A Retrospective Study of Sonographic Records in the Detection of Hepatic Hilar Mass in Patients with Cholestatic Jaundice

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ABSTRACT

Ultrasonography is the primary modality to conform the presence of biliary obstruction. Obstruction in biliary tree may be extrahepatic or intrahepatic and bile duct obstruction may be due to variety of malignant and benign masses. The commonest cause of obstructing mass is cholangiocarcinoma. Malignant masses causing biliary obstruction has a wide spectrum of radiological appearances.

Objective of study was to identify the magnitude of mass lesion causing biliary obstruction at hepatic hilar region and effectiveness of ultrasonography in the diagnosis of the hilar obstruction.

This study was undertaken in Bir Hospital. Retrospective analysis of one year record was done of those cases admitted for endoscopic retrograde cholangiopancreatography followed by abdominal ultrasonography.

Out of total 73 patients of obstructive biliary pathology, 21 (28.70%) of the patients diagnosed biliary obstruction due to mass lesion and among those 21 patients with mass lesion, the level of obstruction in hepatic hilum was reported in 52.40% (N=11). Abdominal USG is capable in diagnosing tumoral bile duct obstruction. For definite diagnosis the direct fine needle aspiration biopsy or bile sampling for cytology has to be done either by PTC or ERCP.

Key words: Ultrasonography, obstruction, bile duct, cholangiography.

INTRODUCTION

Biliary disease presenting with jaundice is common clinical problem and may be due to medical or surgical aetiology. The choice and sequence of imaging in patients with biliary disease is based on the clinical symptoms and signs as well as findings on initial laboratory test[1]. Symptoms of obstructive jaundice include nausea, vomiting, epigastric pain, weight loss, pruritus and dark urine, white stools, steatorrhoea and hepatomegaly are common[2]. Painless jaundice is the hallmark of carcinoma and history of surgery is supportive to post-operative stricture[3]. Benign hepatic tumors, cysts or ductal polyp may obstruct the bile ducts and may cause jaundice and palpable mass.

Patients typically present with obstructive jaundice, often with abdominal pain and fever in case of cholangitis[4]. Loss of appetite and loss of weight is the

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clinical sign of carcinoma On physical examination one third of the patients have hepatomegaly and up to 10% demonstrate a discrete mass in the right upper quadrant separate from the liver, representing a distended gall bladder. Splenomegaly secondary to biliary cirrhosis and portal hypertension from tumor invasion of the portal vein occur in up to 40% of patients late in the disease[5]. Usually biochemical tests show greater elevation of the alkaline phosphatase and GGTP compared with the aminotransferases[6]. Neoplasm arising in the gall bladder, bile ducts, ampullary region, pancreas and duodenum are the sites of biliary obstructive neoplastic diseases Less commonly the duct may be obstructed by tumours or node of lymphoma. Although benign cause may be present but the majority of tumors are malignant. Conditions that increase the risk of developing risk of bile duct cancer include ulcerative colitis, sclerosing cholangitis, choledochal cyst. Bile duct cancer can occur two to three decades earlier than expected in patients with ulcerative colitis or choledochal cyst[7].

MATERIALS & METHODS

One year ultrasonography record of patients those examined with ERCP in gastrology unit in Bir Hospital was analyzed retrospectively. USG record of total 72 patients was tabulated as obstruction secondary to mass and obstruction due to other causes. Among those patients with mass lesion hilar obstruction was further identified and the data was interpreted.

RESULTS

Total number of cases in this study was 73, male 20 and female 53. Patients between 14 to 78 years were examined by ultrasonography and ERCP. The mean age was 40.8 year. Out of 73 patients 28.70% (N=21) of the cases was diagnosed biliary obstruction due to mass lesion. Out of those 21 patients with mass lesion, obstruction in hepatic hilam was reported in 52.40% (N=11). Female population was slightly higher (57.10%) than male (M=9, F=12).

DISCUSSION

Investigation of patient with obstructive biliary disease may not be complete with single imaging modality and may need the different imaging methods. Radiological study should begin with ultrasound to detect the cause and level of obstructive pathology[8]. Ultrasonography is the method of choice in screening the case, and is the first imaging test for patients with jaundice to conform the presence of biliary obstruction[9]. Ultrasonography is inexpensive, quick to evaluate, absence of ionizing radiation, and this method is highly sensitive for detecting biliary obstruction[10,11]. However it is less sensitive in patients those who are fairly obese and abundant bowel gas. Clicinal information obtained from ultrasonography depends greatly upon the skill of the operator who performs the study. Positive screening study is often further evaluated with a more specific sensitive test such as ERCP or PTC. Other non invasive imaging techniques to evaluate mass lesion include CT, MRI and nuclear medicine studies. If the direct evaluation of the bile duct is necessary, imaging with ERCP or PTC may be performed. ERCP and PTC are invasive, but they provide the greatest anatomic and mucosal details of the biliary duct. These techniques may produce higher rate of complications but are useful for collecting bile sample to evaluate malignant cells.

