Original Article

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Study of Intra Abdominal Hydatid Cyst

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Abstract

Background: Hydatid disease (cystic echinococcosis) is a zoonotic infection caused by larval form of tapeworm Echinococcus Granulosus. Echinococcus infestation has been known for many centuries. Most common sites for cysts are lung and hepatic hydatidosis. They have a diverse clinical spectrum from being asymptomatic to symptoms arising due to involvement of surrounding structures or dissemination or secondary infection. Disease is endemic in Mediterranean basin, Central Asia, Africa and South America. In India, Andhra Pradesh and Tamilnadu predominate with incidence of hydatid disease. Hydatid disease is common in Saurashtra region due to cattle rearing and farming as occupation. It is commonly seen in the lower socioecomic strata due to poor personal hygiene and sanitation. In India the highest prevalence is reported in Andra Pradesh, Tamil Nadu and Jammu Kashmir. Hydatid disease is a zoonotic disease caused by echinococcus granulosus (larval stage). echinococcus granulosus and echinococcus multiformis are the two main species causing hydatid disease. Animals are the Definitive host and intermediate hosts. Humans are accidental intermediate hosts. The aim of this study was to determine the sociodemographic characteristics, presentation patterns, type of surgical management and outcome of patient operated on for intra abdominal hydatid cyst.

Materials and Methods: All the patients suffering from hydatid disease who were admitted in our hospital from May 2019 to June 2020 were included in this study. All the patients underwent thorough clinical examination with detailed history and investigation as per protocol. All patients were followed for 3 months.

Inclusion Criteria: Documented intraabdominal hydatid disease.

Conclusion: Hydatid disease is common in Saurashtra and Kutch regions of Gujarat & other states of India. Patients mostly present at the age group of 20-40 years. Sex distribution is equal. Occupation like agriculturist, residing in rural areas and low socioecomomic status are considered to be risk factor for hydatid disease. Most commonly involved organ was liver followed by peritoneal involvement followed by spleen. Most common lobe involved was right lobe. Gharbi type 2 cysts are common. Most common treatment modality is surgical with medical management only reserved for small cysts. Decompression of cyst with deroofing and omentoplasty/ capitonnage was the commonest procedure adopted to deal with hydatid disease.

Keywords: Hydatid cyst, Liver.

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Introduction

Hydatid disease (cystic echinococcosis) is a zoonotic infection caused by larval form of tapeworm Echinococcus Granulosus. Echinococcus

'infestation has been known for many centuries. Hippocrates and Galon (460-377 B.C.) were clinically aware of 'liver full of water'1. Most common sites for cysts are lung and hepatic hydatidosis. They have a diverse clinical spectrum from being asymptomatic to symptoms arising due to involvement of surrounding structures or dissemination or secondary infection. Disease is endemic in Mediterranean basin, Central Asia, Africa and South America. In India, Andhra Pradesh and Tamilnadu predominate with incidence of hydatid disease2 . In European countries annual incidence of human cystic echinococcosis vary from 8 per 1,00,000 population. It has been categorized under seven endemic zoonotic disease by WHO. As per WHO, in humans, the incidence of surgical cases ranges from 0.1 to 45 cases per 100 000 and the real prevalence ranges between 0.22% to 24% in endemic areas. The economic consequences of the disease are not known3 . Hydatid disease is common in Saurashtra region due to cattle rearing and farming as occupation. It is commonly seen in the lower socioecomic strata due to poor personal hygiene and sanitation. In India the highest prevalence is reported in Andra Pradesh, Tamil Nadu and Jammu Kashmir.

Hydatid disease is a zoonotic disease caused by echinococcus granulosus (larval stage). Echinococcus granulosus and echinococcus multiformis are the two main species causing hydatid disease. Animals are the Definitive host and intermediate hosts. Humans are accidental intermediate hosts. Disease can occur in any age group and humans are the end stage to this disease. The disease has a slow pace of growth in man. Liver is the predominant organ to be involved in Hydatid disease. In addition to liver, peritoneum, spleen, kidney and pancreas can also be involved. In India, this remains a cause for morbidity and mortality especially in the rural areas. It has become a challenge to the treating surgeon to decide about the surgical or medial management.

