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Short Communication
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Extrahepatic and Extra Pulmonary Hydatid Cysts as Primary

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Abstract

Background: Hydatid cyst disease, caused by the larval stage of the parasite *Echinococcus granulosus*, commonly affects the liver and lungs but can also manifest in various extrahepatic and extrapulmonary locations. This paper presents a case series highlighting the clinical presentation, diagnostic challenges, and management strategies for patients with extrahepatic and extrapulmonary hydatid cysts.

Study Method: Patients who were operated on for hydatid disease or cystic lesions, which were later diagnosed as hydatid disease, between September 2022 to August 2023 were retrieved retrospectively. Patients with lesions localized outside the liver and the lung as well as in liver and lung were enrolled in the study. Fifty-two patients with extra-hepatic primary hydatid disease were treated surgically at our clinic. The cysts were located in different part of body.

Inclusion Criteria: Any patient of any gender admitted with diagnosis of hydatid cyst in any part of body with age more than 18 but less than 70 years irrespective of any comorbidities.

Ethical Approval: Ethical committee of Shree M.P. Shah Medical College, Jamnagar, Gujarat, India has approved this study.

Result: Surgical techniques like partial or total cystectomy with or without tube drainage are good option for management of extrahepatic and extrapulmonary primary hydatid cysts. There were no complications or mortality in the postoperative period. Hydatid cyst is considered in the differential diagnosis of cystic lesions, especially in endemic areas. Surgical technique planned according to the location of the cyst.

Conclusion: Cystectomy is a surgical option in extrahepatic and extrapulmonary hydatid cyst which is evaluate better in this study.

Keywords: Hydatid cyst; Rare localization; Primary hydatid disease

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Introduction

Hydatid disease is a parasitic infection that is usually caused by *Echinococcus granulosus*. Humans are intermediate hosts and become infected by handling infected dogs or other carnivore hosts. Echinococcal cysts are mostly located in the liver (70%) and the lung (25%) primary isolated extrahepatic hydatid disease is mostly seen within the abdomen with an incidence of 6% to 11%. Although some patients may be asymptomatic, the clinical presentation is mostly with abdominal pain or swelling of soft tissue with respect to disease localization, i.e. spleen, pancreas, kidney, retroperitoneum, urinary bladder, ovaries, bone, heart, thoracic wall, spinal column, thyroid gland, brain and muscles. Although radical excision of the cyst is recommended whenever possible, conservative surgery may be needed in a selective group of cases. This study aims to review patients operated in general surgery department of Guru Gobind Singh Government Hospital, Jamnagar for hydatid disease located outside the liver and the lungs (Figure 1) [1-4].

Materials and Methods

A retrospective study was done for all patients operated for hydatid disease between September 2022 to August 2023 in Guru Gobind Singh Government Hospital, Jamnagar, Gujarat, India. Those who had a hepatic and/or pulmonary disease were excluded. Then, written informed consent was obtained from patients who participated in this study. The localizations were classified into two groups as intra-abdominal or intramuscular, in order to obtain homogenous data. Demographics, preoperative information (symptoms and signs, serologic tests, radiologic imaging), operative

Figure 1: Hydatid disease located outside the liver and the lungs.

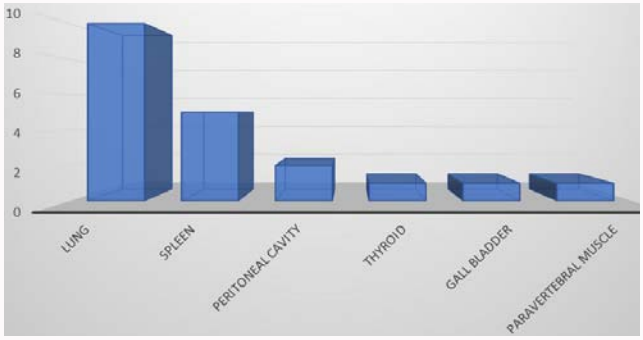

Chart 1: Sites where hydatid cysts found worldwide percentage-wise.

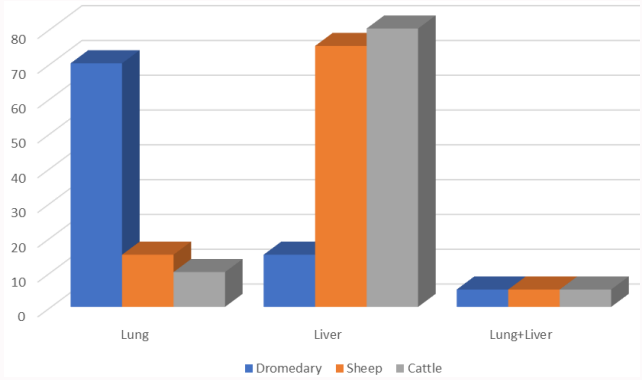

Chart 2: Comparison between percentages of organ involved in hydrated cyst between dromedary, sheep and cattle.

findings and techniques, postoperative data (complications, hospital stay) and surveillance (follow-up periods, outcome, and recurrence) records were retrieved from patient files. Indirect Hemagglutination (IHA) test was the available method for serological confirmation. Albendazole (Andazol/Biofarma) was chosen as the anthelmintic drug, if it was decided to treat the patient before surgery. Records were retrieved from patients' casefiles.