In ERCP the ampullary part is visualized directly and radio opaque contrast media is used for imaging of biliary ducts. In PTC a needle is passed in the dilated bile duct through the liver and similarly the contrast media is injected in the bile duct to see the biliary tree, but this method is more commonly performed to drain biliary obstruction when the biliary system cannot be assessed or drained by ERCP. CT is very sensitive and specific for calcified biliary ductal stone[12], and may detect biliary wall thickening, mass and pancreatic mass or adenopathy[1].

Neoplastic obstructive biliary pathology may be intra or extra hepatic. Bile ducts obstructions may be due to variety of benign and malignant causes, in which the malignant pathology is common[13]. The commonest cause of obstructing mass is cholangiocarcinoma. Cholangiocarcinoma is a malignant neoplasm that arises from cholangiocites which form the epithelial lining of bile ducts[14]. Cholangiocarcinoma can arise from any point in the biliary epitheliam from intrahepatic biliary radicals to the ampmulla of Vator[15]. Cholangiocarcinoma may be intrahepatic or extrahepatic types. Perihilar cholangiocarcinoma which arise at the confluence of the hepatic ducts known as Klatskin tumor[16].

Clinical presentation of cholangiocarcinoma depends on the level of obstruction. There are various modalities applied in the diagnosis of cholangiocarcinoma . Major questions asked to these modalities are the site and possible cause of obstruction, extent of disease locally and evidence of metastasis[13]. Ultrasonography is requested first in those cases suspected biliary obstruction. This primary modality is confirmatory to detect biliary obstruction and is 90-100% accurate in detecting bile duct dilatation[17]. The most common sonographic finding is generalized biliary ducts dilatation, although focal asymptomatic dilatation or focal dilatation of the intrahepatic duct can be seen. The tumor mass is usually small and extends along the bile ducts by intramural invasion and hepatic metastasis can be identified[9]. The most common site of tumor occurrence in primary extrahepatic biliary duct cancer is in the common bile duct followed by common hepatic duct, hepatic duct bifurcation and cystic duct[18]. Lobar atrophy with dilatation of intrahepatic bile ducts can be seen when one of the hepatic duct is obstructed by the tumor mass. Ultrasonography is capable in diagnosing tumoral bile duct obstruction in 90-95% of the patients[19].

The tumoral obstruction in hepatic hilam is common and it comprises up to 60%. The hilar obstruction secondary to neoplastic pathology is most commonly seen in elderly patients with 65% older than 65 years[20]. In our study with total 73 patients admitted for ERCP, the cause of biliary obstruction diagnosed by ultrasound was mass in 28.70% (N=21) and among those 21 patients the site of obstruction was found at hepatic hilam in 57.10% (N=12). Age of the patients with hilar obstruction was above 60 in 58% (N=11). Sonographic diagnosis with hilar obstruction with mass or non identified mass (N=1) were reported as Klatskin tumor or Klatskin mimicking tumor.

Clinical presentation and imaging modality is not always helpful to differentiate between hilar cholangiocarcinoma and mimicking lesion. Pathological diagnosis of a patient with peripheral, hilar mass can be made by the cells obtained by percutaneous biopsy under USG or CT guidance. Bile sampling for cytology can be done in conduction of ERCP or PTC. Pathological diagnosis may not be feasible in some patients, the diagnosis may be based on a composite criteria. There are no specific tumor markers for cholangiocarcinoma, level of cancer antigen 19-9, carcinoembryonic antigen, cancer antigen 125 may be abnormal[20].

CONCLUSION:

The commonest cause of hilar obstruction in elderly patients is hilar cholangiocarcinoma and the primary imaging modality is still ultrasonography for many years. Imaging modalities are not confirmatory or specific in the diagnosis of hepatic hilar mass, so the direct fine needle aspiration biopsy or bile sampling for cytology is recommended either by PTC or ERCP. If these procedures are not feasible, the diagnosis may be based on a composite criteria.

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