Radiological and serological investigations done even at the early stage of the disease help to arrive at a diagnosis. The disease has to be diagnosed at a very early stage to be treated adequately without occurrence of for untoward complications. The aim of this study was to determine the sociodemographic characteristics, presentation patterns, type of surgical management and outcome of patient operated on for intraabdominal hydatid cyst. This study of 40 patients suffering from hydatid cyst disease in the period of May 2019 to April 2020 at a Government hospital in Gujarat.

Material and Methods

All the patients suffering from hydatid disease who were admitted in our hospital from May 2019 to June 2020 were included in this study. All the patients underwent thorough clinical examination with detailed history and investigation as per protocol. All patients were followed for 3 months.

Inclusion Criteria: Documented intra abdominal hydatid disease.

Proforma

Personal Data

- Name
- Age/sex
- Occupation
- Socioeconomic class
- Registration number.
- Date of admission
- Date of surgery
- Date of discharge
- History: Chief Complaints
  - Lump,
  - Pain in abdomen,
  - Fever,
  - Dyspepsia,
  - Jaundice,
  - Vomiting,
  - Itching,
  - Bowel disturbances,
  - Others
- Past History: Any history of similar complaints before
- Treatment history Family History
- Similar disease in relatives
- Personal History
- Diet,
- Contact with animal,
- Habits
- Physical Examination
- General Examination
  - Vital signs,
  - Built and nourishment,
  - Pallor,
  - Icterus,
  - Skin rashes,
  - Scratch marks,
  - Cyanosis,

- Lymphadenopathy,
- Swelling elsewhere

- Abdominal Examination

A. Inspection

- Counter of abdomen: Fullness/Flat
- Umbilicus position: stretched/ everted/ pushed
- Movement with respiration
- Visible pulsations/ peristalsis
- Dilated veins
- Skin
- Hernia orifices
- External genitalia
- Renal angle
- Supraclavicular fossa
- Any mass: Number: Site: Shape: Size: Extent: Surface: Borders: Movement with respiration:

B. Palpation

- Local Temperature
- Tenderness
- Mass: Number: Site: Shape: Size: Extent: Surface: o Borders: Movement with respiration:
- Palpation:
- Local temperature
- Tenderness
- Mass: number:, size, shape, extent, surface, borders, movement with respiration
- Consistency: soft/ cystic/ firm/ hard
- Pulsations
- Mobility: Free/ Restricted Vertical/ horizontal
- Impulse on coughing:
- Plane: Parietal/ Intraperitoneal / Retroperitoneal
- Organomegaly
- Guarding/ Rigidity
- Palpation of hernia orifice:
- External genitalia
- Any other mass:

C. Percussion

- Percussion note over the mass:
- Whole of the abdomen: Resonant/ Dull
- Free Fluid: Shifting Dullness/ Fluid Thrill
- Liver Dullness: Normal/ Obliterated
- Dullness over the Renal Angle
- Hydatid Thrill

D. Auscultation

- Bowel Sounds
- Bruit

E. Per Rectal Examination

Systemic Examination

- Respiratory system
- Cardiovascular system
- Central nervous system

Investigations

Blood

- Routine Haemogram
- CBC: Eosinophil Count, ESR, WBC count, Platelet Count.
- Random blood sugar
- Blood urea Serum creatinine
- Liver function tests: Total Bilirubin (Direct Bilirubin, Indirect Bilirubin), SGPT
- HIV
- HbsAg
- Stool Urine Examination
- Radiological Examination: Chest radiograph, Abdominal radiograph, Ultrasonography of abdomen, CT scan of abdomen.
- Treatment
  - Chemotherapy
  - Operative procedure and intra operative finding
  - Post operative course
  - Post operative complication.

Observation

This study comprises of 40 patients of hydatid disease conducted at department of general surgery in our hospital from May 2019 to April 2020. All patients who are fitting into the criteria are included.

Table : Age Wise Distribution of Patients.

Age Groups	Number of Patients (N=40)	Percentage
< 20 years	5	12.5%
20-40 years	27	67.5%
>40 years	8	20%

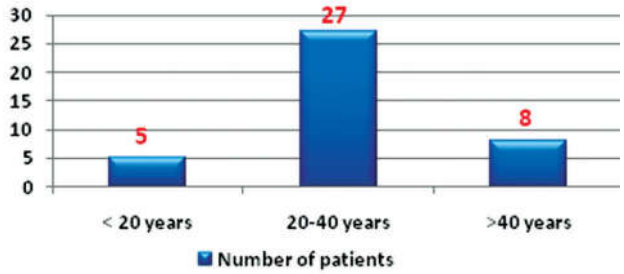

Fig. : Age Group.

