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Socio – Demographic study of Rupture Hydatid cyst .A clinical study on a sample of Iraqi patients in Al- Muthanna Governorate

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Abstract

Hydatid disease is a common disease in Iraq. Ruptured hydatid cyst is also a common complication and fatal if missed .This study was planned to find the socio – demographic – economic distribution, the most common way of clinical presentation and treatment of patients with this disease and to give idea about better diagnosis and line of treatment.

This study has been carried on 25 patients admitted to Al Hussein Teaching Hospital in Al-Muthanna governorate over a period of 2 years Post operatively the patients were followed for one year.

Keywords: Hydatid cyst, Rupture, Clinical presentation and Postoperative follow-up

Introduction

A hydatid cyst is a parasitic infection caused by the larval stage of the echinococcus granulosus tapeworm, which forms fluid-filled sacs, most commonly in the liver and lung

Humans become infected by ingesting tapeworm eggs from contaminated food, water, or direct contact with animals, like dogs

Cysts are often asymptomatic for years and can cause pain, nausea or chronic cough depending on their location and size. Hydatid disease tend to occur in rural, poor or undeveloped areas

It is especially common among people who raise sheep or other livestock and also have dogs.

Sheep are the primary host of the parasite and dogs get the parasite when eat an infected sheep

Hydatid disease is not contagious, meaning it dose not spread through person-to-person contact. A person has to ingest the parasite to get the infection Hydatid disease is a very common condition in countries around the Mediterranean. (1) It is also very common in Iraq especially in south of Iraq.

The causative tape worm Echinococcus Granulosus is present in the Dog intestine and ova are ingested by human and pass in to portal circulation (blood) to the liver (2).Diagnosis is suggested by the finding of multi-locular cyst on ultrasound (intra peritoneal fluid) CT scan and sometime MRI for intra biliary

rupture (3). Rupture of these hydatid cysts into peritoneal cavity causing an acute abdomen or shock. liver hydatid cyst can also rupture through the diaphragm producing an empyema.in to the biliary tract or duct producing obstructive jaundice (4)

Clinical and radiological diagnosis can be supported by serology for antibodies to hydatid antigen in a form of enzyme linked immune-sorbent assay (ELISA -Test). (5)

Treatment is indicated to prevent or to avoid progression of symptoms and signs and further complications. so urgent surgical treatment is the first choice (6)

No place for medical treatment by Albendazole which may be tried in cold cases and ruptured cases. (7)

Methods

The study was carried upon 25 patients admitted and managed in general surgical ward in Al Husein teaching hospital in Al-Muthana governorate 0ver two years.

The study has been depended on Sociodemographic state of patients with rupture hydatid cyst and clinical presentation and treatment.

Sociodemographic state of patients classified according age, sex, marital state, residence of patients, socioeconomic state, level of education and management which including: history, physical examination, and laboratory investigation and the most important and excellent procedure or tool is ultra sonography.

The ultra sonography was the main step of investigation of rupture hydatid cyst.

All cases were subjected to operative treatment. Cases of intra thoracic (two cases) are referred to special centers, while all other cases operating here.

Operative Technique

General anesthesia with Muscle relaxant was done for all the patients. Right subcostal incision was utilized in eleven case, right upper paramedian incision was used for seven cases.

In type-1 intra peritoneal rupture, it is found that huge amount of fluid intra peritoneally, evacuation of fluid done and search for location of rupture hydatid cyst. All of these cases single unilocular cyst, removal of germinal layer (cyst) and catheter drain lifted inside the cavity of hydatid cyst, lavage by normal saline to peritoneum and tube drain lifted also and antibiotic cover all patients.

In type- IV, which is the most common type and most important and delicate type intra-biliary rupture. First step deal with hydatid if seen, mostly is single multilocular cyst, evacuation of daughter cysts

Exploration of common bile duct (CBD), evacuation of daughter cysts which are small and different size and continuous washing by normal saline and sure about the patency of the duct using dilators or small NG, then T-tube lifted, tube drain also lifted intra peritoneally with an antibiotic covered. 10-14 days post operatively, T-tube cholangiography done. To sure about the patency and passage of dye to intestine. All of them gave excellent and good results. No significant post operative complication only one case had infected wound.

Results

This study showed the number of rupture hydatid cyst in this hospital.

Table (1) Anatomical sites of rupture hydatid cysts

Site of rupture	type	No. of cases	%
Intra peritoneal rupture	I	7	28%
Intra thoracic rupture (pulmonary)	II	7	28%
G.I.T(stomach)	III	1	4%
Intra-biliary rupture	IV	10	40%
total		25	100%

this table reveal that type-IV (intra-biliary rupture) is the most common, and the number of cases are10 (40%), then type-I (intra-peritoneal rupture) (28%), and then type-II (intra thoracic) (28%) also, while the gastro-intestinal tract rupture are the last common in which there is only one case (4%)

Table (2) sex distribution of patients with ruptured hydatid cyst

type	male	female	male:female
I	5	2	5:2
II	6	1	6:1
III	1	0	1:0
IV	9	1	9:1
total	21	4	21:4

This table reveals that the male affected or presented as rupture hydatid cyst more than female the ratio (21:4)

Table (3) Age distribution of patients with ruptured hydatid cyst

type	Age in years	No. of patients
I	1-10	7
II	11-20	7
III	21-30	1
IV	31-50	10

The affected age of rupture different depending on type of rupture. As example, intra-peritoneal rupture (type-I) is more common in younger age (one to ten years) while intra biliary rupture (type-II)is more common in age group between (thirty to fifty) years.

