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SURVEY OF HYDATID DISEASE IN A TERTIARY HOSPITAL, JHARKHAND

Surgery

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ABSTRACT

Results of a retrospective study of 230 cases of hydatid disease in Jharkhand. This disease is very common nowadays in our region. The most frequent cause of hydatid disease in humans is E. granulosus. Diagnosis was more often on history, suspicion basis, and clinical presentation, which is supported by recent investigations. In our study pain abdomen and abdominal lumps are the two most common complaints of patients with hydatid cysts. The most commonly involved organ was the liver in general and the right lobe of the liver in particular. For diagnosis of hydatid disease ultrasonography is still gold standard of investigation. Complete removal of the cyst is the best treatment available. Mebendazole and Albendazole also play a role in early cases.

KEYWORDS

Hydatid cyst; E. granulosus; DEMO; Hydatidosis.

INTRODUCTION

Hydatid disease is widely prevalent in the Indian subcontinent. It is caused by an infestation by the larval stage of tapeworm *Echinococcus* sp. But the most frequent cause of hydatid disease in humans is *E. granulosus* that causes hydatid cyst (HC), while *E. multilocularis* causes alveolar hydatid disease. In India, the disease is very frequent in many states like Tamil Nadu, Andhra Pradesh, Jharkhand, Gujarat, Bihar, Maharashtra, Himachal Pradesh, Punjab, etc. Due to the widespread prevalence of pig farming in our area, nowadays it is very common. The liver is the most commonly involved organ followed by the lungs.

MATERIAL AND METHODS

In our study, we reviewed the records of 244 cases of hydatidosis in our premier Medical College of Jharkhand, Rajendra Institute of Medical Sciences (RIMS), Ranchi at the Surgery Department of Medical College from the period 2005-2019. Our hospital is a tertiary level referral hospital that is situated at a hydatid endemic area due to pig farming around the state. For diagnosis, we relied upon history, clinical examinations, radiological and serological investigations. This review was conducted with the records of all the operated cases at our department during the said period. We utilised nurse's admission register, operation theater logbook and discharge papers to identify our group of patients. We took all sociodemographic data, mode of admission, parts involved in the disease, type of radiological imaging, type of operative procedures, and the final outcome of patients collected.

RESULT

In our study, except for 7 cases which were due to *Echinococcus multilocularis*, rest all 237 were *Echinococcus granulosus*. The majority of cases were between the third to the fifth decade (60%) with male predominance of 61 percent. (Table-1).

Table 1: Age And Sex Distribution

AgeinYears	Males	Female	Total
0-10	3	1	4
11-20	11	6	17
21-30	18	15	33
31-40	55	38	93(38%)
41-50	30	24	54(22%)
51-60	12	7	19
>60	20	4	24
Total	149(61%)	95(39%)	244

Table-2: Site Distribution

Organ/Sites	Numberofcases
Liver	177(72.5%)
Lugs	10
Spleen	6
Kidney	5
Mesentery	6
Retroperitoneal	4
Breast	2
Subcutaneoustissue	3
Muscles	6
MultipleSitesintheAbdomen	25

The liver was the most common organ (almost 72.5 percent) involved (table-2) other sites involved were in frequency are lungs, spleen, kidney, mesentery, muscles, and multiple sites in the abdomen.

Table-3: Mode Of Presentation

Signand/orsymptoms	Numberofcases
Lumpwith/tenderness	46
Lumpwithout/tenderness	135
Painabdomen	88
Nauseaandvomiting	30
Fever	34
Cough	14
Hemoptysis	3
Chestpain	5
Jaundice	11
Urticaria	32
Haematuria	4
Hydatidurea	2
Chronicpainabdomen	42
Ascites	5
Anaphylacticreaction	2
Asymptomatic	38

Presentation of the disease has a wide variety of symptomatology and clinical signs. (table-3), Most common presentation was pain abdomen followed by an intra-abdominal lump (74% of cases), Nausea and vomiting was the 3rd common symptom, next was fever. Most of our admission were from routine OPD basis except 7 cases. We admitted 7 cases from our emergency, 5 cases were with severe pain abdomen due to secondary infection and intraperitoneal rupture with the sign of peritonitis and two had anaphylactic reactions.

Eleven liver cases also present which jaundice among these four people also presented with fever, may be due to cholangitis or other infection. Almost all the pulmonary hydatid and four of hepatic hydatidosis cases presented with chronic cough. Two cases of retroperitoneal hydatid presented with right iliac fossa pain mimicking appendicitis. Four cases of renal involvement developed hematuria and two cases also presented with passing of small pearls like hydatid cyst in urine (hydatidurea). Patients presented with urticaria in 32 cases, Ascites and anaphylaxis were mode of presentation in 5 and 2 cases respectively. Ultrasonography has positive results in most of them so was diagnosis of choice but in cases of multiple site involvement or multiple organ involvements,

we perform preoperative CT scan to confirm the diagnosis.

