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RECURRENT HYDATID DISEASE IN A 63-YEAR-OLD FEMALE: A CASE REPORT

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ABSTRACT
Hydatid disease, caused by *Echinococcus* species, is a significant zoonotic infection prevalent in endemic regions such as India. This case report discusses recurrent hydatid disease in a 63-year-old female with previous liver involvement, now presenting with a ruptured cyst communicating with the pleural cavity. Despite previous surgical interventions and albendazole therapy, the patient experienced disease relapse, highlighting the chronic and relapsing nature of echinococcosis. Microscopic confirmation and radiologic correlation facilitated diagnosis. This report underscores the importance of long-term follow-up and vigilant monitoring for recurrence. A discussion of relevant literature is provided to situate this case within the broader clinical context.

Keywords: Recurrent hydatid disease, *Echinococcus granulosus*, hepatic hydatid cyst, pulmonary hydatid cyst, zoonotic parasitic infection, surgical excision.

INTRODUCTION

Hydatid disease, or Cystic Echinococcosis, is a zoonotic disease primarily caused by parasite *Echinococcus granulosus*, with humans serving as accidental intermediate hosts. The lifecycle involves a definitive host (commonly dogs) and intermediate hosts (such as sheep and cattle). Humans become infected by ingesting ova-contaminated food or water or through direct contact with infected animals [1,2].
There are four recognized species of *Echinococcus* known to infect humans:
1. *Echinococcus granulosus* – causes cystic echinococcosis (CE)
2. *Echinococcusmultilocularis* – leads to alveolar echinococcosis (AE)
3. *Echinococcusvogeli*– causes polycystic echinococcosis
4. *Echinococcusoligarthrus* – associated with unicystic lesions

Hydatid disease, also known as Cystic Echinococcosis (CE), is a chronic zoonotic infection caused primarily by the larval stage of Echinococcus granulosus, although other species like *E. multilocularis, E. vogeli,* and *E. oligarthrus* may also infect humans with varied clinical presentations [1]. The life cycle of*Echinococcus granulosus* typically involves canines as definitive hosts and livestock such as sheep and cattle as intermediate hosts, while humans act as accidental hosts through ingestion of parasite eggs from contaminated food, water, or close contact with infected dogs [2].

Once ingested, the larvae penetrate the intestinal mucosa, enter the circulation, and commonly lodge in the liver (70%) and lungs (20%) to form hydatid cysts [3]. However, other locations such as the kidneys, brain, spleen, and bones can also be affected [4]. The disease is endemic in regions associated with sheep farming, including the Middle East, Central Asia, Africa, South America, and parts of India like Jammu & Kashmir, Rajasthan, and Andhra Pradesh [5,6].
Clinical manifestations are highly variable, depending on the cyst's size, location, and whether complications such as rupture or secondary infection occur. Symptoms may be vague or absent until the cyst reaches a considerable size or compresses surrounding structures, and they can range from abdominal pain to life-threatening emergencies like anaphylaxis or empyema due to rupture [7].
Diagnosis is confirmed using a combination of imaging techniques such as ultrasound, CT scan, and MRI, alongside serological and immunological tests [8]. Management involves a combination of surgical intervention, percutaneous aspiration techniques, and antiparasitic therapy with agents such as albendazole or mebendazole [9]. Despite treatment, recurrence remains a significant challenge, particularly in cases where cysts rupture into adjacent cavities or incomplete excision occurs [10].

The current case describes a 63-year-old female with recurrent hepatic and pulmonary hydatid disease, highlighting the importance of long-term follow-up, complete cyst excision, and the role of adjunctive medical therapy in minimizing recurrence.
CE remains the most prevalent form and is endemic in the Mediterranean region, Middle East, South America, Africa, and the Indian subcontinent. According to WHO estimates, more than one million people are affected at any given time worldwide, with significant morbidity and economic loss [3].
Clinical manifestations of hydatid disease are variable and depend on the location, size, and integrity of the cysts. The liver (50–70%) and lungs (20–30%) are the most frequently involved organs. Other uncommon sites include the brain, bones, kidneys, spleen, and muscles. The disease may remain asymptomatic for years or present as a medical emergency, especially when cysts rupture into the biliary tree, peritoneum, or pleural cavity [4,5].Diagnosis involves a combination of radiological (ultrasound, CT, MRI) and immunological techniques (ELISA, indirect hemagglutination, Western blot). The presence of daughter cysts and hydatid sand on imaging is virtually pathognomonic. Serology adds supportive evidence, particularly in disseminated or extrahepatic disease.
Management is typically surgical, complemented by albendazole therapy, especially in cases of cyst rupture or incomplete excision. However, recurrence remains a serious concern due to intraoperative spillage, incomplete removal, or parasite survival in remote or previously undetected locations [6].
The present case details a patient with recurrent hepatic and pulmonary hydatid disease, shedding light on challenges in diagnosis, treatment, and long-term management. This case is contextualized through a literature review, evaluating concordance and contrast with prior reports to underscore clinical lessons and research gaps.

