

Hydatid Cyst: Study of 21 Cases in a Tertiary Care Hospital of Punjab**Manmeet Kaur¹, Aradhna², Harpal Singh³, Harleen Kaur⁴**¹Assistant Professor, Govt. Med. College, Patiala²Assistant Professor, Govt. Med. College, Patiala³Professor & Head, Govt. Med. College, Patiala⁴Junior Resident, Govt. Med. College, Patiala

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Abstract:**Introduction:** Echinococcosis is a zoonotic disease which is caused by tapeworm of genus Echinococcus excreted in the faeces of infected dogs.**Aims and Objectives:** This study was done to describe the Public health burden of Hydatid disease in local population as this disease causes significant morbidity and mortality. Hydatid disease poses a great health challenge as the cases are usually asymptomatic but can cause life threatening complications if neglected.**Material and Methods:** This was a retrospective study done over a period of 2.5 years in a tertiary care centre in Punjab. Data was collected from the patient requisition forms in the department of pathology and included patient profile, clinical symptoms, investigations and history of exposure to dogs or farm animals. The collected data was tabulated.**Results:** A total of 21 cases of hydatid cyst were diagnosed histopathologically over a period of 2.5 years. In our study, the most common site of involvement was liver (50-77%), followed by lung (18-35%), abdominal cavity and brain. There were two cases of isolated splenic Hydatid cyst in the study which is a rare site. Most common age group involved was between 20-40 years.**Conclusions:** The disease presents with hydatid cyst and other varied symptoms according to the site involved. Hydatid disease can be diagnosed on the basis of signs and symptoms, serological tests and imaging studies. The diagnosis of hydatid disease is however confirmed by histopathological examination. Hydatid disease is of important public health concern.**Keywords:** Echinococcosis, Hydatid disease, Scoleces, Isolated splenic hydatid, Casoni, Laminated cyst wall.

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Introduction

Hydatid disease is endemic in many countries of the world. In India, it is highly prevalent in Andhra Pradesh, Tamil Nadu and Jammu and Kashmir [1,2]. The most common form found in humans is cystic echinococcosis caused by Echinococcus granulosus. It can occur in 4 forms: cystic Echinococcosis also known as Hydatid disease, caused by Echinococcus granulosus; alveolar Echinococcosis caused by Echinococcus multilocularis and 2 forms of neotropical Echinococcosis.

Echinococcus granulosus or the dog tapeworm passes its life cycle in 2 hosts. The adult worms reside in the small intestine of definitive hosts such as dogs and other canines. Eggs passed in the faeces are ingested by intermediate hosts (sheep, goat, cattle) while grazing in the fields. Humans are accidental host and acquire infection via direct contact with infected dog or through faeco-oral route. After gaining entry through the gut, egg

hatches and the larval form travels via hematogenous route and can lodge in any organ. The larva develops into a cyst and thus the disease presents with slow growing masses called cysts in different locations of the body [3]. Hydatid disease can affect any organ of the body, most common being the liver (50-77%). Other sites of involvement are lungs (18-35%), spleen, kidney, peritoneal cavity, muscles, brain and heart [4,5].

Most of the patients are asymptomatic but clinical presentation can vary depending upon the size and site of the lesion. Hydatid cyst of liver causes hepatomegaly, abdominal pain, nausea, vomiting and jaundice. Eosinophilia is a common feature seen in parasitic infestation. Fatal anaphylaxis can occur if the cyst gets ruptured [6]. Diagnosis of hydatid disease can be made using X Ray, Ultrasonography, CT scan. Some serological tests can be used for the diagnosis such as Casoni intradermal skin test, complement fixation test,

ELISA and western blot. Other diagnostic tools include fluid cytology and FNAC. Histopathological examination is however gold standard for confirmation of the diagnosis [7].

Material and Methods

We present a series of 21 cases of hydatid cyst diagnosed histopathologically over a period of 2.5 years in the tertiary care hospital of Patiala.