In our study out of 40 patients most of them were in the age group of 20-40 years i.e 67.5% of them and the second common age group being > 40 years (20%).

Sex Distribution

Equally distributed amongst males and females.

No. of Patients	Male	Female
40	20	20

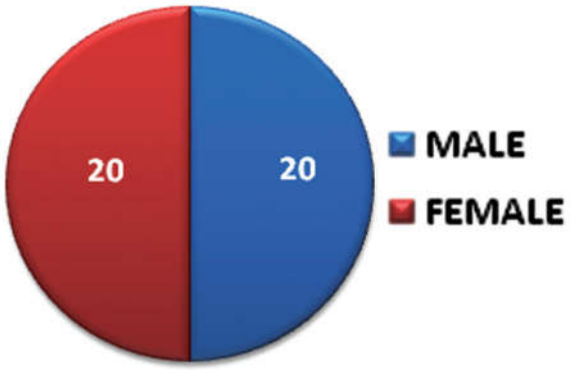

Fig. : Incidence of Hydatid disease in Male and Female is 1:1. Maingot et al[14] has not observed any sex predominance in incidence of hydatid disease.

Address

Address	No of Patients (N=40)	Pecentage
Rural	27	67.5%
Urban	13	32.5%

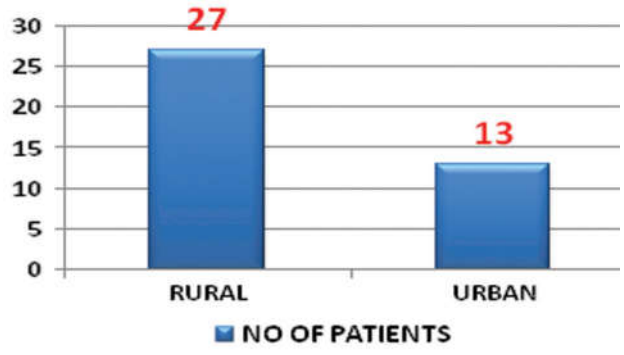

Fig. : In our study patients residing in rural areas are most affected with hydatid cyst (67.5%) compared to the patients residing in the urban areas.

Occupation

Occupation	No of Cases (N=40)	Percentage
Labourers	7	17.5%
Housewives	5	12.5%
Agriculturist	25	62.5%
Others	3	7.5%

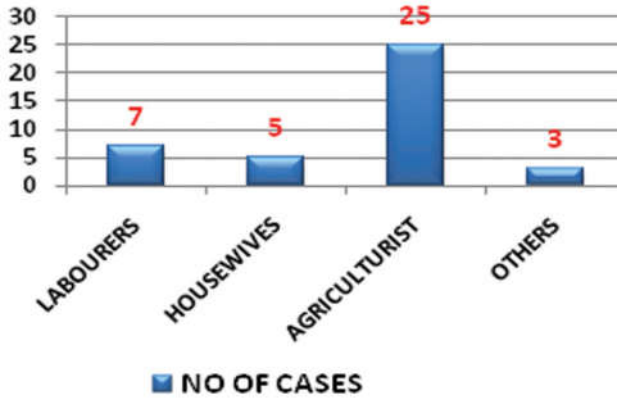

Fig. : Occupation

Most of the patients in our study were from low socioecomic status group which included Agriculturist, labourers, housewives, etc. Agriculturist was the most common occupation among our patients (62.5%) followed by labourers (17.5%).

Table : Presenting Symptoms of Patients.

