

ULTRASONOGRAPHY IN THE DIAGNOSIS OF OBSTRUCTIVE JAUNDICE

K. Ahmed and Ferdous Ara, Institute of Nuclear Medicine (INM), Institute of Post-graduate Medicine and Research (IPGMR), Dhaka, BANGLADESH.

SUMMARY

Ultrasonography was employed in the diagnosis of obstructive jaundice. In a group of 38 patients who were studied, Ultrasonography was found to be reliable in confirming the diagnosis. In majority of the cases it was also found to be reliable in revealing the cause of obstruction. Nineteen of these patients were examined by percutaneous transhepatic cholangiography (PTC) and there were 100 per cent correlation with Ultrasonography. Twelve of these patients underwent operation and the findings were in good agreement with those of Ultrasonography.

It is therefore, concluded that as a noninvasive technique, Ultrasonography is the first method of choice in the diagnosis of obstructive jaundice.

INTRODUCTION

In the diagnosis of obstructive jaundice, clinical and biochemical examination are not always conclusive. Radiological examination using contrast media are not advisable in the presence of jaundice. To aid in the diagnosis of obstructive jaundice, various techniques are used. These include PTC (Hasan et al, 1983), Radionuclide Cholangiography and Ultrasonography and Computerised Axial Tomography (McCready, 1980). Of all these techniques, Ultrasonography has been found to be the first method of choice for investigation of hepato-biliary system disorders (Taylor et al, 1974). One of the greatest advantage of Ultrasonography is that it can reveal the case and site of obstruction and thus, it has been considered as the method of choice for the diagnosis of obstructive jaundice (Sample, 1979).

On the basis of the above facts, a study was undertaken at the INM, IPGMR to evaluate the usefulness of Ultrasonography in the diagnosis of obstructive jaundice.

PATIENTS AND METHODS

A total number of 129 patients with jaundice were studied. These patients were sent mainly from IPGMR, but there were few from Dhaka Medical College Hospital, Combine Military Hospital and private clinics. These patients had the history of jaundice which could not be alleviated by conservative treatment. From the clinical history

and laboratory findings, 38 patients were provisionally diagnosed as cases of obstructive jaundice. These patients were examined with gray scale Ultrasonography at INM. The preparation needed for these patients was 8-12 hours fasting and mild laxative in the night before the examination. Nineteen of these patients were examined by PTC through the collaboration of the department of Gastroenterology, IPGMR. Twelve of these patients underwent operation either to remove the cause of obstruction or to create a bypass for the drainage of bile.

RESULTS

With the help of Ultrasonography, dilated gall bladder and biliary tree were revealed in 37 of 38 patients. Of them, nineteen patients underwent PTC examination also showed similar dilation of biliary tree and thus, there were 100% correlation. With Ultrasonography, out of 38 patients there were calculi in 28 and suspected soft tissue lesion in the porta hepatitis and head of the pancreas in 10 cases. Twelve of these patients were operated and obstruction was confirmed. In one patient, while Ultrasonography revealed obstructive jaundice, a needle biopsy of the liver was done and it was found to be a case of cirrhosis.

DISCUSSION

The Ultrasonography can reveal the dilatation of the intrahepatic biliary tree (Sample, 1979). In normal condition, the intrahepatic biliary tree can hardly be visualize. However, if there is any obstruction in the bile duct, the intrahepatic biliary system could be clearly seen. If the obstruction is in the common bile duct below the level of the cystic duct or in the ampulla the distension of the gall bladder and dilatation of the bile duct can be seen (Parulekar, 1979). The cause of obstruction and also site of obstruction can also be revealed by Ultrasonography (Sandus, 1980). This is in close agreement with the present study where in majority of the cases, the cause and site of obstruction have been revealed. The presence of bright echogenic structure casting shadow indicates the presence of stone in the bile duct or in the ampulla or it indicates the calcification of head of the pancreas. Similar observations were made in the present study. The presence of an irregular area in the region of the porta hepatitis indicates soft tissue lesion in the bile duct or in the gall bladder. Similar observations were also made in the present study. Further, the soft tissue or cystic lesion in the liver or head of the pancreas causing obstruction in the bile duct can also be localised. In the absence of the soft tissue mass or calculus, a dense irregular area in the region of porta hepatitis usually indicates fibrosis (Cosgrove, 1978). Therefore, in addition to the diagnosis of obstruction, Ultrasonography can reveal the site and cause of obstruction (Kami et al, 1979). The observations made in the present study are in good agreement with those obtained in similar studies in other laboratories (Sample, 1979; Sandus, 1980 and McCready, 1980).

Jaundice due to biliary obstruction requires surgical treatment and hence confirmation of obstruction is important. In addition to the clinical and laboratory investigations, Ultrasonography has been found to be a safe, noninvasive and accurate method for the diagnosis of obstructive jaundice. Its correlation with PTC is 95 to 100 per cent with the advantage that this does not have any hazard to the patients and can reveal the nature of obstruction with reasonable accuracy. Therefore, the first investigation of choice in patients presenting with jaundice is undoubtedly ultrasound (Grossman, 1978). By this method liver can be evaluated for the presence or absence of space occupying lesions (Broderick et al, 1970), the bile ducts can be examined for dilatation, the gall bladder can be imaged and the presence of stone can be determined. Moreover, the common bile duct can often be seen and the pancreas examined for the presence of a tumour or pancreatitis (Arger et al, 1979).

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