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A Comprehensive Prospective Clinical Study of Hydatid Disease: A Case Study of Kota (Rajasthan)

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ABSTRACT

Hydatid disease has a worldwide distribution and is also well recognized and documented in India. The present study has been done on 50 patients suffering from hydatid disease of various sites and treated during Jan 2014 to Jan 2015 at Government Medical College and Associated Group of Hospitals, Kota, with the aim of studying the clinical manifestations of hydatid disease of different sites and/or organ system and of analyzing the morbidity and mortality of hydatid disease. The age, sex, h/o dog contact, duration of hospital stay, clinical presentation, treatment advised, findings and difficulties encountered during operation, and postoperative management of patients as well as morbidity and mortality were recorded and analyzed. We observed that the mean age was 32 years. The sex incidence revealed female preponderance in the study (M:F/1:3). Females were the dominant sex affected by the disease. Hydatid of the liver was more common, especially in the right lobe. Pain in the abdomen was the most common presenting complaint. Lump in the abdomen was the most common clinical finding. Patients with pulmonary hydatid presented to the hospital earlier than the patients with abdominal hydatid. excision and external drainage was the most commonly performed surgery. The most common postoperative complication was wound infection. Majority of patients were from rural areas (47) and the remaining (3) from urban areas. Pain was most common symptom.

Keywords:Clinical Study, Hydatid Disease

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INTRODUCTION

Hydatid disease is a well-known disease since age. It was known to Hippocrates who speaks of liver full of water. It remains a major public health problem all over the word especially endemic in the Mediterranean countries (particularly Greece), the Middle East, the Baltic areas, South America, India, northern China, and other sheep-raising areas; however, owing to increased travel and tourism all over the world, it can be found anywhere, even in developed countries [1]. In India, hydatid disease is common in most of the states of which Andhra Pradesh and Tamil Nadu predominate [2]. The liver is the most common site for hydatid disease (75% of cases), followed by lungs (15%), spleen (5%), and other organs (5%) [3].The diagnosis of hydatid disease is based on epidemiological background of patients, clinical grounds, or noninvasive screening procedures. Chest and abdominal X-ray, ultrasonography, and CT scan should identify cysts characteristics and the diagnosis is confirmed by detecting specific antibodies (immunodiagnostic test). Intradermal Casoni test, the human basophil degradation test, and the complement fixation test have only historical relevance [4]. Only albendazole drug is ovicidal, larvicidal, and vermicidal [5]. Surgery is the gold standard in the management of hydatid cyst liver and other sites as well [6]. With this background, we decided to study the presenting symptomatology and various clinical manifestations of hydatid disease of different sites and/or organ system.

MATERIAL AND METHOD

This prospective study was conducted by selection of consecutive 50 cases with hydatid disease in different parts of the body from Government Medical College and Associated Group of Hospitals, Kota, during the period from Jan 2014 to Jan 2016. The data in the study was collected by the use of a pretested proforma to collect relevant information from individual patient after the inclusion and exclusion criteria being applied, by a meticulous clinical examination and using relevant investigation needed for diagnosis were carried out. Patients were then taken for surgery. Patients were followed up for a minimum of 6 months after the required and optimum treatment was delivered to them.

RESULTS AND DISCUSSION

Our patients ranged between 11 years to 70 years. The most common age group belonged to the 21-30 years group. Majority of the patients belonged to second and third decade of life. The mean age was 32 years. The sex distribution showed female preponderance in the study (M: F: 1: 3). Majority of patients were from rural

areas (47) and remaining (3) were from urban areas. Among the patients of rural areas, 22 patients were farmers, 12 housewives, 7 labourers, and six students. Out of 3 urban areas patients, 2 were housewives and one was student. History of contact with dogs or sheep was present in 17 cases(34%) and absent in 33 patients (66%). Liver is the most commonly affected organ: 38cases (76%) followed by lungs (6%), peritoneum with liver (6%). Spleen, Mesentery, omentum, spleen with peritoneum and muscle involvement was present in one (2%) patient for each.

