

devoid of septa. C.T scans were indicated in the other 19 cases (61.2 %) to establish the type of liver cyst as it was easier to interpret than ultrasonography. C.T scans identified univesicular hydatid cysts in 13 cases (42 %) , solitary simple liver cysts in 3 (9.7 %) , multiple simple liver cysts in one (3.2 %) , PCLD in one (3.2%) and cystadenoma in one (3.2 %). Univesicular hydatid cysts were diagnosed by the presence of daughter cysts. Two of them (6.5 %) were calcified but with viable scolices. Simple liver cysts appeared as solitary or multiple spherical areas of decreased attenuation (as water). Presence of intracystic septations were diagnostic for cystadenoma.

The most common type of hepatic cyst encountered in our study were hydatid cyst (18;58 %) followed by simple liver cyst.(11/31;35.5 %) . PCLD and cystadenoma were recorded equally in this study (one patient for each) . There was a statistically significant difference in favor of hydatid cyst versus others ($p < 0.05$).

Hydatid cysts (n = 18):

In our study, 72 % (13/18) of cases were located in rural areas in comparison to 28 % (5/18) in urban areas. There was a statistically significant difference between the 2 areas ($p < 0.05$) .Past history of travelling to endemic areas such as Irag & Saudia Arabia was recorded in 22.2 % (4 /18) .The median cyst size was 10 cm (range 6 – 14 cm) . Seventy – nine percent (14/18) were located in the right lobe , 16.6 % (3/18) in the left lobe and bilateral in single patient (5.5 %).This single patient was previously underwent percutaneous fine - needle aspiration and drainage in other center .Calcified cysts with viable scolices were present in 11.1 % (2/18) . Cyst complications such as intraperitoneal and intrabiliary ruptures were not recorded in our study .

Simple liver cysts (n = 11):

The median cyst size was 14 cm (range 7 – 22 cm) , all were diagnosed radiographically except for one case that detected incidentally at the time of other abdominal operation . Cysts were solitary in 91 % (10/11) of cases and multiple in 9% (1/11) . Right lobe was affected in 73 % of cases (8/11), left lobe in 18 % (2/11), and bilateral in 9 % (1/11). Preoperative cyst aspiration guided by ultrasonography was performed 5 times in 28 % of cases (3/11). Those patients experienced only temporary symptomatic relief after cyst aspiration. Recurrent symptoms led to their ultimate surgical intervention.

Polycystic liver disease (PCLD) (n = 1) :

The median cyst size was 10 cm (range 4–16 cm). This female patient had limited number of cysts (> 10) and considered to be type I disease according to Morino *et al.* (14). She had also bilateral renal cysts on preoperative ultrasonic examination. Preoperative cyst aspiration was performed for one time in this patient, with interval symptomatic relief.

Cystadenoma (n = 1) :

This cyst was detected in a perimenopausal women with huge abdominal mass diagnosed clinically as ovarian cyst. ultrasonography and C.T scan revealed the origin of the cyst from the liver with intracystic septations. The size of the cyst was 18 cm (largest diameter) located in the right lobe and superficial.

Surgical Results:

Ninety percent (28/31) of cases underwent open surgery and 10% (3/31) of cases with simple liver cysts were considered for laparoscopic unroofing with mean operative time 55 minutes (range 45 – 70 minutes) and median length of stay 2.5 days (range 1 – 5 days). There were no deaths in our study. Ten percent of cases (3/31) required blood transfusions (two during cystopericystectomy of hydatid cysts and one during removal of cystadenoma). Post operative complication rate was 16 % (5/31). Bile leak and pleural effusion represented equally, 3.2% (one patient for each) after open and laparoscopic unroofing of a simple liver cyst respectively. Bile leak recorded in this patient who was underwent ERCP to exclude biliary communication. There was no statistically significant difference as regard to the postoperative complication rates in all the procedures ($P > 0.05$). It was treated with an endoscopic retrograde biliary stenting procedure. The leak promptly resolved and the patient did well. Pleural effusion was managed conservatively. Subphrenic abscess was recorded in 3.2 % (1/31), after cystopericystectomy of a calcified hydatid cyst. It was drained under C.T scan guidance and resolved without requiring re-operation. Wound dehiscences were recorded in "2 patients" (6.5 %) following conservative excision of hydatid cyst in one case and removal of cystadenoma in another case. Both were healed with secondary intention.

