Management of focal liver lesions in gastroenterology & hepatology hospital

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ABSTRACT

Aim of the study: The aim was to evaluate patients with focal liver lesions and to choose the best approach for diagnosis and treatment.**Patients and methods:** This is a prospective study designed in our center;(Gastrointestinal and Hepatology hospital - Baghdad city) from January 2011 to February 2013 for 30 patients in which they underwent laboratory and radiological investigations with OGD, colonoscopy, and FNA.**Results:**In this study 70% of patients had abnormal complete blood picture and ESR, 10% of the patients had elevated alpha feto-protein. Ultrasound detected the focal liver lesion in 93.3%, MRI in 100% of cases. Nine out of 30 patients had surgically resectable lesions while 21 were surgically unresectable. Two patients who underwent surgical resection died. **Conclusions:**Most of patients with focal liver lesions were adults. Radiological imaging with different modalities complete each other and it is important for detection, diagnosis, and guidance for management. Most of focal liver lesions which underwent surgery required major liver resection. Fine Needle Aspiration should be avoided in resectable lesions.
Keywords:focal liver lesions, alpha feto-protein, MRI, and resectable.

Introduction:

1.1 Definition

Focal liver lesions are defined as solid or liquid-containing masses in the liver that are detected by imaging techniques. Their nature is widely varying, and may range from benign lesions with an indolent and may range from benign lesions with an indolent clinical course to aggressive malignant tumors (Table 1-1). They are common findings as a result of the ever increasing use of imaging techniques in patients with non specific abdominal complaints [1].

Table (1-1) focal liver lesions

Benign lesions	
Hepatocellular	Focal nodular hyperplasia, hepatocellular adenoma
Biliary	Biliary cystadenoma, biliary hamartoma
Cystic	Simple cyst, hydatid cyst, pyogenic/ amebic abcess
Mesenchymal	Cavernous hemangioma, lipoma, angiomyloma, leiomyoma, fibroma, teratoma, solitary fibrous tumor, myelolipoma, myxoma
Other lesions	Focal fatty infilteration, inflammatory pseudotumer e.g. hepatic tuberculoma.
Malignant lesions	
Primary	
Hepatocellular	Hepatocellular carcinoma, hepato-cholangio carcinoma, hepatoblastoma
Biliary	Cholangiocarcinoma, cyst adenocarcinoma
Mesenchymal	Angiosarcoma, epithelioidhemangioendothelioma, fibrosarcoma, leomyosarcoma, rhabdomyosarcoma
Others	Lymphoma
Metastatic	
Adenocarcinoma	Collon, lung, breast, Stomach, pancreas, prostate, ovary, urinary tract tumor, thyroid tumor,
Squamous cell carcinoma	Lung, esophagus, larynx,perineal tumor
Others	Sarcoma, lymphomas, melanomas, neuroendocrine tumor.

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The diagnosis of focal liver lesions is based on clinical findings, laboratory data, imaging techniques, and frequently histology [1,2].

Beforehand, incidental lesions in asymptomatic patients with no history of neoplasms or liver disease are usually benign; cysts, hemangiomas, and focal nodular hyperplasia (FNH) are most prevalent in our setting.In contrast, liver lesions in cirrhotic patients demand that hepatocellular carcinoma (HCC) should be ruled out [3].

Initial assessment is relevant to exclude factors predisposing to selected tumors.Thus, a history of oral contraceptive use in a young woman suggests hepatocellular adenoma,cirrhosis is a preneoplastic condition for hepatocellular carcinoma, and sclerosing cholangitis predisposes to cholangiocarcinoma. Serologic tests for hepatitis viruses, Echinococcus and Entamoeba may suggest a diagnosis. However, a definite diagnosis is established by using two essential tests: imaging techniques and a cytohistologic study.Radiological features provide a hint to the type of the lesion whether solid (benign or malignant tumors) or cystic. Solid tumor vascularization provides guidance on their etiology [3]. Our study will review liver lesions most commonly seen in our setting, and a suggested diagnostic and therapeutic approach will be set forth.

Cystic lesions

Simple cyst: Simple liver cyst is a congenital lesion affecting 2-7% of the population [4-8]. It is usually a single lesion of serous contents lined by cuboidal, biliary type epithelium with no communication with bile ducts [4-6]. Regarding multiple lesions, liver or renal polycystosis stands out. They rarely causes jaundice, infection or hemorrhage < 5% [5,7].

Hydatid cyst It caused by the Echinococcusgranulosus. It involves the liver, lung, and central nervous system among others [9,10]. Hydatid cysts may become complicated in one third of cases, rupturing into the peritoneum or into the pleural space or bile ducts.

Liver abscess: Pyogenic liver abscess is caused by gastrointestinal microorganisms as a result of cholangitis from bile obstruction (40%of patients) or portal bacteremia secondary to gastrointestinal infections such as diverticulitis or appendicitis [2,10,11]. CT allows diagnosis confirmation upon the finding of one or several cystic lesions with a hyperenhanced perilesional halo in the dynamic study, occasionally with gas inside [2,10,11].

Solid lesions/Liver hemangioma

Hemangioma is the commonest tumor in the liver, with a prevalence of 0.4-7.4% [2,4,13]. Of vascular origin, this tumor consists of large vessels lined with mature endothelial cells within a fibrous stroma[2,4,5,14]. It is a usually single small lesion of up to 20 mm in size that is more frequently found in women [1,2,4,13]. In most cases, it is a haphazard finding in a patient with no symptoms or unspecific abdominal complaints [1,2,5,13]. It can occur as part of well-defined clinical syndromes known as Kasabach Merritt syndrome [12]. The size of lesion is not a criterion for resection during management of giant liver hemangioma. However the smaller giant hemangioma also can cause symptomatic manifestation [16]. Management is symptomatic and surgery is only exceptionally considered [1,2,14].

Focal nodular hyperplasia

Focal nodular hyperplasia (FNH) is a benign tumor with a prevalence of 0.01% in the general population [2,4,5,17]. It is usually smaller than 5 cm in size but may range from 1 to 20 cm, and is multiple in 20% of cases [4,5,17]. It is considered a hyperplastic proliferation of normal liver cells in response to a preexisting arterial malformation [1,2,5,17]. Histologically, it consists of liver cells abnormally laid out in sheets instead of lobules, which contain Kupffer cells and abnormal bile ducts not connected with the bile system. Greater lesions commonly have a central scar made up from fibrous stroma by a supply artery and hyperplastic bile ducts [5,17-15].FNH is more frequent in women of childbearing age [2,5], develops in healthy livers, and is usually an incidental finding since its clinical course is commonly asymptomatic. It may exceptionally result in pain in the right upper quadrant of the abdomen [2]. No cases with hemorrhage or malignization have ever been reported [1,2,17].Oral contraceptive use and pregnancy may favor its growth, but not its development[1,5,17].