In liver hydatid, Abdominal pain was the commonest mode of presentation 27 cases (71.05%) followed by abdominal mass 7 cases. Patient with lung hydatid presented with cough and chest pain. Differential leucocyte count was performed in all patients. Eosinophilia was present in 22 patients out of 50 patients.

Table: 1 common symptoms of hydatid cysts

Sl No	Site/organ	Symptom	Number of cases
1	Liver	Pain- abdomen	27
		Lump –abdomen	7
		Pruritis	4
		Fever	6
		Jaundice	1
2	Lung	Cough with Chest pain	3
3	Spleen	Splenomegaly	1
5	Tissue and muscle	Cystic swelling	1
6	Mesentery	Lump-abdomen	1
7	Omentum	Lump-abdomen	1
8	Spleen with peritoneum	Lump-abdomen	1

Intact pulmonary cysts were seen as rounded homogenous and spherical shadows in a chest film. Most of the cysts in liver were present in the right lobe that too on its inferior surface and more than one cyst in liver was present in 7 cases. In 4 cases, liver was conjointly involved with other viscera. Solitary pulmonary cysts were present in all 3 cases and all were in left side.

22 patients underwent excision or enucleation with external tube drainage. Omentoplasty was done in 11 cases. Marsupialisation was done in 5 cases. All hydatid cyst lungs treated by enucleation with external tube drainage. All other sites hydatid cyst were treated mostly with excision and tube drainage.Also by excision of cyst. Postoperative complications were wound sepsis (3 cases) and biliary fistula (1 case), all of which were prolonged the hospital stay up to 20 days and managed conservatively.