Table (1) shows the clinico-radiological findings in our patients

	Hydatid cysts (n=18)		simple cysts (n=11)		PCL1(n=1)		Cystadenoma (n=1)		Total	
	No	%	No	%	No	%	No	%	No	%
Age										
>14	1	3.2%	1	3.2%	-	-	-	-	2	6.5%
15:45	13	42%	3	9.7%	1	3.2%	-	-	17	54.8%
>45	4	13%	7	23%	-	-	1	3.2%	12	38.7%
Sex										
Female	10	233%	8	29%	1	3.2%	1	3.2%	20	64.5%
Male	8	29%	3	9.7%	-	-	-	-	11	35.5%
Symptoms&signs										
Abdominal pain	13	42%	6	19.3%	-	-	-	-	19	61.3%
Abdominal mass	1	3.2%	3	9.7%	1	3.2%	1	3.2%	6	19.3%
Anorexia & nausea	3	9.7%	1	3.2%	-	-	-	-	4	13%
Weight loss	1	3.2%	-	-	-	-	-	-	1	3.2%
Radiological findings										
Cst size	10cm		14cm		10cm		18c m		13cm	
Median	6-14cm		7-22cm		4-16cm				4-22cm	
Range										
Cyst site	14	45.1%	7	29%	-	-	1	3.2%	22	71%
Right lobe	3	9.7%	2	6.5%	-	-	1	3.2%	5	16.1%
Left lobe	1	3.2%	1	3.2%	1	3.2%	-	-	3	9.7%
Bilateral										
Diagnostic features										
Septa	-	-	5	16.1%	-	-	1	3.5%	6	19.3%
Daughter cysts	-	-	13	42%	-	-	-	-	13	42%
Preoperative cyst aspiration										
Single	-	-	2	6.5%	1	3.2%	-	-	3	3.2%
Multiple	-	-	1	3.2%	-	-	-	-	1	3.2%

Table (2) shows postoperative complications according to the type of the procedure in "31 patients"

Procedure	Cyst		Post operative complications						Total			
	No	%	Bile leak No	%	Pleural effusion No	%	Subphrenic abscess No	%	Wound deh. No	%	No	%
Open unroofing	8 simple + 1 PCLD	29%	1	3.2%	-	-	-	-	-	-	1	3.2%
Lapp. Unroofing	3 simple	9.7%	-	-	1	3.2	-	-	-	-	1	3.2%
Conservative approach	16 hydatid	51.6 %	-	-	-	-	-	-	1	3.2%	1	3.2%
Cystopericystecomy	2 hydatid	65%	-	-	-	-	1	3.2%	-	-	1	3.2%
Removal with partial hepatectomy	1 cystaden- oma	3.2%	-	-	-	-	-	-	1	3.2%	1	3.2%
Total	31	100%	1	3.2%	1	3.2%	1	3.2%	2	3.2%	5	16%

There was no statistically significant difference as regard to the postoperative complication rates in all the procedures ($P > 0.05$).

Postoperative recurrence :

Eight recurrences were recorded in our study (29 %) irrespective to the type of hepatic cyst and the operative procedure done . Considering the type of hepatic cyst, recurrences were recorded as follow :-

For hydatid liver cysts 3 recurrences were recorded . Using ELISA , the total serum IgE returned to normal levels in 72.2 % of cases (13/18) within one year after surgery (Fig 1) . Among 5 patients who remained with high serum levels of total IgE , recurrent disease was confirmed in 3 by ultrasonography and C . T scan . One of the 3 recurrent cases had had bilateral disease and previously underwent percutaneous fine needle aspiration and drainage in other center . Albendazole therapy was described for recurrent cases with marvelous results .

For simple liver cysts (4 recurrences) were recorded. Recurrence rate after open unroofing of hepatic cysts was 37.4 % (3/8) and after laparoscopic unroofing 33.1% (1/3) without statistically significant difference in between (P = 0.242) . These recurrences were detected during routine ultrasonic examinations , however , only one patient was noted to have cyst present in the same region as that previously operated. This patient was also the only symptomatic person in this subset , yielding a symptomatic recurrence of 9 % (1/11) of all treated simple liver cysts with median follow up of 21 months .

For PCLD, recurrence was a consequence of underlying pathophysiology in that patient, however he expressed temporary and often long – lasting improvement with operative therapy . This patient was referred to other center for liver transplantation .

For cystadenoma, no recurrence was recorded for 21 month after removal of the cyst with partial hepatectomy .