Specimens suspected as Hydatid disease were received in 10% Neutral buffered formalin in Department of Pathology. Specimens were grossed and tissue sections were fixed in formalin and blocks were made by embedding the tissue in paraffin wax. Blocks thus made were cut using microtome into 3-micron thick sections and slides were made. Slides were stained with Hematoxylin and Eosin stain. These were then subjected to histopathological examination for the confirmation of diagnosis of Hydatid disease. Clinical data including radiological investigations, hematological investigations, serum IgE and echinococcus serum

IgG levels were also observed from the requisition form of the patients.

Results

This study includes 21 cases of Hydatid disease diagnosed on Histopathological Examination.

Frequency of Hydatid cyst

1. Liver was involved in 17 cases, of which 14 had isolated liver hydatid disease and 2 had associated lung hydatid cyst and 1 had associated splenic hydatid disease.
2. Isolated lung hydatid disease was found in 2 cases.
3. Isolated splenic hydatid disease was found in 2 cases.

Out of 21 cases, 13 cases were females and 8 were males. Most common age group involved was between 20-40 years. Most common symptom with which patient presented in our study was Abdominal Pain.

Table 1: Age distribution

Age group	No of cases
0-20 years	06
20-40 years	10
40-60 years	02
60-80 years	03

Most common age group involved is between 20-40 years.

Table 2: Summary of clinical data

Case no	Type of specimen	Age/Sex	Clinical presentation
1	Splenic hydatid cyst	24/F	Abdominal pain
2	Liver hydatid cyst	15/F	Abdominal pain
3	Liver hydatid cyst	70/M	Abdominal fullness
4	Liver hydatid cyst	16/F	Abdominal pain and nausea
5	Liver hydatid cyst	58/F	Abdominal pain, nausea and vomiting
6	Liver hydatid cyst	12/F	Pain in abdomen and vomiting
7	Liver hydatid cyst	36/F	Pain abdomen and nausea
8	Lung hydatid cyst	19/M	Cough and chest pain
9	Liver hydatid cyst	35/F	Pain in abdomen
10	Hydatid cyst of Liver and Lung	14/F	Pain in abdomen, cough and fever
11	Liver hydatid cyst	26/F	Abdominal pain
12	Hydatid cyst of Liver and Spleen	30/M	Pain in epigastrium and right upper quadrant of abdomen, nausea, vomiting and fever
13	Liver hydatid cyst	24/M	Abdominal pain and nausea
14	Liver hydatid cyst	29/M	Pain in Right hypochondrium and epigastrium, fever with chills
15	Liver hydatid cyst	36/F	Abdominal pain
16	Liver hydatid cyst	31/F	Abdominal pain
17	Splenic hydatid cyst	62/F	Pain in abdomen, vomiting and fever
18	Hydatid cyst of Liver and Lung	18/F	Cough with expectoration and fever
19	Hydatid cyst of Lung	65/M	Cough, difficulty in breathing and fever
20	Liver hydatid cyst	43/M	Pain in Right hypochondrium, fever and loss of appetite