As we are still lacking an absolute effective scolicidal drug and chances of recurrence are still very high, the treatment modalities for most of these hydatid diseases is complete removal of hydatid cysts by surgery. The management of simple cysts is entirely for its symptoms or complications. Minimally invasive treatment option for management of symptomatic hydatid disease is also available if one has good expertise. Percutaneous aspiration as treatment option is available sometimes but chances of anaphylaxis is high and results of simple aspiration are also associated with very high recurrence rates.

Table-4 is list of the operative procedures that were undertaken in various cases. Liver was the primary site involved with the right lobe being the main lobe (75%). 177 patients (72.5%) underwent deroofing with enucleation, marsupialization, Laparoscopic aspiration and evacuation, cystectomy and omentoplasty.

Table-4: Site Distribution And Surgeries

Organ/Sites	Number of cases	Procedure
Liver	80	Deroofing with enucleation
	18	Laparoscopic aspiration and evacuation
	51	Marsupialization
	28	Cystectomy and omentoplasty
Lungs	5	Thoracotomy and excision of cyst
	3	VATS aspiration and evacuation
	2	Referred to CTVS
Kidney	3	Complete excision of cyst
	2	Unilateral nephrectomy
Spleen	5	Required splenectomy
	1	Deroofing (hanging edge)
Mesentery	6	Complete excision
Retroperitoneal	4	Complete excision
Breast	2	Complete excision with margin of breast
Sub cutaneous tissue	3	Complete excision
Muscles	6	Complete excision
Multiple Sites in the Abdomen	25	Remov al of most of bigger cyst + post-op long term albendazole

Ruptured liver hydatid into peritoneum cavity in three cases. 12 patients had superinfected cysts with frank pus in the cyst cavity. Most remarkable was moderate to severe adhesions between the cyst and the surrounding abdominal structures in most of the cases noted.

Eighty patients underwent deroofing with enucleation of the cyst wall, eighteen had laparoscopic aspiration and evacuation of cyst wall contents, fifty-one cases dealt with Marsupialization of cyst wall edges and twenty-eight cases operated by cystectomy and omentoplasty means obliteration of the cavity by placing omentum (DEMO)

In our series two of the patients had perioperative anaphylaxis that managed well by anaesthesia team but none had any bleeding or other intraoperative complications.

Postoperative complications occurred mainly in hepatic cases. Most common postoperative complications was surgical site infection in 9 cases. Next common compilation was the cyst had communication with the biliary channels in seven patients with bile coming out through the drain. Bile leaks stopped with follow-up with a drainage tube. Other post-op complication was persistent sinus formation for more than one month in 4 cases that improved gradually.

Postoperatively, we prescribed our patients albendazole 400 mg oral twice daily for 2 months to all liver cases, with multiple site involvement and in cases of lung involvement. No patient had any mortality.

DISCUSSION

In our study we observed that liver was the commonest followers by lung then multiple site involvements in hydatid disease in our area of Jharkhand. Most of patients were from Ranchi and around that is sub-urban area.[1]

In one series, Bilutse et al. also observed that 60% of their patients with hydatid cyst of the liver were from urban settings.[2]

As observed in most of the works, abdominal pain, especially right upper quadrant pain, was the main presenting complaint in our study.[3,4]

Our study suggested a statistically significant male dominance for hydatid unlike many other studies for example Tehran studies where females made up 58% of the patients.[5]

In our report the maximum patients (38%) were between 31 to 40 years. That was consistent with many studies like that from Iran and Morocco found a mean age of 40 years and 39.5 years, respectively.[5,6]

Ultrasound study is still the gold standard for preoperative diagnosis and defining the size, site, and nature of the cyst. The sensitivity and specificity of the US in detecting hydatid cyst is very good.[7,8]. But in many cases, we also tried CT scan to define the site and extent of the disease.

Sudden coughing attacks, haemoptysis, and chest pain are the most common clinical symptoms in pulmonary hydatid disease.[9,10,11]

The involvement of the liver in general and the right lobe of the liver in particular as the most common site involved in intra-abdominal hydatid in our study was again consistent with the literature.[5,12]. Liver is the most commonly involved because it is the first organ which takes parasite infested portal venous blood.

Many studies suggested that in the abdomen, after the liver, the spleen and the kidney to be the two most common intra-abdominal organs involved.[3,14]

The treatment options for hydatid cysts ranges from simple cyst drainage or evacuation to resection of the whole or part of the involved organ.[2,15] The main surgical procedure for liver hydatid cyst in our study was DEMO. Resection of organs required in spleen-renal cases.

CONCLUSION

In our study pain abdomen and abdominal lumps are the two most common complaints of patients with hydatid cysts. The most commonly involved organ was the liver in general and the right lobe of the liver in particular. Abdominal ultrasound is a gold standard, noninvasive and cheap imaging technique for the suspected cases of hydatid disease. DEMO is the main surgical procedure with maximum cure and minimum mortality and morbidity. Post operative scolicidal drugs like albendazole are required to prevent recurrence.

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