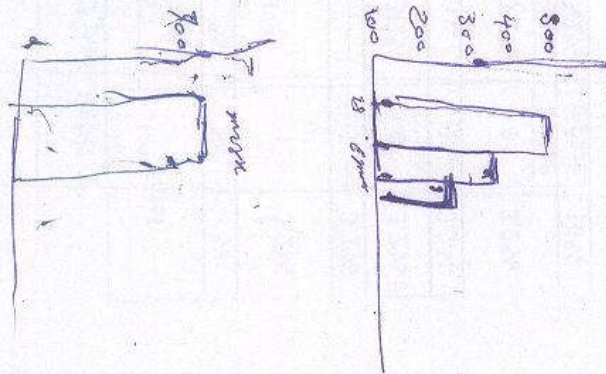


FIG 1 : TOTALS IgE

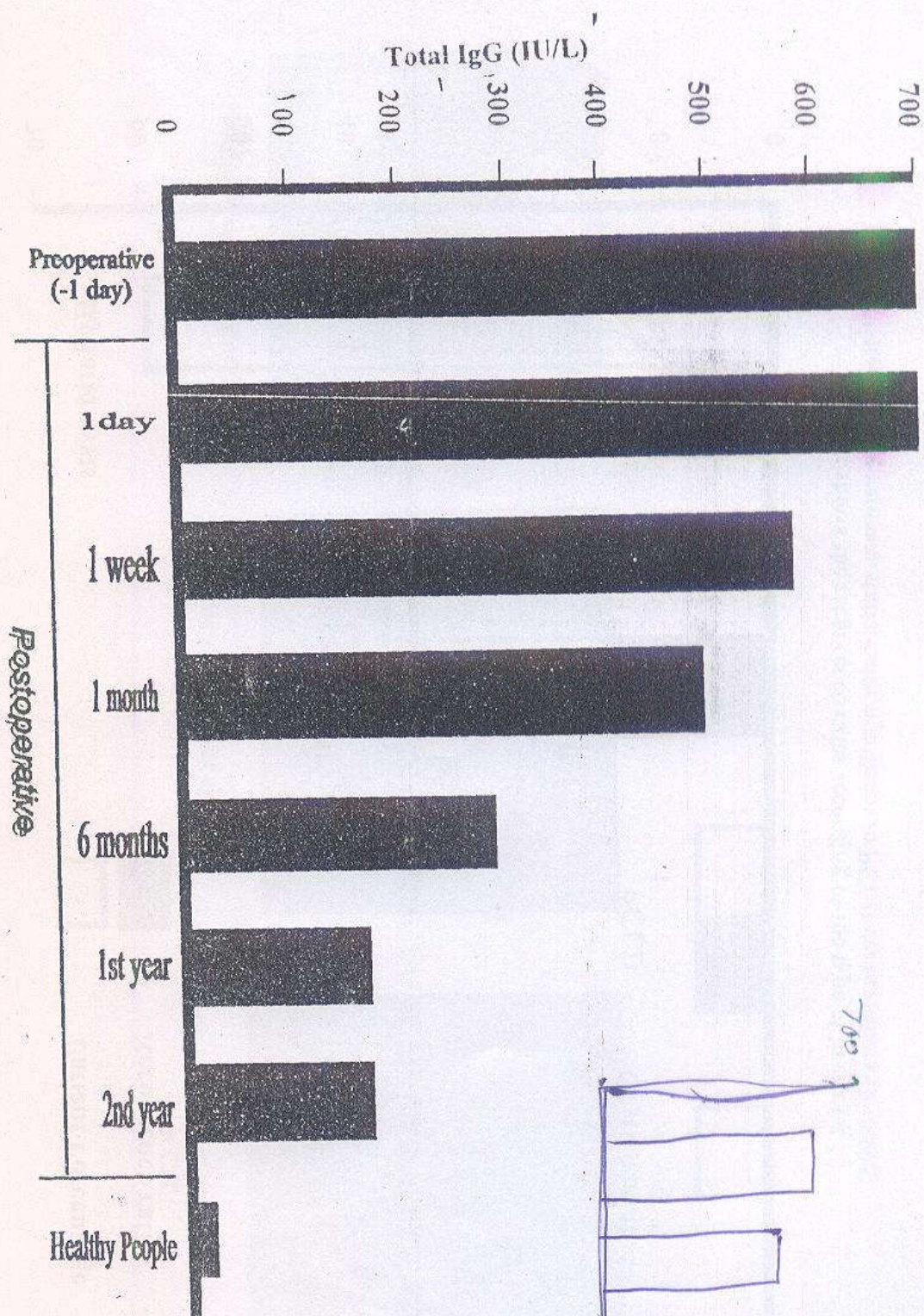


Fig 1 : Total IgG levels (IU / L) in 18 cases of hydatid cysts

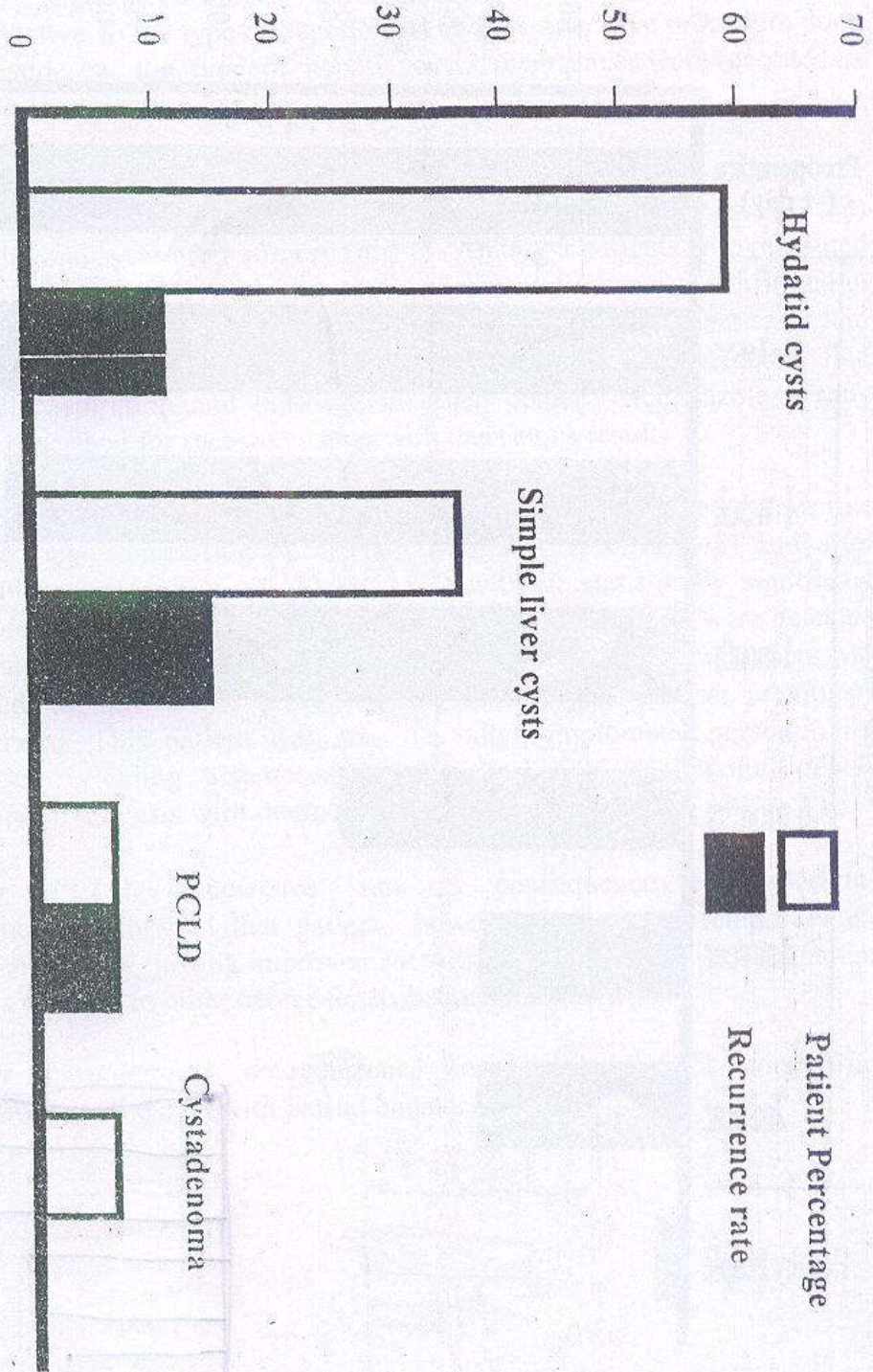


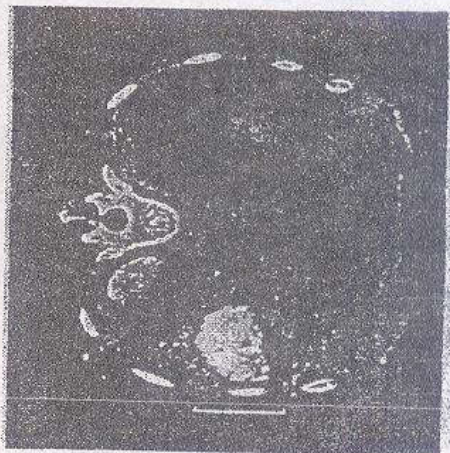
Fig (2) : shows the recurrence rates according to the type of liver cyst .
Recurrence rate was statistically significant in PCLD versus others (P<0.005)



Multiple simple Liver cysts on
U.S



Multiple simple Liver cysts on
C.T



Type 1 Polycystic Liver disease
on C.T