Inclusion criteria

Any patient of any gender admitted with diagnosis of hydatid cyst in any part of body with age more than 18 but less than 70 years irrespective of any comorbidities.

Ethical approval

Ethical committee of Shree M.P. Shah Medical College, Jamnagar, Gujarat, India has approved this study.

Following 8 patients had Extra Hepatic and Extra Pulmonary Hydatid Cysts as Primary.

Table 1: Frequency and percentage of infected people to hydatid cyst according to organ involvement.

Infected Organs	Frequency of infected people to cyst	Percentage (%)
Liver	36	69
Lung	7	13
Liver + Lung	3	6
Peritoneum	2	4
Liver + Kidney	1	2
Liver + Lung + Bone	1	2
Liver + Peritoneum	1	2
Spleen	1	2
Total	52	100

Results

We identified seventy cases of extrahepatic and extrapulmonary hydatid cysts, including involvement of the spleen, kidney, brain, bone, and soft tissues. The majority of patients presented with nonspecific symptoms such as pain, swelling, or constitutional symptoms, leading to delays in diagnosis. Imaging modalities, including ultrasound, Computed Tomography (CT), and Magnetic Resonance Imaging (MRI), played a crucial role in diagnosis. Surgical excision, combined with antiparasitic therapy, was the mainstay of treatment. Complications such as cyst rupture, anaphylaxis, and recurrence were observed in a subset of patients. Fifty-two patients were operated in Guru Gobind Singh Government Hospital, Jamnagar, Gujarat for hydatid disease between September, 2022 and August, 2023. Among those, forty-four (84.615%) patients had Liver as primary in hydatid cyst lesion with eight cases (15.38%) were excepted having no primary liver hydatid cyst with lesion on different body parts (Rare Cases) (Chart 1, 2 and Tables 1-3) [5].

Discussion

The diagnosis of extrahepatic and extrapulmonary hydatid cysts requires a high index of suspicion, particularly in endemic regions. Imaging techniques such as ultrasound, CT, and MRI are invaluable for accurate localization and characterization of cystic lesions. Treatment involves a multidisciplinary approach, with surgery being the cornerstone for cyst removal, supplemented by medical therapy to prevent recurrence and complications. Close follow-up is essential to monitor for recurrence and manage any complications promptly. This study is compared with several studies done previously and results are statistically significant [1,6-9].

Table 2: Preoperative data of patients with extrahepatic and extrapulmonary hydatid cysts involved in study.

Patient no.	Age (years)	Sex	Symptoms and signs	Serological tests	Radiologic imaging	Localization
1	40	F	Abdominal pain	IHA +	CT, US	Spleen, peritoneal cavity
2	30	M	Abdominal pain	IHA +	CT, US	Spleen
3	46	F	Abdominal pain	IHA +	CT, US	Spleen, right thigh
4	26	M	Abdominal pain, jaundice	IHA −	CT, MRI, US	Head of pancreas
5	39	F	Abdominal pain	IHA +	CT, US	Scapular Region
6	40	F	Palpable mass	IHA−	US	Pelvis
7	20	F	Palpable mass	IHA +	MRI, US	Gluteal muscle
8	68	M	Palpable mass, gluteal pain	IHA +	US, CT	Sacral region

F: Female; M: Male; IHA: Immune Hemagglutination; CT: Computed Tomography; MRI: Magnetic Resonance Imaging; US: Ultrasonography

Table 3: Operative management and follow up in patients having extrahepatic and extrapulmonary hydatid cysts.

Patient no.	Operative approach	Hospital stay (day)	Follow-up period (month)	Long-term outcome
1	Splenectomy, Cystectomy	7	9	Incisional hernia
2	Splenectomy	15	10	-
3	Splenectomy, Total Cystectomy	20	12	-
4	Partial pericystectomy	25	18	Incisional hernia
	Cystojejunostomy			
	Jejunojejunostomy			
	Cholecystectomy			
	T-tube drainage			
5	Total cystectomy	7	5	-
6	Laparoscopic total cystectomy	8	12	-
7	Total cystectomy	5	9	-
8	Total cystectomy	6	12	-

Conclusion

Extrahepatic and extrapulmonary hydatid cysts represent a diagnostic and therapeutic challenge due to their diverse clinical presentations and atypical locations. A multidisciplinary approach involving radiologists, surgeons, and infectious disease specialists is crucial for timely diagnosis and optimal management. Further research is warranted to explore novel diagnostic modalities and treatment strategies for improving outcomes in patients with these rare manifestations of hydatid cyst disease.

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