Figure 1 : X-ray of lung hydatid

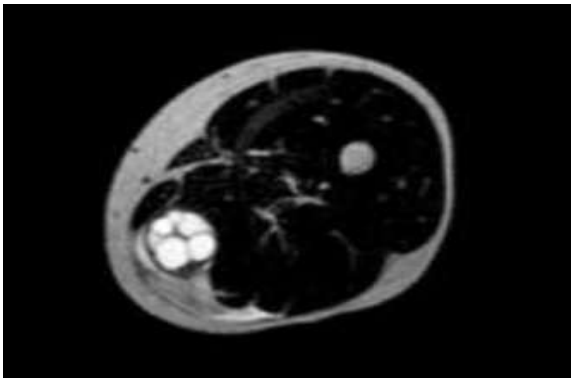

Figure 2: MRI of thigh muscle hydatid cyst

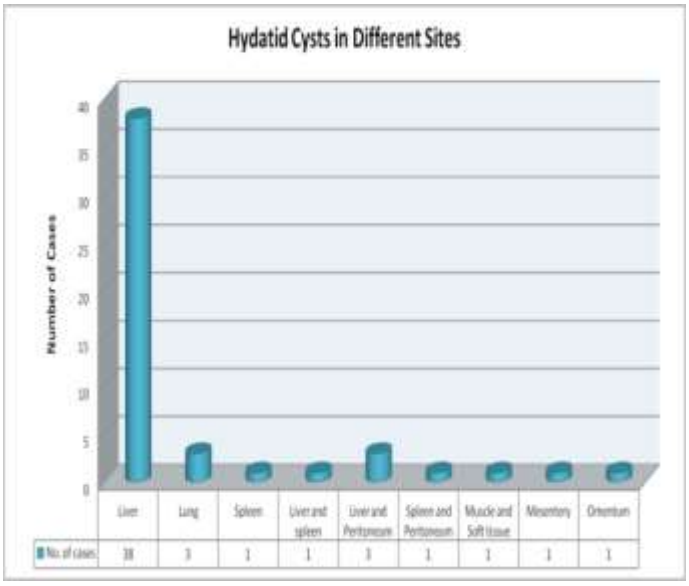

Table 2: Hydatid Cysts in different sites

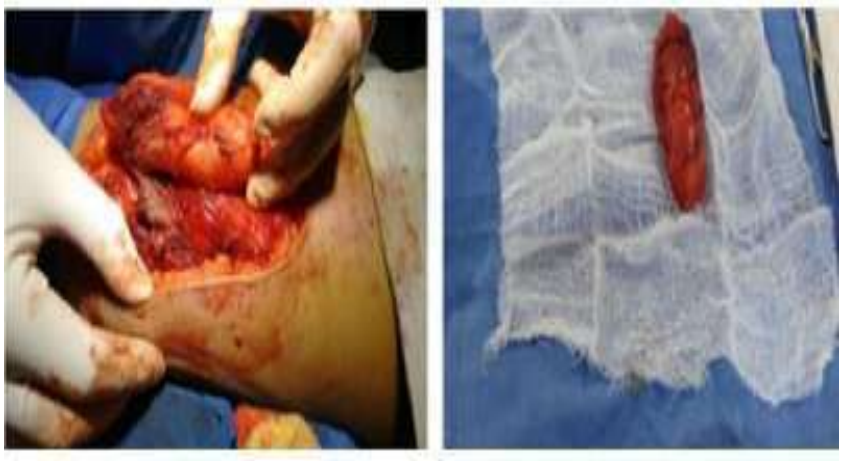

Figure 3:On exploration gross photograph showing a solitary mass within adductor magnus muscle of left thigh with pearly white muscle free wall.

Figure 4: On gross section photograph showing multiple pearly white translucent cysts with gelatinous material

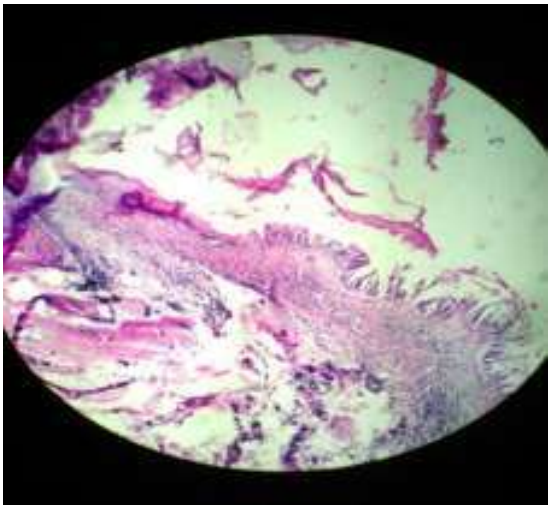

Figure 5: Histological photograph showing conglomerate small vesicles and cysts demarcated by a thin laminated layer with an inner germinative layer.

DISCUSSION:

The our present study is a clinical study of hydatid disease in southern Rajasthan. The foreign literature has emphasized strong connection of hydatid disease with sheep-raising industry and the dogs which act as intermediate and definitive hosts, respectively. In the present study, although most of the patients were from rural areas associated with farming and field work and kept domestic animals including goat and sheep as such none was involved in sheep-raising as an occupation. A history of direct contact with dogs was available in 17 cases; it is thus believed that those patients may have acquired the disease either by transitory handling of dogs or by eating raw vegetables and drinking water contaminated with excreta of an infected dog; a similar view has also been expressed by previous studies [7–10]. Various studies have reported mean age of nearly 40 years which is close to our study mean age 32 years [11–13]. Our study shows sex

incidence of about 1 : 3 (M : F) which is close to Ahmet et al. (1999) and Metin et al. (2002) study but differs from that of Palanivelu et al. (about 5 : 1)and R.B.Mehta et al.