	No. of Patients (N=40)	Percent
Pain in abdomen	39	97.5
Mass	30	75
Jaundice	02	5
Fever	5	12.5
Breathlessness	5	12.5
Cough	5	12.5
Dyspepsia	13	36.1
Vomiting	9	22.5
Urinary / bowel complaints	1	2.5

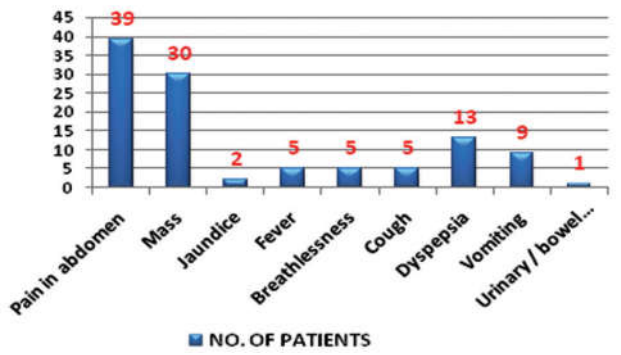

Fig. : In our study as seen above, most common presenting symptom is pain in abdomen (97.5%) and second most common complaint is mass in abdomen (75%).

Clinical Examination

	No. of Patients (N=40)	Percent
Lump	30	75
Tenderness	04	10
Hydatid thrill	02	05

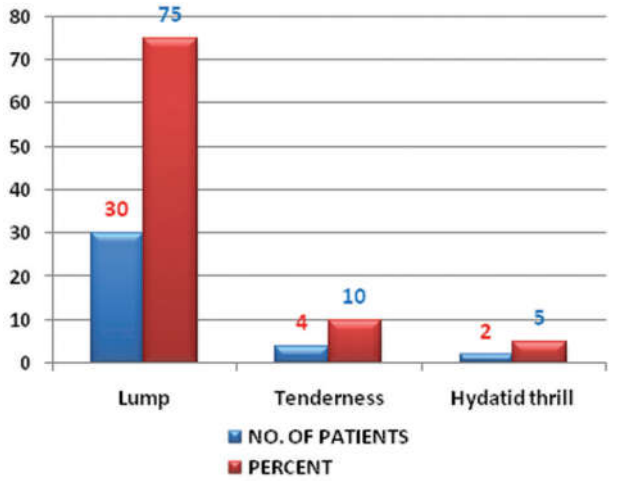

Fig. : In our study out of 40 patients, 30 patients on clinical examination had findings of abdominal mass (75%). So, abdominal mass is the most common clinical finding in our study.

Table : Incidence of Hydatid Cysts in Different Sites.

Sites	No of Cases (N=40)	Percentage
Solitary Liver	33	82.5%
Solitary Peritoneum And Pelvis	3	7.5%
Spleen	2	5%
Liver + Peritoneum	2	5%

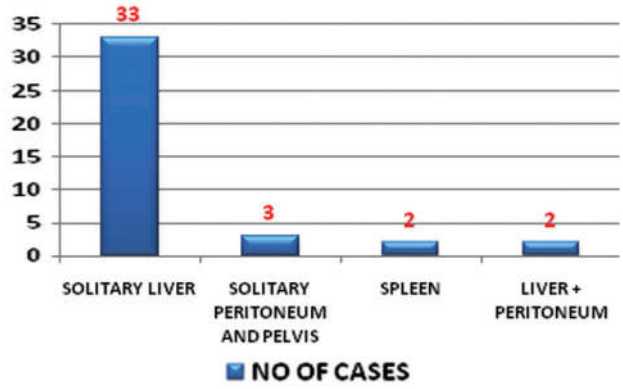

Fig. : Site Involved.

Liver is the most commonly affected organ: 35 cases (87.5%) followed by solitary peritoneal hydatid cyst: 3 cases (7.5%) and splenic hydatid disease: 2 cases (5%). In addition to the above mentioned percentage of peritoneal hydatid cyst, they were also present in cases in addition to liver hydatid disease in 2 other cases. So in all peritoneal and pelvic hydatid cyst was present in 5 cases.

Table : Site of Involvement Liver Hydatid Cyst.

Lobe of Liver	Number of Cases (N=35)	Percentage
Left	7	20%
Right	23	65.7%
Both	5	14.3%

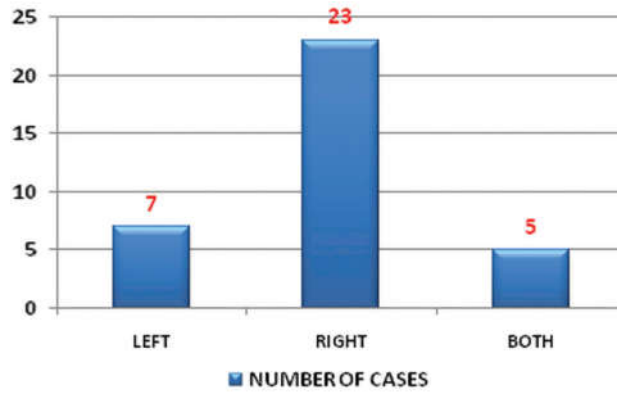

Fig. : Lobe of liver involved.