Hepatocellular adenoma: It is an uncommon tumor (prevalence : :0.001%that almost exclusively affects women of childbearing and oral contraceptive users [2,5,17].It can be complicated by life-threatening rupture and bleeding or undergo malignant transformation[18]. Management of HCA frequently requires cessation of oral contraceptives, intermittent follow-up with radiologic imaging, and a recommendation to avoid pregnancy [19] Usually it occurs as a solitary mass, but a diagnosis of liver adenomatosis (10-20% of cases should be considered for multiple adenomas) [2,4,17,].It is histologically made up of atypia-free liver cells arranged in rows separated by dilated sinusoids, with no portal spaces or bile ducts [2,5]This tumor is asymptomatic in most cases, but may present with pain in the right upper quadrant of the abdomen. The most common complication is hemoperitoneum, whose risk increases for tumors larger than 5 cm and when contraceptive use persists beyond diagnosis [1,2,17,20].

Similarly, cases with degeneration to liver cell carcinoma have been reported [1,4,17].

Hepatic tuberculoma: It is the usual clinical signs and symptoms, related to a chronic inflammatory process along with tender hepatomegaly and elevated hepatic transaminases. In a large percentage of cases, the hepatic tuberculoma is clinically silent and is only incidentally detected during imaging studies[21] they are often misdiagnosed as primary or secondary hepatic tumors on imaging; the final diagnosis requires a biopsy confirmation [22] .

Liver metastatic disease: Liver metastases are the most common malignant tumors in the liver, since 35-40% of cancers develop this sort of disseminatin[2,23].Most common metastases originate in the lung, the gastrointestinal tract (colon, stomach, pancreas, and gallbladder), breast and ovary [24].The presence of metastatic liver disease usually entails a poor prognosis. Two major exceptions include colorectal cancer (CRC) metastases when susceptible of surgical resection, and neuroendocrine tumor metastases, as they are of a less aggressive nature. A search for the primary tumor is warranted for patients with an acceptable general condition [24].

From a clinical standpoint, a number of symptoms may provide guidance on the origin of the primary tumor; altered bowel habit and/or rectorrhage in CRC, jaundice in pancreatic tumors, carcinoid syndrome in endocrine tumors, etc. Tumor markers may be useful, but they are not definite parameters. Carcino embryonic antigen (CEA) is increased in 90% of CRC metastases; in pancreatic and ovarian tumors CA125may be elevated; Prostatic specific antigen (PSA) may rise in prostate cancer, and 5-hydroxyindolacetic acid in carcinoid tumors [24].

Regarding imaging techniques, CT reveals a hypovascular lesion with characteristic contrast uptake, whereas in a few cases there is hypervascular enhancement suggesting a carcinoid tumor, melanoma, sarcoma, hypernephroma or thyroid cancer [2,5].A surgical management of metastatic liver disease may prolong survival for CRC, neuroendocrine tumors, and some renal tumors [2,24],but is controversial in the remaining tumors.

Hepatocellular carcinoma

(HCC) is the most frequent primary tumor of the liver and the fifth more common malignancy worldwide, and represents the third cause of cancer related mortality [25]. In developed countries it sits on a cirrhotic liver in more than 80% of cases [26].Follow-up every 6 months using ultrasonography and alpha-fetoprotein determination is recommended in these patients to detect early tumors, at a time when healing treatments are feasible [27].Differentiation between initial HCC and both regeneration and Dysplastic nodules is important in patients with cirrhosis, as is also the case with atypical hemangioma and metastatic disease. In tumors greater than 2 cm, this may be achieved by using imaging techniques, whereas puncturing for histology samples is essential in tumors 1-2 cm in size.

The strategy recommended for nodules smaller than 1 cm is an expectant attitude and serial ultrasounds every 3 months [26].

Aim of the study: Assessment and evaluation of patients with focal liver lesions and choose the best approach for diagnosis and treatment.

Patients and methods

This prospective study was carried in Gastrointestinal and Hepatology hospital - Baghdad city for 24 months period from January 2011 to February 2013.

PatientsThis study analyzed 30 patients referred to our tertiary center for further evaluation and management; some of these patients were symptomatic while others were not.

Exclusion criteria

1-Patients with radiological confirmation of hydatid cyst or recurrent disease.

2-Patients with end-stage advance cancer beyond any intervention.

3-Patients travelled outside the country for treatment after the diagnosis on their responsibility.

4-Those who refuse treatment or general condition were not suitable.

Inclusion criteria

1-Symptomatic and asymptomatic patients with liver mass.

2-Cirrhotic patients which develop hepatocellular carcinoma discovered during follow up.

3-Followed up patients for malignant liver lesions after refer to oncology (include those after surgical treatment and those unfit for surgery).

4-Pediatric age group with liver mass and elevated alpha-fetoprotein

.5-Patients with recurrent liver tumor and those with secondary.

Methods

All patients were assessed by taking full history and conducted complete physical examination. They were investigated as follows:

Laboratory tests

Which are: complete blood pictures, liver function tests, renal function tests, coagulation study, virology screening, and alpha-fetoprotein; if above 400 ng/ml consider malignancy.

Radiological tests *Ultrasound*

; It was carried out for all patients (rapid, not expensive, not invasive, no contrast materials, operator dependent, use of Doppler study).

CT-SCAN; Twenty seven patients underwent CT scan by the use of new generation one 64 slices and use of contrast materials in 3 phases; native, oral contrast, intravenous contrast; rapid and delayed phase figure (2-1), (2-2), and (2-4).

MRI; Nineteen patients underwent MRI which is a technique that produce images based magnetic field and radio waves, the MRI scanners create a powerful magnetic field that aligns the hydrogen atoms in the body , and radio waves are used to alter the alignment of this magnetization. Liver specific MRI contrast agent also has been developed that rely on excretion either by Kuffer cells or by hepatocytes figure (2-3).

We reach the diagnosis in some of patients but others need further invasive procedures like:

OGD; Oesophago-gastro-duodenoscopy (Olympus,Pentax) was done for seven patients who complained from repeated vomiting and features of gastric outlet obstruction.

Colonoscopy;was done for three patients who complained from bleeding per rectum and/or alteration of bowel habit, by the use of sedation to check up the whole colon, for any evidence of tumor wither benign or malignant, and this is done with endoscopic biopsies.

FNA; Fine needle aspiration was done for eleven patients in radiological department (sonographic room) with the help of radiologist to determine the most suitable lesion which had the safest, shorter route, and away from major vessels, with local anesthesia injection to skin at the site of penetration, then use spinal needle 14 G, aspirate the sample, put on dry slide and wet slide fixed with alcohol, then send to the histopathologic department.

