

# Detection of Upper Abdominal Diseases by Sonogram & Prevalence in the Community (Study of One Thousand Cases)

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## ABSTRACT

1000 cases of positive upper abdominal diseases are evaluated by sonogram for detection of sonographic accuracy and prevalence of disease in the community of which 350 male, 550 female & 100 children. Abnormal findings are seen 420 in biliary systems, 460 in liver-spleen- pancreas and 120 in other upper abdominal organs. Findings are correlate with other investigation and in some cases with surgical intervention shows 95-100 % accuracy. The prevalence of its occurrence in the community is shown below.

**Keywords:** Upper Abdominal Diseases, Sonogram, Biliary Systems.

## INTRODUCTION

Modern medical science has great attraction with imaging for diagnosis and management of patient. Everyone is interested to utilized the opportunity, the wonder of imaging to see the condition of selected part with direct vision. Ultrasonography is the most popular and best diagnostic imaging modality that widely used in medical practice to detect the pathology without any health hazard. It is easily available, non-invasive, cost effective and more specific tools that can be easily applied irrespective of patient condition. Now a days, it is used as routine diagnostic method and can be used repeatedly as clinical desire. Its success is largely depend upon accurate reproduction of anatomical details and acoustic analysis of consistency. Sonogram of upper abdomen reveals pathological findings of a) biliary system- gall bladder, CBD & biliary trees, b) liver, spleen and pancreas and c) other organs of upper abdomen.<sup>1,2</sup>

## MATERIALS & METHODS

1000 cases of positive pathological findings were recorded randomly in different diagnostic center of Dhaka, Gazipur, Munshigonj & Narayanganj from July'1995 to June'2000. Among these 350 male, 550 female & 100 children. These patients are refereed by different level of practitioners from RMP to specialized physician and surgeon. The chief complaint was upper abdominal pain in almost all cases. Some other associate complains were vomiting, upper abdominal mass, abdominal discomfort, and respiratory distress etc. were found singly or multiple within a group of patients. All patients were examined under proper preparation and appropriate technique. Sonographic findings

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are correlate with other investigations and in some cases with surgical intervention shows 95- 100 % accuracy.

## RESULTS AND DISCUSSION

Findings are recorded randomly for analysis of disease prevalence in the community. Ultrasonography is considered as first imaging modality for evaluation upper abdominal disease and is widely used to differentiate medical and surgical management and subsequent follow-up in course of management.

Stone is commonly diagnosed by ultra-sonogram as echogenic structure with posterior acoustic shadow. GB stones are usually multiple & often numerous. Sonogram is the best of choice.

Acute cholecystitis can diagnosed as thickened smooth GB wall with sign of inflammation, a thin layer of collection in GB fossa. It may be acalculus. Sometimes stones obstruct the cystic duct & produce dilated GB, cholecystitis, sludge in the GB & empyema GB. Stones may be present in CBD in absence of GB and operated GB. It may combinely be seen in CBD & GB. In CBD it may obstructed biliary flow, so biliary channel are dilated. Round worm in the GB or biliary tree appears as a linear or spiral echogenic structure without casting posterior acoustic shadow. This structure is movable if it is alive. Growth in GB and CBD appear as an echogenic mass without posterior acoustic shadow. Sometimes inflammatory mass in the GB produced by prolonged irritation of stones may be resembled cholelithiasis with GB mass. In case of growth in CBD, biliary trees are also dilated grossly. Enlargement of liver and spleen are best seen in sonogram. It may be associated with internal or external cause. External

causes are evaluated by uniformity of tissue texture. Internal causes are evaluated by presence of internal focal SOL or diffuse lesion.