As seen in present series right lobe of the liver is commonly involved in 65.7% of the cases. This finding is concordant with the worldwide data showing right lobe involved in 70% of the cases.

Maingot[14] has also observed more involvement of right lobe (80%) as compared to left lobe (20%).

Ultrasonography Findinigs of Liver Cyst

In 40 patients, 68 hydatid cysts were encountered. Out of which 63 cysts were present in liver and they were imaged using trans abdominal ultrasound and classified as described by Gharbi which is specific for liver hydatid disease.

Gharbi Type	Number of Cysts (N=63)	Percentage
I	21	33.3%
II	27	42.8%
III	12	19.1%
IV	3	4.8%

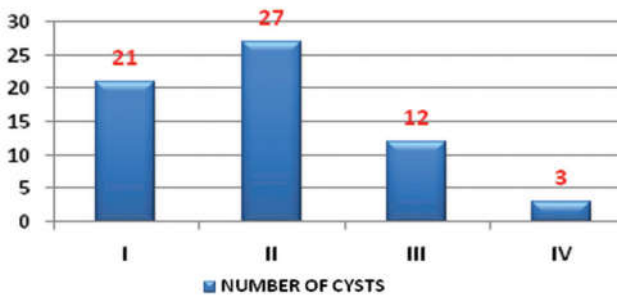

Fig. : Gharbi Classification.

In our study out of 40 cases, total 68 hydatid cysts were present and out which 63 were present in liver which were classified according to Gharbhi Classification. Out of this 63 cysts, most of them are of Gharbhi type 2 (42.8%) and next most common type is Gharbhi type 1 (33.3%).

Treatment Given For Liver Hydatid Disease

Treatment Given	No. of Patients (N=35)	Percentage
Surgical	33	94.3%
Medical	2	5.7%

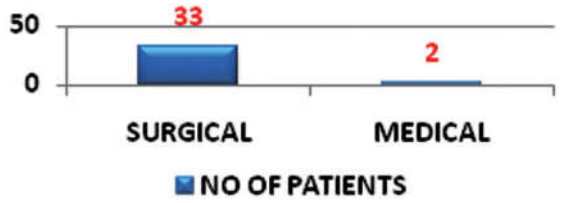

Fig. : Treatment given for liver hydatid disease.

In our study out of 40 patients, 35 patients were having liver hydatid disease out of which, only 2 patients (5%) were treated conservatively by giving medical treatment with Albendazole. Rest of the patients 38 (95%) were treated surgically. Liver hydatid cyst which were smaller in size i.e < 5 cm were treated conservatively and were called for regular follow up.

Intra-Operative Findings

Intraoperative Findings	Number of Cases (N=38)	Percentage
Unilocular	10	26.3%
Multilocular	28	73.7%
Daughter Cysts	35	92.1%
Cystobiliary Communications	1	2.6%

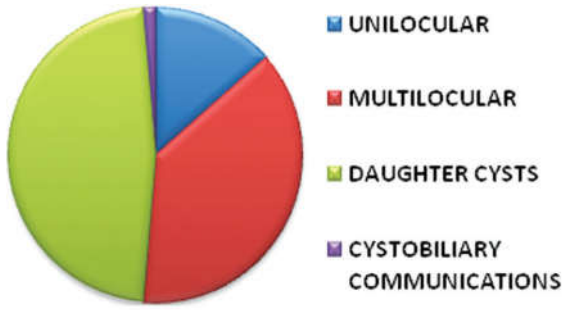

Fig. : Intraoperative findings.

In our study intraoperative findings mostly correlate with the CECT findings except for cystobiliary communication which was seen intraoperatively in 3 cases in comparision to the CECT finding in which only in 1 case cystobiliary communication was seen. This shows that cystobiliary communication has be seen intraoperatively before closure or packing of the cyst with omentum.