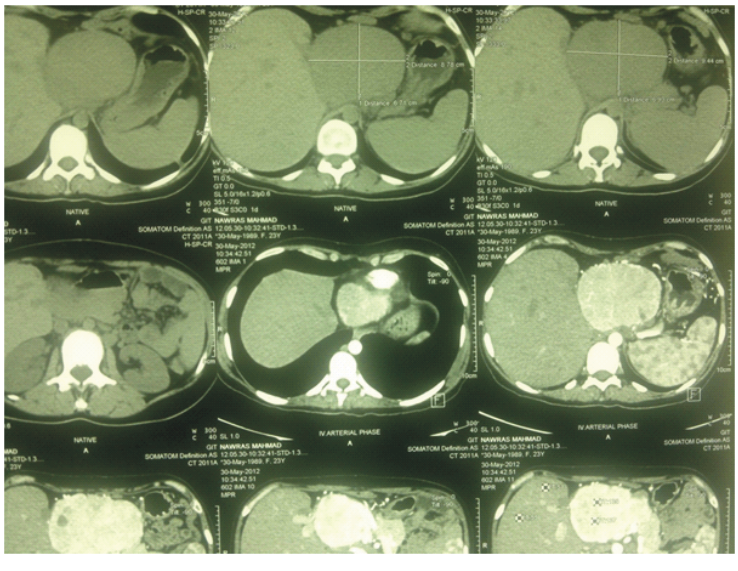
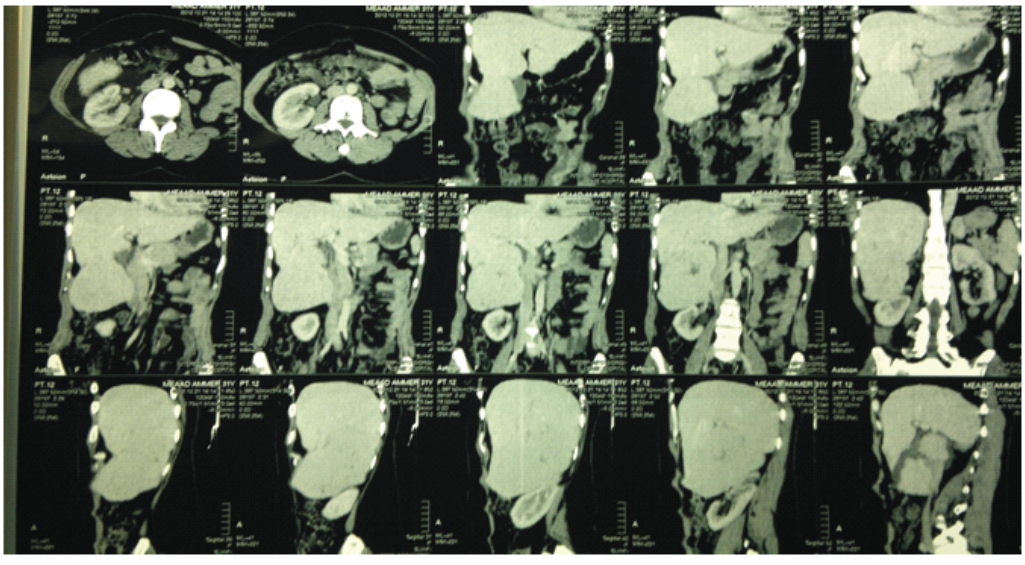
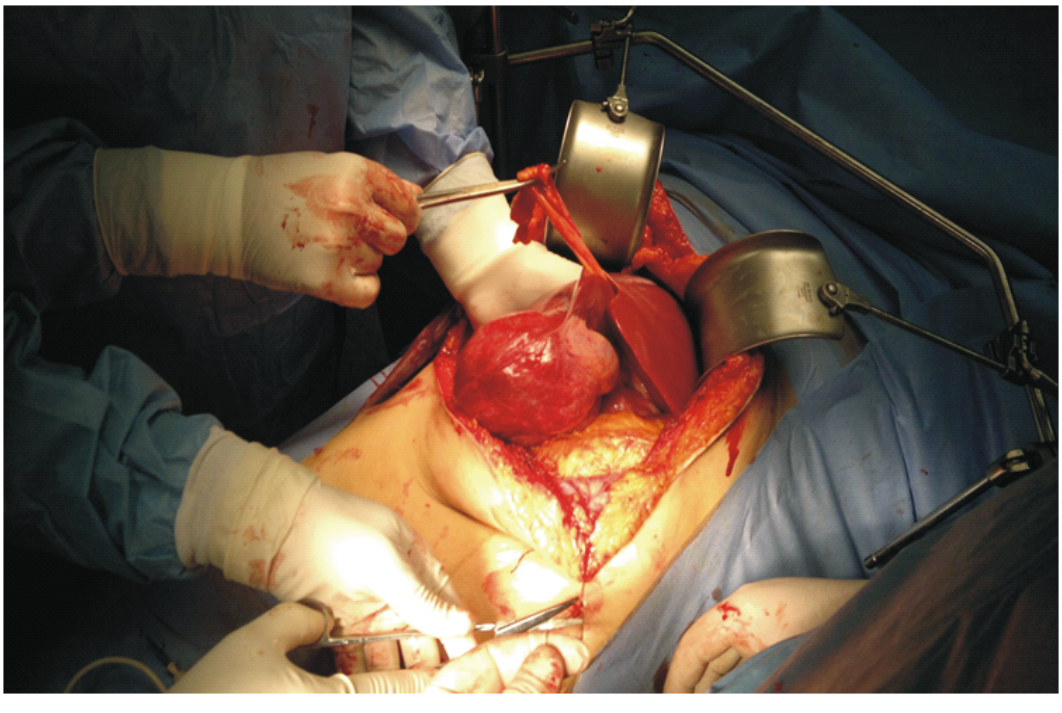


Figure (2-1) A case of Recurrent HCC, (CT scan & specimen).