**Table 1: Abnormal findings of GB.CBD & Biliary trees**

Pathological findings	n	%
Stone in G.B.	220	22 %
Stone in CBD	32	3.2 %
Stone in GB & CBD	18	1.8%
Growth in GB	36	3.6 %
Growth in CBD	04	0.4 %
Biliary ascariasis	10	1.0%
Acute cholecystitis	36	3.6 %
Dilated GB + sludge	44	4.4 %
Empyema of GB	18	1.8%
Absence of GB	02	0.2 %

**Table 2: Abnormal findings of Liver, Spleen & Pancreas**

Pathological findings	n	%
Hepatomegaly	164	16.4 %
Liver abscess	78	7.8 %
Cirrhosis of liver	48	4.8 %
Cyst in the liver	20	02%
Ca- Liver	21	2.1 %
Metastasis in liver	25	2.5 %
Splenomegaly	44	4.4 %
Cyst in the spleen	02	0.2 %
Hepato-splenomegaly	36	3.6 %
Cyst in the pancreas	03	0.3 %
Mass in the pancreas	17	1.7%
Left sided liver	02	0.2 %

**Table 3: Abnormal findings of other U-abdominal organ**

Pathological findings	n	%
Hypertrophic pyloric stenosis	28	2.8%
Aortic aneurism	02	0.2 %
Dilated portal vein	03	0.3 %
Dilated hepatic vein	02	0.2 %
Enlarged para-aortic lymph node	03	0.3 %
Ascitis (only)	22	2.2 %
Pleural effusion	32	3.2 %
Ascites + effusion	18	1.8%
Pericardial effusion	06	0.6 %
Mass in the stomach	04	0.4 %

Simple cyst may be present in liver, spleen or pancreas- that may be diagnosed as echo-lucent smooth margined focal SOL. Polycystic disease may be evaluated by presence cyst in the liver, spleen or pancreas associated with cyst in the kidney. Hydatid cyst can be diagnosed by its characteristic appearance as cyst within a cyst. Sonogram is the best method of detection of cystic diseases. Liver abscess is commonly seen and diagnosis is made by large focal SOL of mixed echogenicity with thick irregular margin and may be septet in nature within enlarged liver. Sonoguided FNAC confirms the diagnosis. Cirrhosis of liver is usually seen as a loss of uniformity in tissue texture, tissue echogenicity is coarse & slightly increased, shrinkage of liver and associated with splenomegaly & ascites. Ca- liver is usually a large focal SOL of slightly echogenic in texture. It may also be low,

high or mixed echogenic mass with almost clear border. Metastasis may reveal single or multiple small coined SOL of thin clear margin & characteristic bull's eye appearance. Sonoguided FNAC always confirmed the diagnosis.

Mass in the pancreas are more common in the head (70%) than body and tail (30%). This may reveals as a focal SOL of slightly increased echogenicity usually irregular in outlined. Congenital hypertrophic pyloric stenosis may be diagnosed by ultrasonogram as a conical mass at the pyloric part of stomach with persistent narrowing and elongation of pyloric canal. It is better seen in 5.0 MHz probe. Mass in the stomach appears as irregular mass of soft tissue echogenicity usually located at the antral part and greater curvature of the body. Enlarged para-aortic lymph node is seen as oval smooth mass of uniform echotexture at the side of aorta. Aortic aneurysm is seen as a pulsatile oval cystic area continuous with the aorta. Ascites is best seen in ultrasonogram as a collection of fluid within the peritoneal cavity in which intestinal coils are moved freely. Some times ascitis is associated with cirrhosis, hepato- splenomegaly, or mass in the gut.

Pleural effusion is best seen in sonogram even in a very small amount as a collection of fluid in the costo phrenic angle. Pericardial effusion may be seen as a incidental finding that shows collection of fluid within the pericardium.

**CONCLUSION**

With some unavoidable limitation, sonogram is still considered the best choice for evaluation of upper abdominal pathology. Its accuracy depend on proper preparation of patient, condition of sonogram machine & probe and experience of sonologist. Positive findings should always be considered more informative & bear diagnostic value than negative. It provides guide lines for further procedure for confirmation of diagnosis. It also provides guide for FNAC for accurate collection & aspiration pleural, pericardial and ascitic fluid and pas. So, sonogram should be considered first by all for benefit of patients.

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