Table (4) Residence distribution of patients with ruptured hydatid cyst

type	No.	%	Rural	%	urban	%
I	7	28%	5	29%	2	25%
II	7	28%	5	29%	2	25%
III	1	4%	0	0	1	13%
IV	10	40%	7	10%	3	37%
total	25	100%	17	68%	8	23%

This study shows rupture hydatid cyst is more common in rural area than patients live in urban area, the ratio (17:8).

Table (5) distribution of patients with ruptured hydatid cyst according to socio-economic status

type	No.	%	low	middle	high
I	7	28%	1	5	1
II	7	28%	3	3	1
III	1	4%	-	1	-
IV	10	40%	4	6	-
total	25	100%	8	15	2

Socio-economic state also shows different numbers in relation to rupture hydatid cyst, this study show middle socio-economic patients are more liable or affected with rupture hydatid cyst. (15) patient are seen in middle class and then low class (8) and very low in high (good) socio-economic state.

Table (6) level of education of the patients with ruptured hydatid cyst

Type	No.	illiterate	Read &write	Primary	secondary
I	7	2	2	3	-
II	7	5	2	-	-
III	1	-	-	-	1
IV	10	7	3	-	-
Total	25	14	7	3	1

Rupture hydatid cyst affected the illiterated levels while decrease in educational levels.

Table (7) marital status of the patients with ruptured hydatid cyst

type	No.	%	married	unmarried
I	7	28%	-	7
II	7	28%	-	7
III	1	4%	-	1
IV	10	4o%	8	2
Total	25		8	17

also in this study the marital state play a role. The number increased in unmarried patients while decreased in the married patients.

Table (8) Ultra-sonic and operative findings of ruptured hydatid cyst

Type	No.	Single cyst	Multiple cysts	Uni-locular cyst	Multi—locular cysts
I	7	5	2	7	0
II	7	7	0	7	0
III	1	1	o	1	0
IV	10	10	0	0	10
Total	25	23	2	15	10

The diagnosis of rupture hydatid cyst is important because the surgical decision depend on it. History and physical examination some time not efficient to take decision of surgery so need special procedures to help us.

Ultrasonography is best tool for diagnosis rupture hydatid cyst.

Also help us in the type of incision and give idea about number and location of the cyst operation.

Table (9) clinical presentation of the patients with ruptured hydatid cyst

type	shock	Abdominal pain	fever	Gastro-intestinal presentation	jaundice	pruritis	Pulmonary complication
I	+	+	+	+	-	-	-
II	-	+	+	+	-	-	+
III	-	+	-	+	-	-	-
IV	-	+	+	+	+	+	-

(+) positive, (-) negative

The clinical presentation different according to type of rupture (site). some patients with type-I presented with shock, abdominal pain and fever. While in type- IV jaundice is prominent sign.

Table (10) causative Agents of ruptured hydatid cyst

type	No.	%	trauma	Spontaneous
I	7	28%	5	2
II	7	28%	-	7
III	1	4%	-	1
IV	10	40%	-	10

This study shoes the cause of rupture from history is important. The causative agent in type-I is trauma and most common in young age group. While in other types no history of trauma only sudden or spontaneously.

Type-II (intra-thoracic) all of them shifted or referred to special center.

Treatment is surgical by laparotomy under general anesthesia.

The incision is either right subcostal or right upper para-median.

The procedure is a depend on the type of rupture (site)

Post operatively just fever in seven cases, two days post operatively. only one has infected wound.

Postoperatively T-tube cholangiography in type-IV show patency and good passage of dye through intestine, jaundice subsided gradually.

Discussion

The most common presenting symptoms and signs of hydatid cyst are upper abdominal pain or palpable mass (D.L. Morris) while rupture hydatid cyst presented with different symptoms and signs according to the location.

Socio-demographic agents play roles in this complication of hydatid cyst. when compare with other countries especially developed countries, it is more common in our country

Intra-biliary rupture of hydatid cyst very common in Al Muthanna city compare with other cities or with other near countries.

Intra-biliary rupture of hydatid cyst found to be the common complications this agree with (kattan) but not agree with study in Al-Rasheed military Hospital (1996) which reveal intra-peritoneal rupture are the most common

Intra-thoracic rupture with co-existent biliary communication is not recorded in this study, while this was recorded by (D.L. Morris 1991) as one of the complications

Type-I (intra-biliary rupture) more commons in younger age because they are more liable for trauma. This type not related to the size because these cysts are small in size.

Type-IV (intra-biliary rupture) mor commons in older age group and these are of big size. so it is size-related and not caused by trauma.

Ultra sound (inexpensive and available) was the main step and it is useful in diagnosis of our cases and can replace CT-scan which is expensive and not available in our locality.

Surgery is the treatment of choice in managing such patients. Techniques differ according to location of rupture. In all types we used right sub-costal incision because it gave good and adequate exposure, except in (type-I) midline or right upper para-median incision was used because of the importance of peritoneal lavage in this type.

It has been found that there is no place for scolicidal agents in operative technique for rupture hydatid cyst. intra thoracic rupture of hepatic through diaphragm not reported in our study.

This study about intra-biliary rupture hydatid cyst in this hospital and in this percentage compared with other cities and even with other countries is rare and seldom.

So this type of difficult and delegated operations is a win

Conclusion

Hydatid disease is common in Iraq and liver is the most common site and rupture is the most common complication

Rupture hydatid cyst most common in male than (female (male to female ratio is 21:4)

Type-I (intra -peritoneal type) is more common in younger age group while type-IV (intra-biliary) more common in older age group Intra-biliary rupture is most common type and location.

Rural area, low socio-economic state and unmarried patients are more liable for rupture.

Availability of ultrasound may be the major tool of diagnosis. No mortality and morbidity among these cases apart of one case complicated by infected wound and treated in proper way.

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