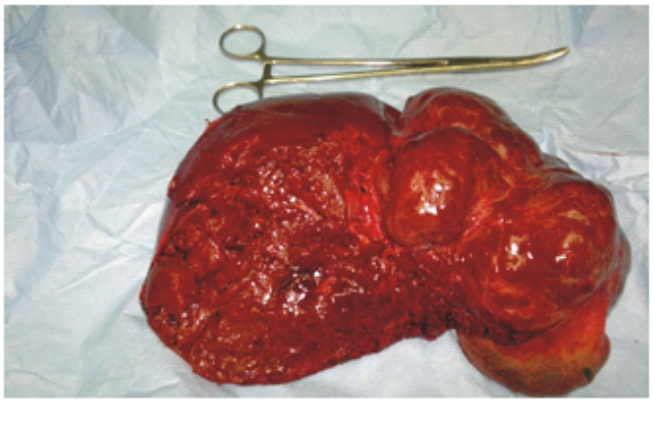
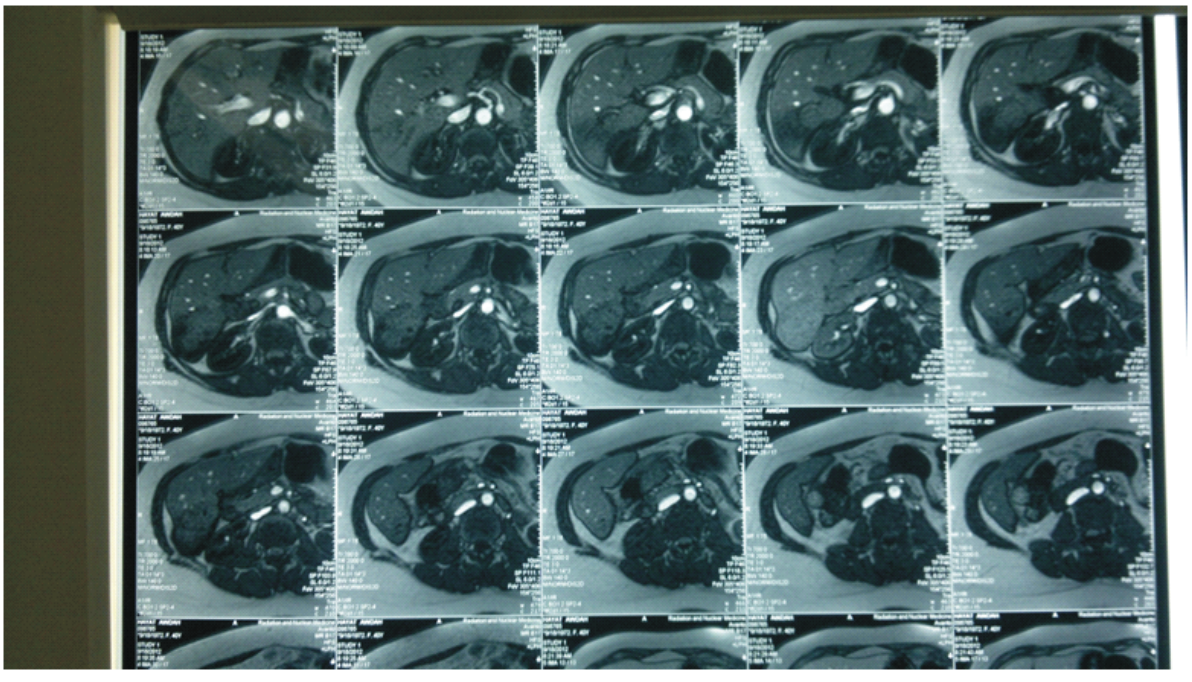


Figure (2-2) A case of Giant FNH, (CT scan, operative findings & specimen).



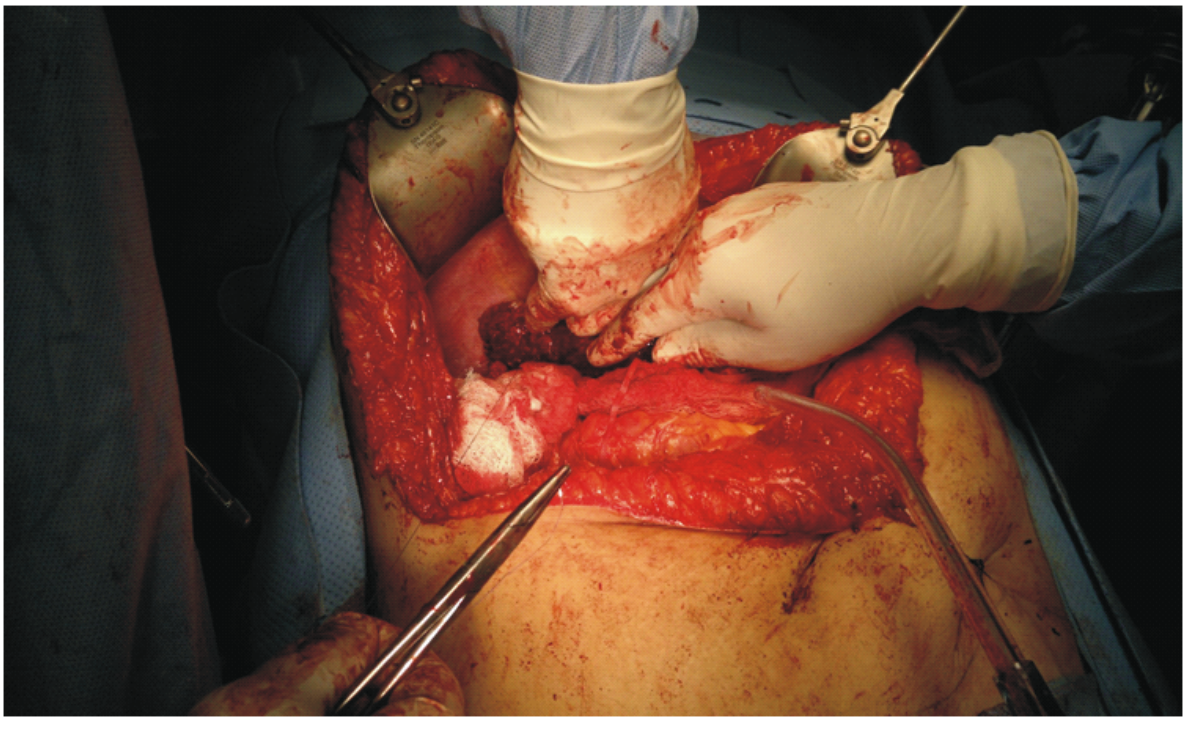
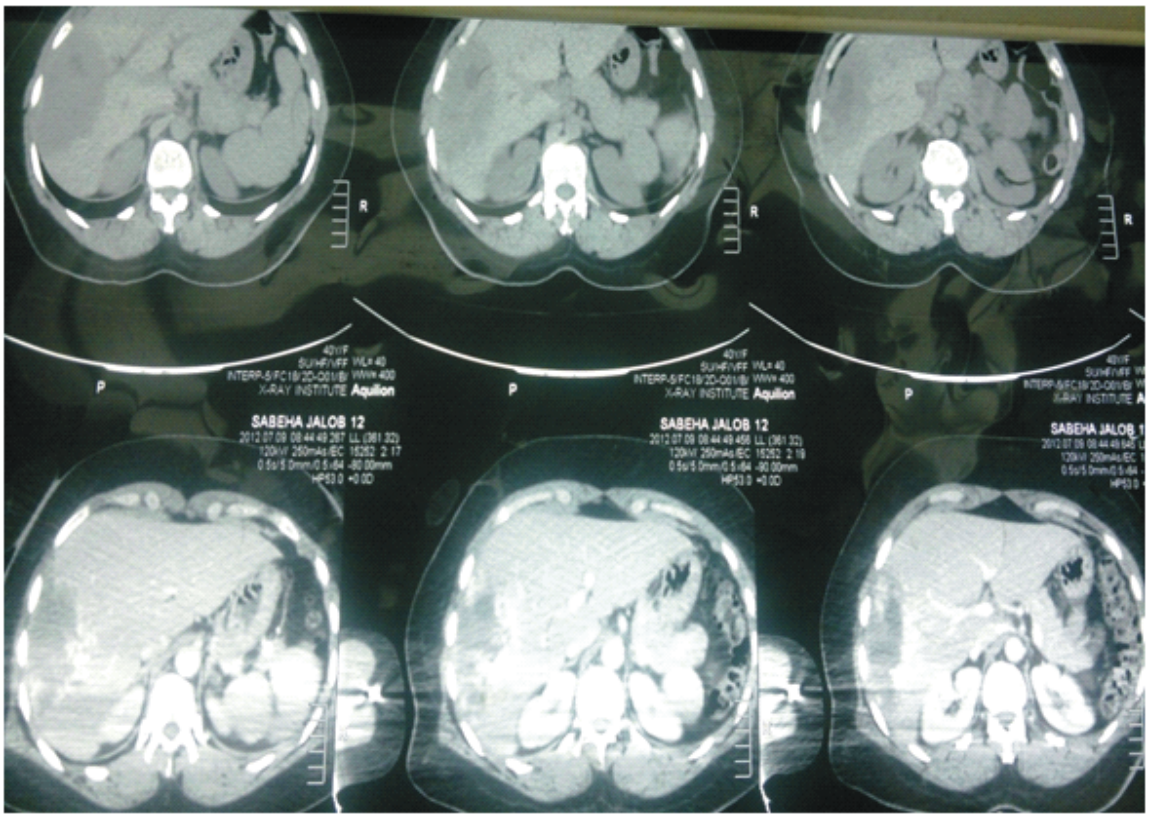