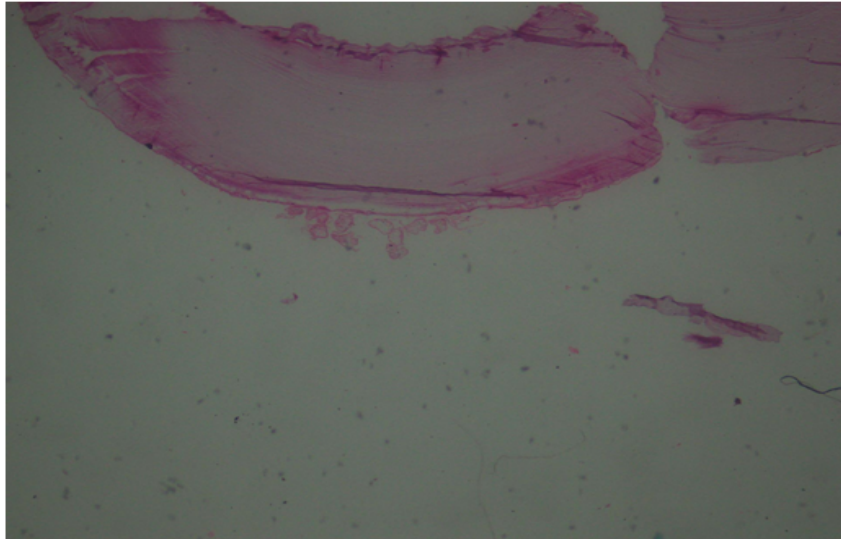


Figure 1: Image shows inner germinal layer and outer laminated cyst wall (H&E 10x)

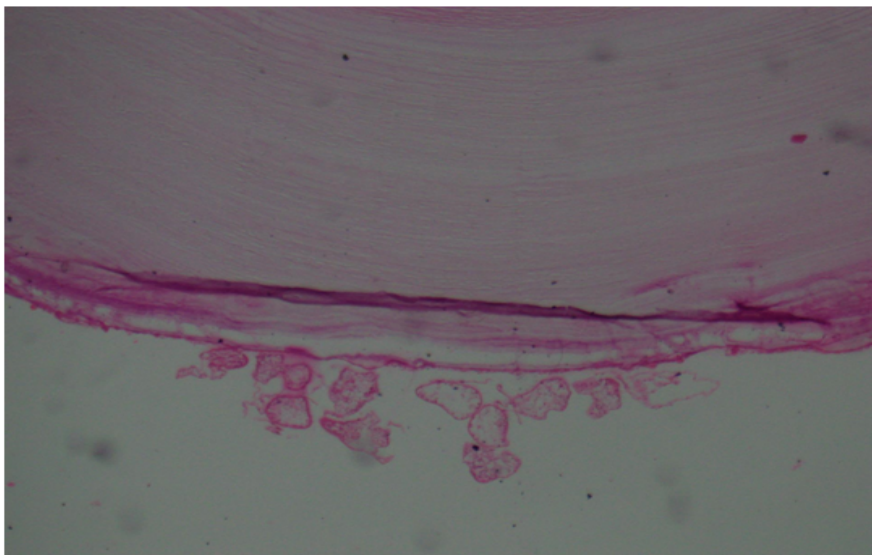


Figure 2: Inner germinal layer and outer laminated cyst wall (H&E 40x)

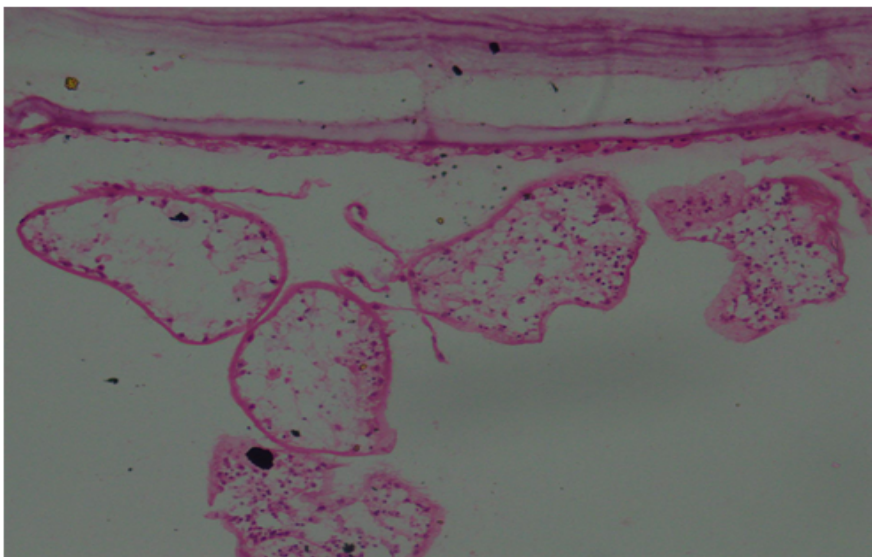


Figure 3: Acellular laminated membrane with scoleces and eosinophilic inflammatory infiltrate (40x)