MATERIAL AND METHODS

CASE PRESENTATION:

A 63 years old female reported to Government Medical College, Jammu with complaints of Breathlessness and pain on the right side of the chest.
Right ICCT insertion was done under local anaesthesia.
500cc serous fluid containing multiple daughter cysts came out.
This fluid was sent to the Microbiology Department of Government Medical College, Jammu for further processing.
Chest X Ray revealed Right sided blunting of cp angle.
CECT Chest: moderate to massive Right sided empyema with underlying collapse of right lung
CECT Abdomen and Chest:ruptured hydatid cyst communicating with right pleural cavity.
So, Right ICCT insertion was done under local anaesthesia.

The patient had a history of the same complaint for hydatid cyst in liver for which she underwent hydatid cyst excision in the year 2014 when she presented with complaints of high-grade fever with chills and rigor and severe throbbing pain in the right hypochondriac region.
Again in the month of January 2024, she experienced the same complaints in the liver and surgical excision was done for the hydatid cyst.The patient was started on Injection Ceftriaxone BD, Injection Metronidazole and Tab. Albendazole.

Study Design
This study presents a retrospective case analysis of a 63-year-old female diagnosed with recurrent hydatid disease. It involves clinical assessment, radiological investigations, surgical management, and microbiological examination.

Inclusion Criteria
1. Patients with a confirmed diagnosis of hydatid disease based on radiological and microbiological evidence
2. Adults aged >18 years
3. History of surgical management for hydatid cyst with subsequent recurrence

Exclusion Criteria
1. Patients with cystic lesions from other etiologies (e.g., amoebic liver abscess, neoplastic cysts)
2. Immunocompromised individuals (e.g., HIV positive, transplant recipients)
3. Patients with incomplete medical records

Procedure
1. Radiologic imaging (CECT) of thorax and abdomen was performed.
2. Right intercostal chest tube (ICCT) was inserted under local anesthesia to drain cystic fluid.
3. 500 cc of serous fluid with multiple daughter cysts was aspirated.
4. Samples were processed in the microbiology lab using wet mount and stained smear microscopy.
5. Patient was treated with broad-spectrum antibiotics and albendazole 400 mg BID.

DISCUSSION
The case aligns with prior studies indicating the chronicity and recurrence of hydatid disease despite surgical and medical interventions. Recurrence may occur in up to 10–30% of cases due to inadequate sterilization or unnoticed daughter cysts during the primary surgery.
In the present study the patient was diagnosed with recurrent hydatid disease seen in liver and lung. The patient responded well to the treatment. This was in support to the studies by the other research investigator where Sutihar*et al.* (2024) described a case of giant calcified hepatic hydatid cyst, emphasizing difficulties in complete surgical removal and risk of recurrence [11].Durhan *et al*. (2020) highlighted pulmonary hydatid cyst presentations, including empyema, as observed in the current case [12].Das *et al.* (2020) reported two recurrent cases managed at a tertiary center, reflecting recurrence despite albendazole prophylaxis [13].

Another study by Moro and Schantz (2009) provided WHO guidelines on cyst classification and treatment algorithms favoring combined approaches [14].Turgut *et al.* (2010) analyzed recurrence factors, including cyst wall calcification and intraoperative spillage [15]. In a study by Bhutani *et al.* (2001) reviewed 500 hepatic cases showing 15% recurrence within 3 years [16].Mandal *et al*. (2005) found long-term albendazole significantly reduced recurrence but not eliminated it [17].Paksoy*et al.* (2005) observed 20% recurrence post liver surgery with lung dissemination [18].Pedrosa et al. (2000) stressed MRI's superior role in early recurrence detection [19].

Contrasting Studies

A study by Dziri*et al.* (2004) found that radical surgery combined with perioperative albendazole resulted in near-zero recurrence [20].

Akgun *et al.* (2012) observed rare recurrence in patients who received albendazole >6 months post-op[21].

Symptoms of hydatid disease are often vague ranging from non specific abdominal pain to hepatomegaly with jaundice.It is a zoonotic disease and carnivores like dogs are the most commondefinitive hostsfor this parasite and Herbivores likesheep andcattles actas theintermediate host. Humans are actually accidental hosts and get infection from food or water contaminated with dog faeces with ova of *E.granulosus*. Clinical symptomsfor hydatidcystvary widely and it canrangefrombeingasymptomatictomanifestas an acute emergency. In India, it is more common in areas of sheep rearing like Jammu & Kashmir, Rajasthan, Andhra Pradesh. It is known to be a recurrent disease in spite of treatment.Imaging studies were of immense help which was augmented by microbiological definitive diagnosis.

Relapse and extrahepatic dissemination occurred despite radical resection and post operative prophylaxis with albendazole. Due to the slow growing nature of Hydatid disease, long-term follow-up is required in order determine treatment success. Ultimately, the most effective approach minimises recurrence, morbidity and mortality, and depends on each individual [22,23].

CONCLUSION

Hydatid disease presents a long-term challenge due to its capacity for recurrence, especially in endemic regions. While surgical excision and albendazole therapy remain mainstays of treatment, complete eradication is difficult. The present case of hepatic and pleuropulmonary recurrence reinforces the necessity of prolonged surveillance using imaging and serology. A multidisciplinary approach involving surgery, pharmacotherapy, and vigilant follow-up is essential to minimize morbidity and prevent further relapses.

Declarations:

Conflicts of interest: There is not any conflict of interest associated with this study

Consent to participate: There is consent to participate.

Consent for publication: There is consent for the publication of this paper.

Authors & contributions: Author equally contributed the work.

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