Figure (2-3) A case of tuberculoma, (MRI scan and operative findings).



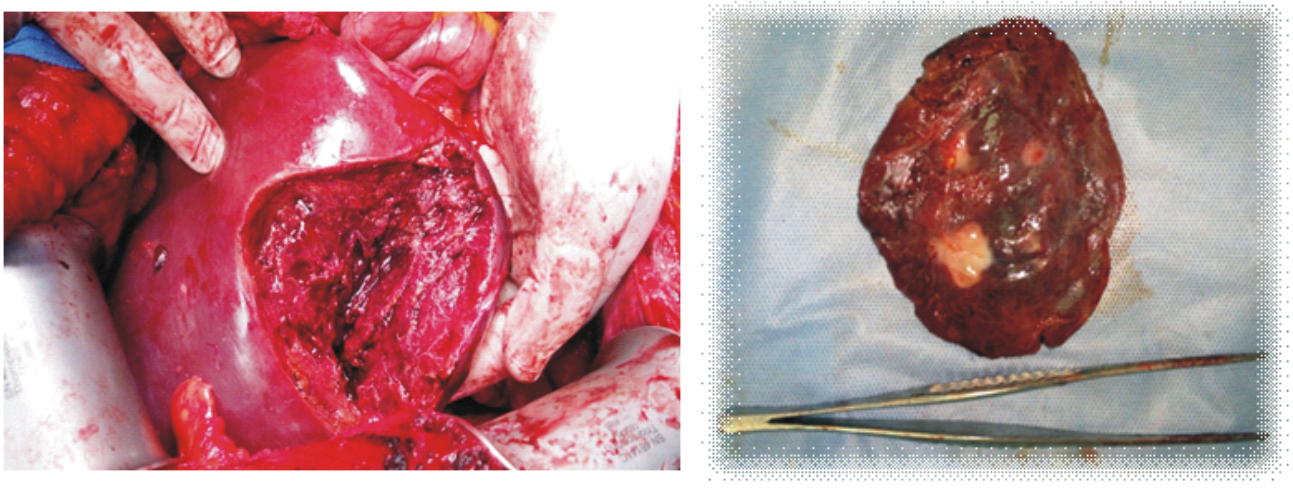


Figure (2-4) A case of haemengioma, (CT scan, operative findings, remaining liver and specimen).

Results

Clinical characteristics of patients with focal liver lesions All patients were divided according to gender, age, history, and clinical examination. These patients were 18 (males) and 12 (females).

Five patients had Jaundice. Five patients with abdominal mass were asymptomatic while four patients had symptoms with no remarkable clinical examination as shown in table (3-1).

Table (3-1) Clinical characteristics of patients with focal liver lesions.

presenting symptoms	History	Age (year)	Gender	No. of patients	
Abdominal mass	Asymptomatic	2 months, 1 9	2 M 1 F	3	Pediatric age
Abdominal mass	Asymptomatic	31 , 40	2 F	2	Adult age
Normal	Epigastric pain wt. loss anorexia	30 37	1 M 1 F	2	
Normal	Abdominal pain anorexia	43 40	M F	2	
Rt.leg swelling(DVT)	A known case of HCC Had previous surgery Develop Rt.leg swelling	23	M	1	
Rt. Hypochondrial tenderness Jaundice.	Fever Epigastric pain, Hx.oftrauma ,haematemsis and malena past surgical Hx. Of Lap.chole. since one year.	45	M	1	
Normal	RUQ pain, previous LAP. Chole.	40	F	1	
S&S of chronic liver disease	A known case of liver cirrhosis	58, 65, 60 54, 61	3 M 2 F	5	
Rt. Hypochondrial tenderness ,midline scar, pale	Previous trauma , post bullet injury, laparotomy	45	M	1	
Pale Dehydration Epigastric fullness	Epigastric pain Recurrent vomiting Loss of wt. anorexia	30, 34 33, 35, 36	2 M 3 F	5	
Jaundice Epigastric tendrness	Epigastric pain, Loss of wt. Anorexia, vomiting	32, 34, 40 33	3 M 1 F	4	
Abdominal distension (one patient had mass on DRE)	Constipation Lower abdominal pain Loss of wt., loss of appetite	43, 46 41	2 M 1 F	3	

Laboratory tests

Table (3-2) shows number and percentage of patients, 70% had abnormal complete blood pictures and ESR, 10 % had elevated alpha-fetoprotein.

Table (3-2) Laboratory tests

No. and % of patients with abnormal tests		Laboratory tests
36.6%	11	Liver function test
70%	21	CBP&ESR
3.3%	1	PT,PTT,INR
30%	9	Virology Positive(C,B)
6.6%	2	Renal function test
10%	3	Alpha-fetoprotein

Sixteen patients complained from anemia, 2 patients complained from leukopenia while 7 patients complained from leukocytosis, 2 patients had high ESR as shown in table (3-3).

