



Surgery

TO STUDY THE DISCREPANCY BETWEEN ULTRASONOGRAPHIC AND INTRAOPERATIVE FINDINGS IN CASES OF GALL STONE DISEASE UNDERGOING CHOLECYSTECTOMY

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ABSTRACT Gall stone disease is one of the most common presentations in the department of surgery at our institute. All patients are advised to undergo abdominal ultrasonography. Ultrasound examination confirms the diagnosis of cholecystitis with cholelithiasis. Most of these patients undergo cholecystectomy in the same institute. The present study aimed to study the discrepancy between ultrasonographic and intraoperative findings in 100 cases of cholecystitis undergoing small incision or laparoscopic cholecystectomy in the department of surgery at F.H.M.C, Agra, Uttar Pradesh, India. This is a medical college hospital situated in rural Uttar Pradesh.

KEYWORDS : Cholecystitis , Ultrasonography, Cholelithiasis, Cholecystectomy

INTRODUCTION

Cholelithiasis forms a significant burden for health care systems worldwide¹. It affects approximately 10% of adult population in Asian countries^{2,3}. It is becoming a significant cause of morbidity leading to hospital admissions everywhere. Patients present with right upper abdominal pain or pain epigastrium after taking fatty food, dyspepsia, fever and leucocytosis in acute cholecystitis. Murphy's sign is positive in most cases of chronic cholecystitis. Abdominal ultrasonography is the most frequently used diagnostic method to confirm the presence of cholelithiasis and cholecystitis. It is a low cost procedure which is easily available to aid in the diagnosis. It is free of dangers of ionizing radiations and is non-invasive⁴. It can also predict surgical difficulties. Major disadvantage of ultrasonography is that it is user dependent. In the present study, we aim to highlight the discrepancies between preoperative ultrasonography and intraoperative findings in patients undergoing cholecystectomy.

MATERIAL AND METHODS

This study was carried out in the department of general surgery at F.H.M.C Agra, Uttar Pradesh, India which is a medical college hospital catering mainly to rural population. Patients diagnosed with cholelithiasis and cholecystitis as by abdominal ultrasonography and undergoing open small incision or laparoscopic cholecystectomy from June 2017 to December 2017 were included in this study. A total of 100 patients were randomly included in this study. Abdominal ultrasound was done by qualified radiologists in the department of radiology, F.H.M.C Tundla. Preanaesthetic check-up was done one day prior to the surgery. Cholecystectomy was the most common elective surgical procedure in this institute. Prior informed consent was taken from all the patients. The information was collected on a performa. Patients with suspected gall bladder or pancreatic carcinoma, stones in common bile duct, unfit for surgery on medical grounds were excluded from the study. The data collected was compiled and assessed. The data collected at the time of surgery was considered more reliable. Note was made of intraoperative complications such as stone spillage, gall bladder perforation, haemorrhage, bile duct injury, infection etc. Prior permission was taken from the ethical committee.

RESULTS

A total of 100 patients undergoing cholecystectomy from June 2017 to December 2017 in the department of general surgery at Agra, Uttar Pradesh, India were included in this study. All these patients were symptomatic and were diagnosed to have cholecystitis and cholelithiasis preoperatively. Presenting symptoms and signs were right upper quadrant or epigastric pain, dyspepsia, bloating, vomiting, fever, leukocytosis and tenderness in right hypochondrium in most patients. Cholelithiasis and cholecystitis is the most common cause of elective admissions in this hospital and cholecystectomy is the single most common elective general surgical procedure done in this institution. The age of patients ranged from 14 years to 69 years. There were 18 male and 82 female patients who underwent cholecystectomy in this group. According to ultrasonographic findings, gall stones were present in all 100 patients of this group, stones were solitary in 28 cases and multiple in the rest, gall bladder thickness was normal in 88 cases and increased above 3mm in 12 cases, diameter of CBD (common bile

duct) was normal in 96 and increased in 4 cases, gall bladder was distended in 84 and contracted in 16 patients. On ultrasonography, hepatomegaly was present in 16 cases and there was pericholecystic collection / adhesions in 8 patients. Intraoperative findings showed presence of gall stones in all 100 cases while stones were solitary in 21 cases and multiple in 79 cases, gall bladder wall was thickened in 34 cases, gall bladder was contracted in 38 cases with pericholecystic collection/adhesions present in 21 cases. CBD was dilated in 8 cases and there was hepatomegaly in 24 cases.