Discussion

The present case series clearly shows that hydatid disease is common in Saurashtra region due to cattle rearing and farming as occupation. It is commonly seen in lower socioeconomic strata due to poor hygiene and sanitation.

1. In this series incidence of hydatid disease is commonly seen in 20- 40 years of age group with 67.5% incidence. This finding is concordant with the study done by Papadimitriou and Mandrekas4 which had 59%, Sharma and Egglestone5 which had 57.3%, incidence in this age group.

Most common age group	Present study	Papadimitriou and Mandrekas[4]	Sharma and Egglestone[5]	R.B.Mehta et al[6]
20-40years	67.5%	59%	57.3%	45.9%

So from above it can be said that the most common age group incoved in between 20-40 years.

2. Male and female incidence is 1:1 in this study. As described by Maingot et al7 has not observed any sex predominance suggesting that sex incidence is merely a reflection of variation of epidemiological factors which were prevalent at different areas in different manners. In R.B.Mehta et al6 study out of 48 cases, females accounted for 43.7% and males constituted 56.3%.

	Present Study	Maingot ET AL[7]	R.B.Mehta ET AL[6]
Male	50%	50%	56.3%
Female	50%	50%	43.7%

3. In our study most of the patients were from low socioecomic status group which included agriculturist, labourers, housewives, etc. Agriculturist was the most common occupation among our patients (62.5%) followed by labourers (17.5%). G.H.Upadhyaya et al10 also reported their study that most patients with hydatid disease were labourers with low socioecomic status. E. Muniswamy et al11 reported that 76.7% patients affected with hydatid disease were Agriculturist. Thus occupation like agriculturist and low socioecomomic status where exposure to animals and poor personal

hygiene practice is common are also risk factors to the disease.

4. In our study patients residing in rural areas are most affected with hydatid cyst (67.5%) compared to the patients residing in the urban areas. This is in comparison to study performed by Engida Abebe et al[12] in which out of total 42 patients with intraabdominal hydatid cysts, 26 (62%) were residing in urban areas and 16 (38%) were residing in rural areas. This shows that this disease is more common in rural area residing population.

Address	Present Study	Engida Abebe Et Al[12]
Rural	67.5%	38%
Urban	32.5%	62%

5. Abdominal pain is most commonly presenting symptom seen in 97.5% of the cases, followed by symptoms of mass in abdomen (75%), dyspepsia (36.1%), vomiting (22.5%), fever (12.5%) and jaundice (5%). This shows that abdominal pain is the most common presenting complaint. Langer et al13 and Hagos biluts et al14 also reported abdominal pain as the most common complaint followed by fever and jaundice. In the study by R.V.S Yadav et al15, 85.7 % patients had mass and 61.4% had pain in abdomen. Whereas, in study by Ahmed A et al16, pain was the most common symptom in 74% followed by mass in 53%. The most probable explanation is that growth of hydatid cyst within liver causes stretching of capsule which is manifested by pain.

	Present Study	R.V.S Yadav ET AL[15]	Ahmed A ET AL[16]
Abdominal Pain	97.5%	61.4%	74%
Mass	75%	85.7%	53%

6. In this study lump in abdomen is the most common finding seen in 75% of cases. Firm, smooth surface lump associated movement with respiration was found. Langer et al[13] reported lump in abdomen in 59% of cases and Hagos Biluts et al16 reported lump in 72% of cases. This can be attributed to the early presentation to the hospital.

	Present Study	Langer ET AL[13]	Hagos Biluts ET AL[14]
Lump	75%	59%	72%

7. Tenderness is present in 10% of our cases.
8. In this study ultrasonography and CT Scan is 92% specific. And X- ray abdomen showed elevation of dome of diaphragm in 25% cases.
9. In our study out of 40 cases, Liver is the most commonly affected organ: 37 cases (87.5%) followed by peritoneal involvement in 7.5% and spleen: 2 cases (5%). Our statistics are comparable to R.B.Mehta et al6 study which also revealed that liver is the major organ involved in the hydatid disease accounting for 54.2%.