Table (3-3) CBP and ESR tests

No. of patients	CBP and ESR	
1	< 6	Hb (g/dl)
3	6-8	
9	8-10	
3	10-12	
14	12-14	
2	<4000	WBC (count /ml)
21	4000-10000	
7	>10000	
28	<20	ESR (mm/hr)
2	>20	

10 patients had elevated TSB, 3 patients had elevated ALP, 7 patients had elevated liver enzymes, 6 patients had low albumin as shown in table (3-4).

Table (3-4) Liver function tests

No. of patients	Liver function test	
20	0.1-1.2	TSB (mg/dl)
10	> 1.2	
27	35-92	ALP (IU/L)
3	> 92	
23	5-35	SGPT (IU/L)
7	> 35	
23	8-40	SGOT (IU/L)
7	> 40	
24	3.5-5.1	S. Albumin (g/dl)
6	<3.5	

Nine patients had positive virology test, 4 of them were HBV and 5 of them HCV as shown in table (3-5).

Table (3-5) Virology tests

No. of patients	Virology	
4	+ve	HBV
5	+ve	HCV

Radiological tests

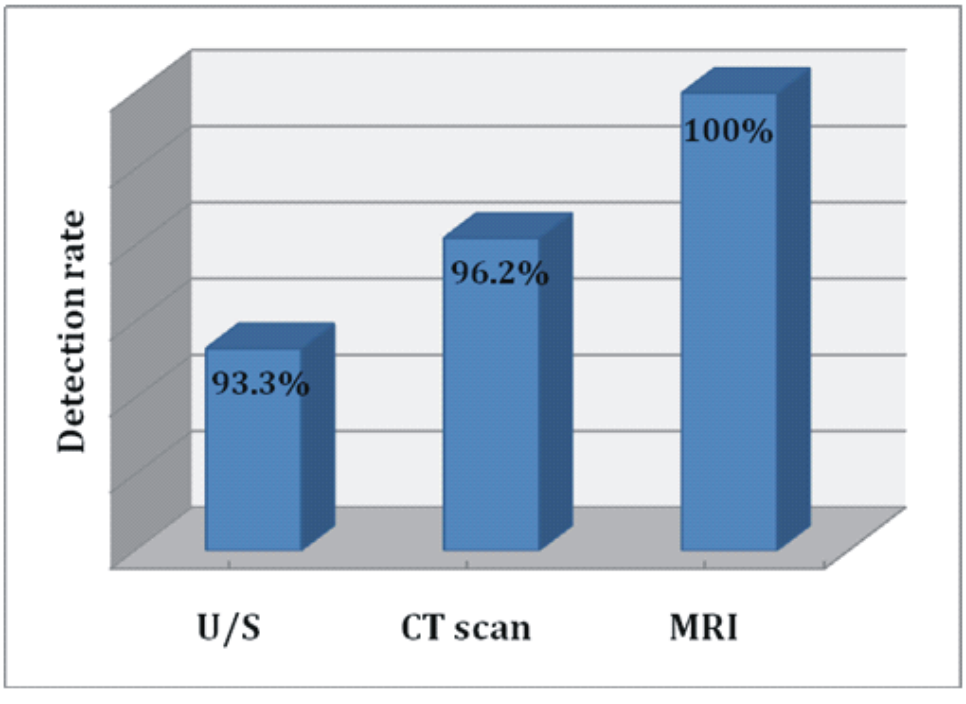
All patient underwent U/S, the lesion detected in 28 patients ,after the use of color Doppler study with clinical correlation, the diagnosis reached in 11 patients , while the other 17 patients, the result was equivocal or not conclusive.

26 out of 27 patients had detected lesions by CT scan, 5 of them need further evaluation while 3 patients out of 19 need further evaluation after MRI, so the detection rate by U/S, CT scan, and MRI were 93.3%, 96.2%, and 100% respectively as shown in table (3-6) and figure (3-1).

Table (3-6) Radiological tests

Detection rate	Need further evaluation	Highly diagnostsic finding	Detected the lesions	Total No.	Subject
93.3%	17	11	28	30	U/S
96.2%	5	21	26	27	CT scan
100%	3	16	19	19	MRI

Figure (3-1) Radiological tests.



After completion of laboratory and radiological evaluation, some patients need further evaluation to reach the definitive diagnosis in which Fine Needle Aspiration (FNA) under ultrasound guide were done for 11 patients which had equivocal lesions, Oesophago-Gastro-Duodnoscopy (OGD) was done for 7 patients who complaining from repeated vomiting and / or hematemesis, and Colonoscopy was also done for 3 patients who complaining from bleeding per rectum and / or alteration of bowel habits, as shown in table (3-7).

Table (3-7) Invasive procedures.

No. and (%) of patients	Subject
11 (36.6%)	FNA
7 (23.3%)	OGD
3 (10%)	Colonoscopy
21 (70%)	Total

Table (3-8) final diagnosis

No. of patients	Subject	
2	Liver abscess	Unresectable + Untreatable
4	Liver secondaries of gastric origin	
3	Liver secondaries of pancreatic origin	
5	Liver secondaries of sigmoid and colonoscopy origin	
1	Liver haematoma	
5	Liver tumor + cirrhosis	
2	HCC	Resectable
1	Hepatic tuberculoma	
2	Hepatoblastoma	
1	Cirrhosis + glycogen storage disease	
1	Metastatic lymphoma	
1	Hepaticliomyosarcoma	
1	Giant FNH	
1	Hemangioma	
30	Total	

Treatment modalities

After complete evaluation, surgical resection was done for 10 patients, While 14 patients were unresectable. 6 patients with end stage liver disease treated conservatively as shown in table (3-9).

We reached the diagnosis in all 30 patients and here we obtain three groups of patients:

1-Surgically resectable, in which enucleation, segmentectomy, or lobectomy was done.

