The patient were suffering from the following clinical criteria.

1. Right hypochondrial pain.
2. Anorexia, indigestion.
3. Disturbance of bowel habits.
4. Hepatomegaly with or without ascites.
5. Jaudice.
6. Persistant low grade pyrexia.
7. The presence of other distant metastases.

They were chosen and subjected to clinical , biochemical radiological, histological and sonographic investigations.

Table (1) Illustrates the sonographic findings.

Bilharzial cirrhosis :

21 cases were diagnosed by ultrasound as bilharzial hepatomegaly due to the presence of linear echogenic areas variable in their thickness and number , most probably according to the type of cirrhosis whether fine or coarse. Moreover, ultrasound can detect splenic enlargement even before clinical detection . Also portal vein and splenic

Table (1)

Lesion	No. of cases	
- Early bilharzial cirrhosis	10	Enlarged liver with coarse pattern of its parenchyma with no ascites.
- Late bilharzial cirrhosis	11	Enlarged or shrunken liver , coarse parenchymal pattern and marked thickened portal vein and enlarged spleen. There may be ascites.
- Chronic infective hepatitis	10	Wide spread fibrosis and areas of regenerating liver tissues are interspersed diffusely giving an increased echo pattern.
- Amoebic liver abscess	1	An echo free region with irregular well defined edge, but at high sensitivity these were low level echoes detected with slight distal some enhancement of the absces
- Pyogenic liver abscess.	2	A transonic area with irregular outline and non specific pattern
- Primary carcinoma of liver.	1	Dense echogenic mass with irregular outline.
- Liver metastasis.	4	Multiple areas of high echogenecity and others of low echogenecity causing abnormal heterogenous pattern. Sonolucent areas in diffuse echogenic liver tissue at high sensitivity is another pattern.
Total	39	

vein could be found dilated as well as splenic enlargement denoting portal hypertension.

Hepatic fibrosis in the studied cases could be classified on clinical sonographic criteria into early and late.

Early hepatic fibrosis was characterised by an enlarged liver with coarse pattern of its parenchyma and no ascites (Figures 2 , 3 , 4 and 5.)

The advanced hepatic fibrosis was characterised by an enlarged or shrunked liver, coarse parenchymal pattern and marked thickening of portal tracts. Advanced cirrhosis may be associated with ascites (Figures 6, 7, 8, and 9).

Chronic infective hepatitis :

Ten cases of chronic infective hepatitis were included in our study. Liver cirrhosis resulting from infective hepatitis is an irreversible alteration of the normal lobular architecture with wide spread fibrosis. Areas of regenerating liver tissues are

interspersed diffusely giving an increased echo pattern in the liver . In some cases the size of the liver was enlarged and in others shrunked (Fig. 10 and 11.)

Liver abscess :

Three cases wer included in our study. Two of them were proved histologically to be pyogenic and the third was amoebic . Fig.(12)was sonographic picture of a male patient aged 50 years and it showed a big transonic area with irregular outline within the hepatic parenchyma seen in the left part of right lobe. It was proved later on to be Pyogenic.(Fig. 13) was of another patient and it showed a huge abscess cavity with irregular wall located in the posterior part of the right lobe of liver. It appeared as an echo free region with irregular margin, but at high sensitivity there were low level echoes detected with a slight distal sonic enhacement of the abscess wall. The abscess was well defined and had very fine internal echoes. It was proved to be amoebic.

Liver neoplasms

Five cases of liver neoplasms were studied by ultrasound. The ultrasonographic diagnosis was proved by biopsy. They were refered as cases of jaundice. One of them was a case of primary carcinoma and was seen as a dense echogenic mass with irregular outline in the right lobe of liver (Fig. 14) The ultrasonographic diagnosis was proved by laparotomy.

The other four cases were of liver metastasis. Their sonographic investigation resulted in the following pictures :

Fig. (15) : Showed a sonographic picture of malignant deposits appeared as multiple areas of high echogenecity and others of low echogenecity causing abnormal heterogenous texture of liver parenchyma.

Fig. (16) : of male patient aged 48 years old showed that the liver parenchyma was completely replaced by metastatic tumours appeared as multiple areas of increased echogenecity.

Sonographic appearance of sonolucent areas in diffuse echogenic liver tissue at high sensitivity was seen in two patients (Fig. 17 and 18).