Organ involved	Present study	R.B.Mehta et al[6]
Liver	87.5%	54.2%
Peritoneum	7.5%	10.4%
Spleen	5%	4.2%
Kidney	-	2.1%
Ovary	-	4.2%
Retroperitoneum	-	10.4%

10. In our study out of 40 cases, total 68 hydatid cysts were present and out which 63 were present in liver which were classified according to GHARBHI Classification. Out of this 63 cysts, most of them are of GHARBHI type 2 (42.8%) and next most common type is GHARBHI type 1 (33.3%)
11. Our study shows right lobe involvement in 65.7% cases. Left lobe involvement in 20% and both lobe involved in 14.3% cases. In Mergen H et al17 study, right lobe involvement was seen in 65% of cases, left lobe in 13% and both lobes in 8%. Maingot7 has also observed more involvement of right lobe (80%) as compared to left lobe (20%). In the study by Ankit Kayal et al18 also reported 78.5% involvement of the right lobe, left lobe involvement in 7% and both lobes were involved in 14.5%. This shows that right lobe is most commonly affected lobe in liver hydatid cyst.

	Present Study	Mergen H Et Al[17]	Maingot[7]	Ankit Kayal Et Al[18]
Right	65.7%	65%	80%	78.5%
Left	20%	13%	20%	7%
Both	14.3%	8%	-	14.5%

12. In our study out of the 40 cases on CECT abdomen, 10 cysts were unilocular (25%), and 34 cysts were multilocular (75%). Daughter cysts were present in 36 cases out of the 40 cases (90%). Cystobiliary communication was seen only in 1 case (2.5%). These shows that multilocular cyst with daughter cyst are more common than unilocular cysts in our study.

13. Medical treatment in form of albendazole is given to all 40 patients preoperatively. Tekin A & others19 study consider that regardless of the surgical treatment used in liver hydatid cyst cases, combination with chemotherapy is the safest and most effective approach. In our study out of 40 patients,35 patients were having liver hydatid disease out of which, only 2 patients (5%) were treated conservatively by giving medical treatment with Albendazole. Rest of the patients 38 (95%) were treated surgically. Liver hydatid cyst which were smaller in size i.e < 5 cm were treated conservatively and were called for regular followup.
14. In our study, out of the total 40 cases, 35 cases were having liver hydatid disease. Out of which 33 were operated surgically and 2 were treated conservatively with Albendazole. Out of 33 which were treated surgically, 32 were treated with open approach and 1 was treated laparoscopically which was situated in the left lobe.
15. In our study out of total 35 cases of liver hydatid cyst, 2 were treated conservatively with medical management i.e. Albendazole and rest of the 33 cases was treated surgically out of which 32 were treated with open surgical technique and 1 was treated laparoscpically. In open surgical management most commonly performed was decompression of cyst with deroofing and cyst excision followed by omentoplasty (96.9%). In our study pericystectomy was done in 1 patient (3.1%).The study by R.V.S Yadav et al15 shows 36.7% underwent external drainage and only 1.7% underwent omentoplasty and pericystectomy was done in 31.7%. On comparison of our study with the above mentioned studies, decompression of cyst with external drainage was the commonest procedure adopted to deal with hydatid disease.

	Present study	R.V.S Yadav et al[15]
Decompression of cyst with deroofing and cyst excision followed by omentoplasty.	96.9%	1.7%
Deroofing with external drainage	-	36.7%
Pericystectomy	3.1%	31.7%

16. Three patients had complex heterogenous cyst (GHARBI TYPE 4), we went for a radical approach namely pericystectomy in this patient.
17. In this series there are no intra operative complication encountered. No incidence of anaphylaxis due to spillage or injury to biliary system or any vessels.
18. In our study intraoperative findings mostly correlate with the CECT findings except for cystobiliary communication which was seen intraoperatively in 3 cases in comparision to the CECT finding in which only in 1 case cystobiliary communication was seen. This shows that cystobiliary communication has be seen intraoperatively before closure or packing of the cyst with omentum.
19. Out of the total 38 patients operated, 6 patients had postoperative complication, of which 5 patients (14.28%) of patients had wound infection and 1 (2.8%) of the patients had biliary fistula. Patient with wound infection and biliary fistula was treated conservatively and discharged.
20. Minimum duration of stay in hospital post operatively was between 5-10 days (71.1%). Only those cases with post operative complication like wound infection and biliary fistula stayed for a longer time i.e >10cm.
21. In our study all patients which came for follow up had no any complaints of abdominal pain or mass during this follow up period. Follow up was carried out using meticulous clinical examination, USG for Abdomen and other relevant investigations. No any patients in the follow up period had any recurrence. All patients completed their chemotherapy.
22. In our study out of 40 cases, there were 35 cases with liver hydatid cyst and out of these 33 were operated and 2 were treated conservatively. There were regularly followed. On follow up for postoperative patients LFT was done which was normal in all patients. On USG, 32 patients who underwent deroofing with omentoplasty / capitonnage had empty cyst/ post operative cyst cavity and the patient who underwent pericystectomy had no any residual cavity. The patient treated conservatively had similar size on USG. There were no any recurrence in the patients followed up.
23. In our study, out of 40 cases, 3 had solitary hydatid cyst and 2 had hydatid cyst in relation to liver hydatid cyst. All were excised. On postoperative follow up patients LFT were normal, Usg was normal i.e no any residual cavity and there was no any recurrence.
24. In our study out of 40 cases, 2 patients had