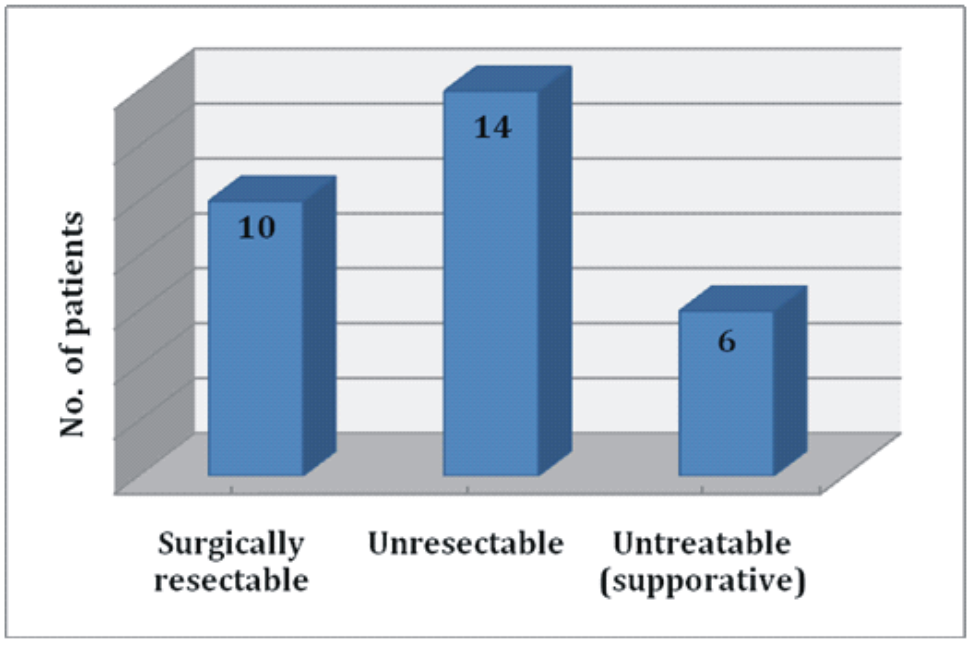
2-Surgically unresectable, in which referred to oncologist for chemo-radiotherapy.

3-Untreatable cases (just for supporative treatment) as shown in table (3-9) and figure (3-2).

Table (3-9) Treatment modalities

No. and (%) of patients	Subject
10 (33.3%)	Surgically resectable
14 (46.6%)	Unresectable
6 (20%)	Untreatable(supporative)
30 (100%)	Total

Figure (3-2) Treatment modalities.



Type of surgery with their histopathologic study was done for ten patients as shown in table (3-10).

Table (3-10) Surgicallyresectable patients

Histopathology	Type of surgery	
HCC	Resection of recurrent tumor with safe resection margin and lymphadenectomy	1
tuberculoma	Right hepatectomy	2
hepatoblastoma	Extended Rt.hepatectomy	3
Liver….Hepatoblastoma Incisonal biopsy….metastatic L.N of Hepatoblastoma origin	Bisegmental resection 5,6 and incisonal biopsy taken from mass which was engulfying major central vessels	4
Cirrhotic liver due to glycogen storage disease	Living donar liver transplant	5
High grade HCC	Rt.Hepatectomy (mass intimately adhere to the IVC) ,so partial tear of IVC….sutured by prolen 4/0 repair	6
Metastatic lymphoma	Rt.Hepatectomy with resection of short segment of small bowel with its mesentry due to intimate relation with mass	7
Malignant spindle cell tumor compatible with liomyosarcoma	Segmental resection 4b and 5	8
Giant FNH	Rt.Hepatectomy	9
hemangioma	Enoculation of a liver mass from segment 6 and 7	10

Follow up period was done from day 0 postoperative till 6 months. So, we had:

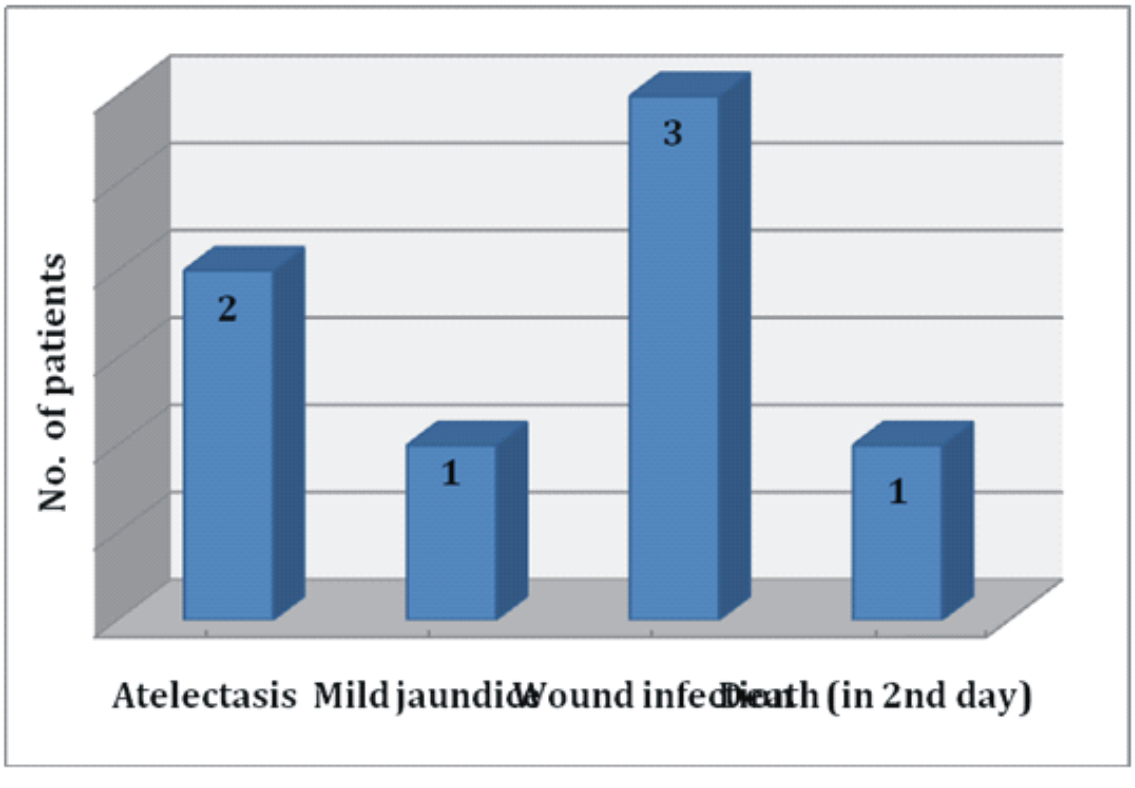
•Early postoperative complications in 7 patients were developed during hospital stay as shown in table (3-11) and figure (3-3).

•Late postoperative complications in 8 patients were developed in the next 30 days till 6 months as shown in table (3-12) and figure (3-4).

