

radical cystectomy. He fully recovered after 1-year follow-up.

## Learning points

- ▶ Considering the patient's background including recent travels, birthplace and its epidemiological situation can point to the right direction in the diagnosis of a child attending an emergency care unit.
- ▶ Breathing difficulty not responsive to bronchodilators can justify ordering a chest radiograph to rule out alternative conditions rather than asthma, especially in children with history of physical decline or general symptoms.
- ▶ A high index of suspicion is needed to reach an early diagnosis of hydatid cyst and establish appropriate antiparasitic treatment and surgery when needed, which will improve the outcome of this condition.

**Competing interests** None.

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; externally peer reviewed.

## REFERENCES

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