splenic hydatid cyst and both underwent splenectomy. Postoperatively both of them had normal investigations with USG suggestive of no any residual cyst with absent spleen and there was no any recurrence.

Conclusion

Hydatid disease is common in Saurashtra and Kutch regions of Gujarat & other states of India. They have a diverse clinical spectrum from being asymptomatic to symptoms arising due to involvement of surrounding structures or dissemination or secondary infection.

All cases of hydatid cyst infestation of this study were admitted in between May 2019 to April 2020. Study shows that hydatid disease infestation is common in Saurashtra region, as cattle rearing and farming are the main occupations. Lower socio-economic class is usually involved.

1. Patients mostly present at the age group of 20-40 years.
2. Sex distribution is equal.
3. Occupation like agriculturist, residing in rural areas and low socioecomomic status are considered to be risk factor for hydatid disease.
4. Most commonly involved organ was liver followed by peritoneal involvement followed by spleen.
5. Most common presentation was of upper abdominal pain followed by mass in the abdomen.
6. Clinically, the most common sign was palpable lump of long duration.
7. Most common imaging modality was ultrasonography and CT scan, which were 100% sensitive and 92% specific.
8. Gharbi type 2 cysts are common.
9. Most common lobe involved was right lobe.
10. Albendazole was given pre-operatively to all patients for minimum of 1 week.
11. Most common treatment modality is surgical with medical management only reserved for small cysts.
12. Decompression of cyst with deroofing and omentoplasty/ capitonnage was the commonest procedure adopted to deal with hydatid disease.
13. There were no intra-operative complications.
14. Most of the patients were discharged between 5-10 days.
15. In 3 month follow up period, none of the patients had complaints or recurrence was found in any.

A strong suspicion of hydatid cyst is warranted for upper abdominal symptoms especially in endemic areas. There is no direct evidence of contact with cattle, sheep and dogs, however possibility of contact in early childhood cannot be ruled out.

Hydatid disease is controlled by preventing transmission of the parasite. Prevention measures include limiting the areas where dogs are allowed and preventing animals from consuming meat infected with cysts of infected sheep and infected carcasses. Controlling stray dog populations, restricting home slaughter of sheep and other livestock, prevention of consumption of any food or water that may have been contaminated by fecal matter from dogs, washing hands with soap and warm water after handling dogs, and before handling food and teaching children the importance of washing hands to prevent infection help a long way in prevention of this disease.

Early treatment is mandatory to avoid local and general complications which are directly related to duration of cyst, and aim of treatment should be complete removal of parasite without any spillage during operation and unnecessary damage to host tissues. Recent advances in the treatment of Hydatid disease include a recently popularized method of Puncture, Aspiration, and Instillation of scolicidal agent and Reaspiration (PAIR). It is minimally invasive, cost-effective, involves lesser hospital stay and has less morbidity and mortality than Surgery.

Laparoscopic removal of hyadtid cysts has been also done and the method is highly effective then open approach in terms of post operative morbidity, hospital stay and outcomes and lesser complication rates.

Hydatid disease still is an emerging problem and is a course of challenge to all the medical practitioners. It is waging a war, with its roots spread deeply in society. Due to its non-specific clinical presentation and lack of awareness regarding the parasite in society it is being overlooked very commonly. Thus, it is necessary to formulate an accurate pathway of approach for the diagnosis, management and prevention of the disease.

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