In present study, the incidence of liver disease was higher than pulmonary. Similar observations were made by Krishnamurthy and Dalal et al. [14, 15]. The incidence of liver and lung involvement varied Some studies revealed a higher incidence of lung involvement over liver [16, 17], while Trivedi and Navavaty have reported equal distribution between liver and lungs [18, 19]. The low incidence of pulmonary hydatid disease in the initial reports may be due to lack of facilities of thoracic surgery at that time. In our study, the distribution of liver hydatid was right lobe 25 (65.78%), left lobe 13 (34.21%), Maingot in 2004 also reported involvement of right lobe of liver in about 75% of the cases possibly on account of greater blood supply to right lobe than left lobe of liver. Majority of hepatic hydatid cysts are present on the inferior surface and are clinically palpable; the pathognomonic feature of "hydatid thrill" is rarely manifested [20]. Hepatic cysts are slow growing and usually manifest after achieving sufficient size. In this study, hydatid presented as an upper abdominal pain local examination revealed a tense mass in connection with liver. A left sided cyst tends to extend in front of stomach and colon. In the present study,[22] cases of liver hydatid disease underwent procedures, namely, excision with external tube drainage of endocyst and marsupialization (5) and omentopexy (11). Drainage procedure and marsupialization were associated with wound sepsis and biliary fistula formations, prolonging the postoperative hospital stay up to more than 20 days. Omentopexy and primary closure gave satisfactory results.

Eosinophilia may be seen in approximately 50% of cases but may be present in other parasitic infestations. In this study, eosinophilia was in 22 patients (44%).

In our study, ultrasonography was proved diagnostic in all cases. In the study conducted by Balik et al. (1999), ultrasonography showed diagnostic accuracy of 97.7%. In our study, CECT scan was also done all cases. It was 100% diagnostic. In the study conducted by Balik et al (1999), CECT scan showed diagnostic accuracy of 100% [11]. MRI can be helpful in identifying the rim and differentiating this diagnosis from other encapsulated liver lesions. Irregularities of the rim border, which can be accepted as signs of partial detachment, are more reliably demonstrated with MRI than with CT or US [21]. MRI of muscle was done in one of our cases.

In the lungs, about 60% of cysts are said to occur in right lung predominantly in lower lobes which may be due to scolices being inhaled directly [22], While in our study all 3 cases was in left side which close to Sudarshan et al. reported that more involvement of left lung occurs predominantly in upper lobes than in right lung [9]. All 3 patients of pulmonary hydatid disease in

the present study presented with cough with pain. no patient gave history of expectoration of hydatid material. On chest film, an intact pulmonary hydatid cyst appears as rounded homogenous shadow with well-defined margins.

The incidence of hydatid cyst of spleen varies widely. Three cases of hydatid cyst affecting the spleen were seen in the present study, an incidence of 6%. In one case, isolated splenic hydatid cyst was present and one case of splenic hydatid cyst was associated with liver cyst and in another case splenic hydatid cyst was associated with peritoneum cyst also. Primary hydatid cyst of omentum is very rare one case was present in our study. Omentum is usually secondarily involved following rupture of liver hydatid cyst, Maingot 2004 [20]. Muscle hydatidosis is rare, accounting only for 3–5% of all hydatidosis cases. The most common skeletal muscle sites include the hip and thigh . in our study one case of hydatid cyst of thigh muscle was present , MRI of muscle was done classic MRI findings include a multivesicular cyst, a low-intensity rim ("rim sign") reported . surgical excision was done.

CONCLUSION

The disease affected all age groups; more commonly in young and middle aged group with female predominance. Low socioeconomic status and occupation; mainly agriculture were the contributing risk factors of the disease. Absence of history of contact with pets doesn't rule out the possibility of disease. Liver, lungs, spleen, peritoneum in this descending order were the most commonly involved organs. Pain abdomen was the most common presenting feature in liver hydatid and chest pain with cough in lung hydatid. Diagnostic modality for abdominal and lung hydatid were USG abdomen and CT scan respectively. Majority of liver hydatid were treated by Excision with external tube drainage which is an optimum treatment in our institute. lung hydatid is also managed by excision with tube drainage effectively. Infection and biliary fistula which are the common complications post operatively in liver hydatid was managed expectantly.

No recurrence was observed in the follow up of patients during a period of 6 months and no mortality was documented. Since the study population is small (50 cases) and the study period (2 years) is short, the study has its own limitation in accurate assessment.

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