Table (3-11) Early post-operative complications during hospital stay

complications	No. and (%) of patients
Atelectasis	2 (6.6%)
Mild jaundice	1 (3.3%)
Wound infection	3 (10%)
Death(on 2nd day)	1 (3.3%)

Figure (3-3) Early post-operative complication during hospital stay

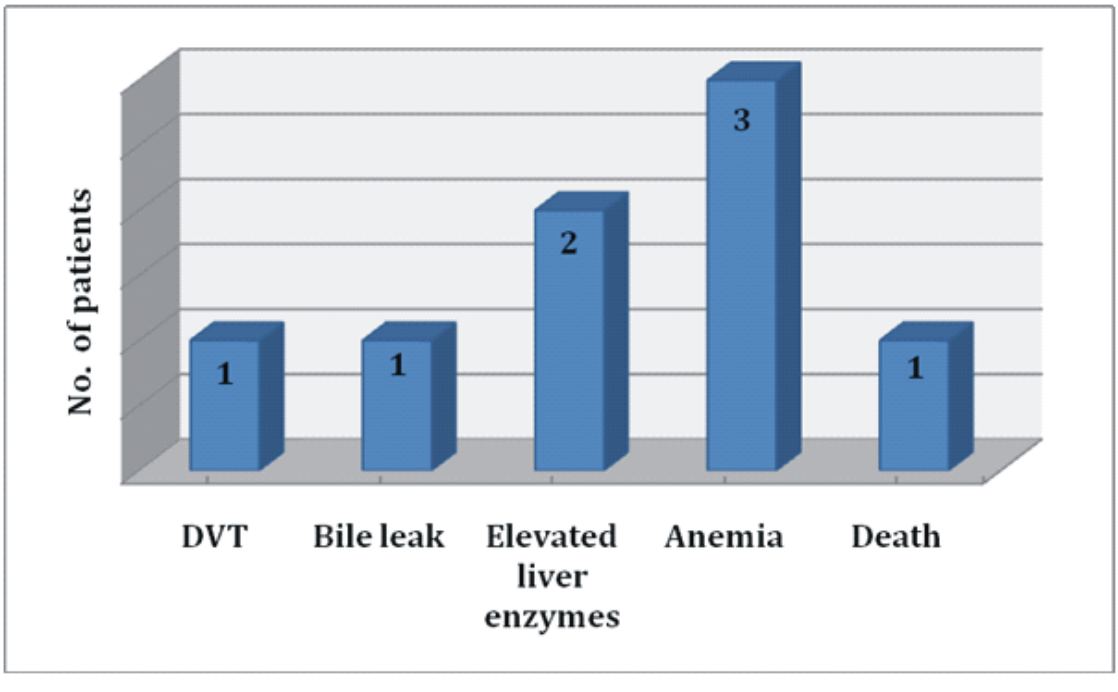


One patient (2 months old) who complained from abdominal mass, underwent major hepatic resection (extended right hepatectomy) died on second day of operation due to hepatic insufficiency.

Table (3-12) Late complications after discharge.

complications	No. and (%) of patients
DVT	1 (3.3%)
bile leak	1 (3.3%)
Mild elevated liver enzymes	2 (6.6%)
anemia, one of them need 1 unit of blood transfusion	3 (10%)
Death	1 (3.3%)

Figure (3-4)Late complications after discharge



Till 6 months of follow up, one patient still had bile leak so ERCP was done. Ten weeks later; patient recovered completely from bile leak.

One patient who developed DVT was responded to the treatment in 6weeks.

Discussion

Ultrasonography suffices to determine the cystic nature of a focal liver lesion. Clinical characteristics; hydatid and amebic-related serologic tests, CT and MRI scans allow a differential diagnosis between simple cyst, liver and renal polycystosis, hydatid cyst, and pyogenic and amebic abscess.Telling apart a cystadenoma from a cystadenocarcinoma is difficult and requires the histological study of the resected lesion for confirmation. Finally, some metastases may look cystic, as in those of ovarian or pancreatic origin, especially those stemming from selected neuroendocrine tumors in agreement with Cherqui*et al*., 1995.The most prevalent lesion is hemangioma, which is diagnosed by using ultrasonography and MRI. FNH and adenoma should be ruled out in younger women or in women with a history of oral contraceptive use. FNH is asymptomatic and much more common. Despite the fact that MRI may differentiate these two conditions in more than two thirds of patients in agreement with Cherqui*et al*., 1995 and Flejou*et al*., 2001.Fine-needle aspiration is required for doubtful cases. If uncertainty persists on the nature of the lesion, surgical resection is recommended in agreement with Cherqui*et al*., 1995 and Hussain *et al*., 2002.Biopsy collection will also allow etiology to be established in asymptomatic malignancies and atypical tumors.

For these patients a diagnostic strategy has been clearly established by the European Association for the Study of the Liver (EASL) expert panel in their Barcelona-2000 EASL Conference .

Lesions greater than 2 cm are usually diagnosed using imaging techniques; lesions of 1-2 cm in size require histology, and lesions less than 1 cm in diameter call for ultrasonographic surveillance at 3 months in agreement with Sherlock and Dooley 1993; Llovet*et al*., 2001; Hussain *et al*., 2002.Three distinct situations may be considered in patient with suspected metastasis or known tumor:

1. Patients with a known primary tumor who have liver metastases found at tumor staging or following his/her primary tumor management. Histology is only required when the nature of the focal lesion is doubtful in agreement with Mitchell *et al*., 1994.

2. Patients with an unknown primary tumor who are in good general condition. The search for a primary tumor is based on histology. Most common liver metastases stem from adenocarcinomas and poorly differentiated neoplasms:Adenocarcinoma (well or moderately differentiated): when are of gastrointestinal origin, colorectal cancer must be ruled out particularly in patients older than 50 years with CEA > 5 ng/mL or altered bowel rhythm in agreement with Llovet*et al*., 2001; Parkin*et al*, 2001; Colombo et al., 2003.

Then gastric cancer must be excluded, and finally pancreatic cancer in patients with jaundice or altered CA 19-9 or CA 125. For non-gastrointestinal tumors, the following tumors should be ruled out in order of frequency: lung cancer and prostate cancer, the latter especially in patients with PSA > 4 ng/mL, increased acid phosphatase or bone osteoblastic metastases. In women, gynecologic tumors such as breast and ovarian cancer.Poorly differentiated neoplasms: immunohistochemical techniques are of great clinical importance to differentiate carcinomas (anti-cytokeratin antibodies) from the rest of tumors. Amongst carcinomas, lung, breast, prostate, pancreas, and urologic cancers stand out. Neuroendocrine tumors make up a distinct subgroup according to their differential characteristics.

3. Patients with an unknown primary tumor and severe impairment of the general condition (performance status 3-4). These patients exhibit severe toxic syndrome, liver infiltration and liver failure symptoms, severe laboratory abnormalities, and multiple metastatic images. Patient characteristics hamper a number of explorations and render therapy non useful; so symptomatic treatment is therefore recommended in agreement with Llovet*et al*., 2001 and Colombo *et al*, 2003.

Conclusions

1.Most of patients with focal liver lesions were of adult age group.

2.Radiological imaging with different modalities complete each other and it is important for detection, diagnosis, and guidance for managements.

3.Patients who considered good candidate for curable resection should be rolled out from Fine Needle Aspiration.

4.Most of focal liver lesions which underwent surgery required major liver resection.

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