DOI: 10.7860/JCDR/2024/70381.19551

Water Lily Sign: Typical of Ruptured Hydatid Cyst

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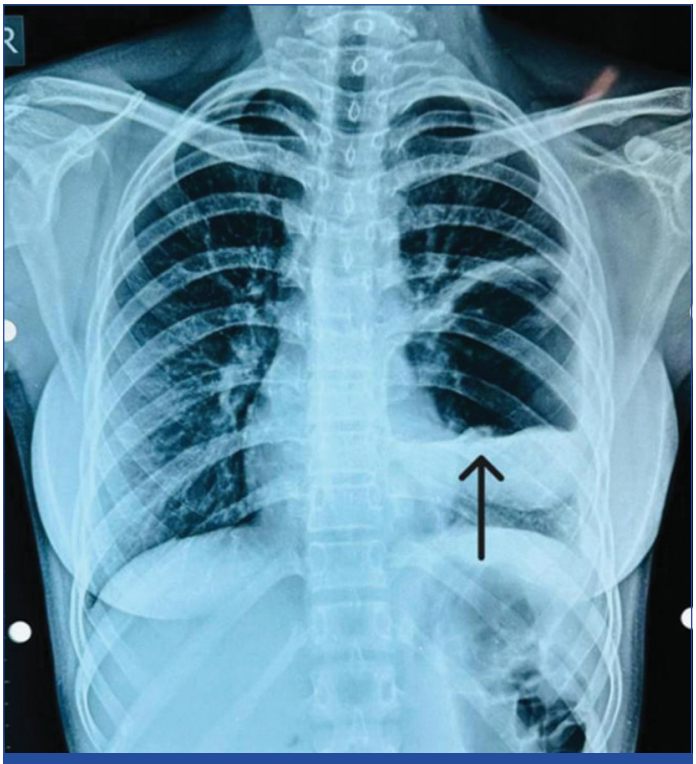
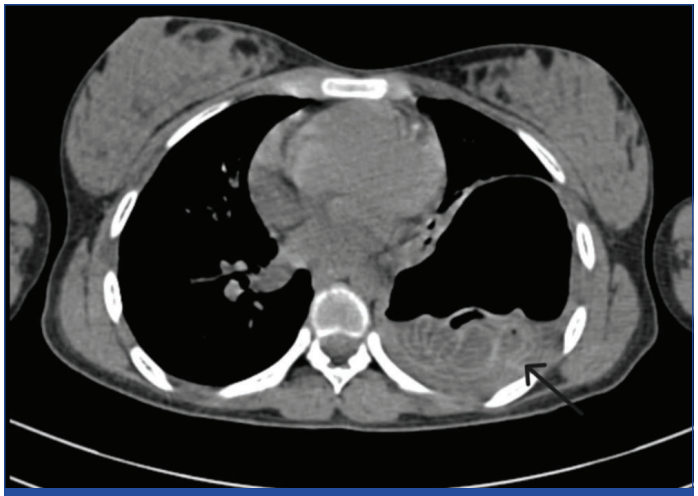
Keywords: Camalote sign, Echinococcus granulosus, Pulmonary hydatid cyst

A 16-year-old girl presented to the casualty with fever, chills, cough with mucoid expectoration, breathlessness, and left-sided chest pain for two days. She had similar complaints, including several episodes of vomiting associated with nausea, anorexia, and generalised weakness over the past two weeks. The patient had a history of hospital admissions for similar complaints in the past that were not resolved with any medications. On examination, she was cachectic, afebrile, had a pulse rate of 96 per minute, and a blood pressure of 110/70 mmHg. On auscultation, there was reduced breath sounds on the left mammary region, with some fine crepitations heard in the left infrascapular region. A chest X-ray revealed a large thin-walled cavity with an irregular air-fluid level due to folded membranes, appearing as a water lily sign or camalote sign [Table/Fig-1]. A Computed Tomography (CT) of the thorax showed a large cyst measuring 9×9 cm in the left lung, with an air-fluid level and crumpled membranes lying inside the cyst in the dependent position [Table/Fig-2]. A blood sample was tested for Immunoglobulin G (IgG) antibodies against Echinococcus granulosus, which was positive (1.27). A diagnosis of a pulmonary ruptured hydatid cyst was made. The patient was started on oral albendazole 400 mg twice daily for 21 days. She responded well to medical treatment and was referred to a thoracic surgeon at a higher center for excision of the cyst and lobectomy.



[Table/Fig-1]: A large thin-walled cavity with an irregular air-fluid level due to the folded membranes appearing as a water lily sign.



[Table/Fig-2]: Mediastinal view of Computed Tomography (CT) of the thorax showing a large cyst of 9×9 cm in size in the left lower lobe, with an air-fluid level and crumpled membranes lying inside the cyst in the dependent position i.e., Water lily sign.

A hydatid cyst is an acquired zoonotic disease that occurs due to close contact with infected canines or by consuming food or water contaminated with the larva of Echinococcus Granulosus or Multilocularis [1]. These cysts resemble a bunch of grapes and are typically of two types: uncomplicated and complicated (when the cyst ruptures). The most common complication is the rupture of the cyst, which can result from the rupture of the ectocyst (as in the present case), rupture of the pericyst, or rupture of all layers [2]. The most commonly affected organs are the liver, lungs, and others [2]. Pulmonary hydatid cysts grow almost three times faster than liver hydatid cysts [3]. In addition to radiological tests, various serological tests are performed to confirm the diagnosis of hydatidosis by detecting antibodies against E. granulosus, such as immunohistochemistry, indirect haemagglutination, immunofluorescence, immunoelectrophoresis, and latex agglutination [3]. Medical treatment typically involves oral albendazole or mebendazole. However, the preferred treatment for most hydatid cysts is careful surgical excision of the cyst due to a high rate of recurrence [4]. In the present case, the ectocyst likely ruptured, resulting in the appearance of a "water lily sign," characterised by the crumpling of membranes leading to a wavy air-fluid level. Shameem M et al., described a similar case, where the patient presented in shock, and the Computed Tomography (CT) image showed a water lily sign typical of a ruptured hydatid cyst [5].

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PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Mar 05, 2024
- Manual Googling: Apr 09, 2024
- iThenticate Software: Apr 25, 2024 (8%)

ETYMOLOGY: Author Origin

EMENDATIONS: 5

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **Mar 04, 2024**
Date of Peer Review: **Apr 05, 2024**
Date of Acceptance: **Apr 27, 2024**
Date of Publishing: **Jun 01, 2024**