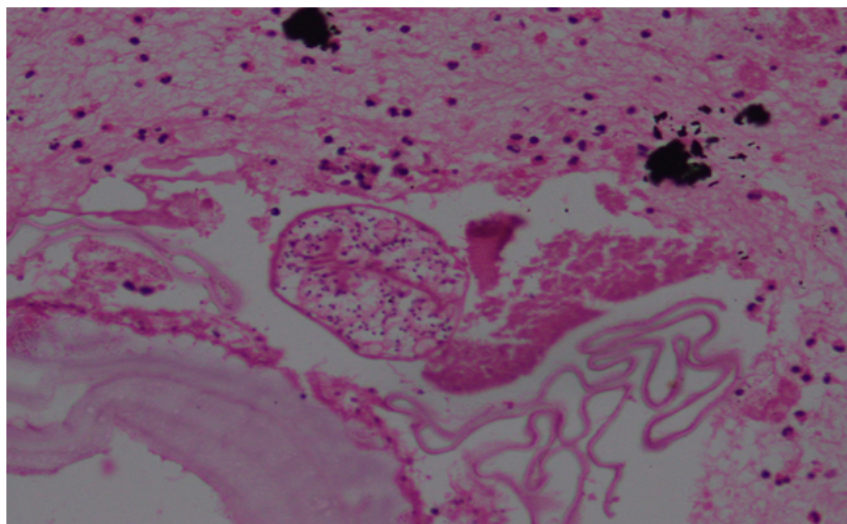


Figure 4: Cyst wall with scoleces and inflammatory infiltrate comprising of eosinophils (40x)

Discussion

Hydatid disease is a zoonotic infection in humans caused by the infestation of tapeworm of genus *Echinococcus*. It is a global public health problem. Worldwide incidence of hydatid disease accounts to be 1-200 cases among 1 lakh individuals [8]. The disease is more prevalent in rural and low socioeconomic areas or immigrants from such areas [9]. Thirteen out of 21 patients in our study belonged to rural areas. Dogs being the definitive host, plays a key role in the transmission of disease.

Many of the patients in our study had dogs as their pets, therefore proving that dogs have a crucial link in the transmission. As per our study, most of the cases were from liver followed by lung and spleen which is consistent with the worldwide epidemiological data [10].

Overall hydatid cyst prevalence is more in females than males. Our study showed similar trend. Out of 21 cases, 13 cases were from females and 8 from males [11]. Female preponderance can be attributed to the fact that females are more involved in food handling practices. Hydatid cysts can occur at any age group but are common in young people. Many patients usually acquire the disease during childhood, but do not present with clinical signs and symptoms till late adulthood.

Most common age group involved in our study is between 20 to 40 years which is consistent with other studies [12]. Clinical presentation of the disease remains non-specific and may vary as per the site involved. Patients with liver hydatid disease in our study presented with Right Upper quadrant pain, nausea, vomiting, hepatomegaly and fever. Most common presentation of patients with lung hydatid disease was difficulty in breathing, cough and fever. Patients with splenic hydatid disease presented with pain upper abdomen, vomiting and fever. The diagnosis of hydatid disease relies

mainly on the clinical presentation and radiological investigations along with serological analysis. In our study, the most common radiological finding on USG came to be multiseptate cystic lesion in the organ involved. CECT revealed hypodense cystic lesion with foci of calcification with few septations. Hematological investigations showed increased ESR and eosinophilia in few cases. Most of the cases had increased IgE and echinococcus serum IgG levels.

Conclusion

Hydatid disease is of important public health concern. It is a neglected disease which is commonly found in rural and low socioeconomic areas. It is most common in liver and lung but can be found in any part of the body and should be considered as a differential for any cystic mass. Females and young adults are more prone to get the disease. Patients usually present with vague abdominal pain. The disease is associated with recurrences, high morbidity and mortality.

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