DISCUSSION

Gall stone disease is one of the commonest diseases worldwide. In the U.S., 10–20% of the adult population has gall stones⁵. Majority of people with gall stones remain asymptomatic but 2–5% of the people with gall stones experience symptoms each year. The highest prevalence of gallstone disease is noted in Native American Indians in Arizona. In the Asian countries, cholelithiasis affects approximately 10% of the adult population and has increased in recent years. Its prevalence varies and has been reported as 2 to 29% in India⁶. Gall bladder diseases are frequent in Northern India^{7,8}. Highest incidence of gallstone disease is found in the population between 41 to 50 years of age. Females are four times more commonly affected than males. The risk factors for developing gall stones are female gender, multiparity, obesity, increasing age, diabetes mellitus, use of oral contraceptives, dyslipidemias, unsafe drinking water and alcohol consumption⁸. Female patients in the reproductive age group have an increased risk for developing gallstones due to elevated estrogen levels causing supersaturation of bile with cholesterol. Cholecystectomy is the most common elective abdominal surgical operation in this institution. Ultrasonography of the abdomen is the modality of choice for the detection of suspected gall bladder disease⁹. Gallstones are seen as mobile echogenic foci causing posterior acoustic shadows and sometimes a wall-echo-shadow sign if gallbladder is filled with gallstones¹. Ultrasound imaging signs of acute cholecystitis are gallbladder wall thickness more than 3 mm, wall edema, gallbladder distension more than 40mm, positive sonographic Murphy's sign and pericholecystic fluid. Contracted gallbladder on sonography depicts chronic cholecystitis. It is an easily available, low cost and non-invasive diagnostic procedure which is a boon for rural setups like ours. The disadvantage of ultrasonography is that it is highly user dependent. We found significant discrepancy between ultrasonological and intraoperative findings in patients undergoing cholecystectomy for cholecystitis with cholelithiasis.

In the present study we found that the incidence of gall stones was significantly more in female patients which is in accordance to previous studies. Intraoperatively gallstones were found to be present in all patients undergoing cholecystectomy. Incidence of multiple stones was more than solitary stones. In 4 patients who were thought to have solitary calculus on ultrasonography, stones were found to be multiple intraoperatively. Increased gall bladder wall thickness, contracted gall bladder, presence of adhesions/pericholecystic fluid and increased CBD diameter were noted to be associated with increased intraoperative difficulty. This is in accordance with other studies^{10,11}.

CONCLUSION

Ultrasonography of the abdomen is the investigation of choice for cholecystitis with cholelithiasis. It was found that ultrasonography showed 100% accuracy for presence of gall stones but not for number of gallstones or the prediction of difficulty during surgery. This finding is in accordance with other studies⁴. Moreover, ultrasound examination is highly user dependent. However, as ultrasonography is non-invasive and highly cost effective, it remains the mainstay preoperative diagnostic procedure for cholelithiasis.

TABLE 1

SEX	NO OF PATIENTS
MALE	14
FEMALE	86

TABLE 2

ULTRASONOGRAPHIC FINDINGS		
FEATURES		NO OF PATIENTS
GALL STONES	PRESENT	100
	ABSENT	0
NO OF STONES	SINGLE	28
	MULTIPLE	72
SIZE OF LIVER	NORMAL	84
	HEPATOMEGALLY	16
SIZE OF GB	DISTENDED	84
	CONTRACTED	16
GB WALL THICKNESS	NORMAL	88
	THICKENED	12
CBD DIAMETER	NORMAL	96
	INCREASED	4

TABLE 3

INTRA OPERATIVE FINDINGS		
FEATURES		NO OF PATIENTS
GALL STONES	PRESENT	100
	ABSENT	0
NO OF STONES	SINGLE	21
	MULTIPLE	79
SIZE OF LIVER	NORMAL	76
	HEPATOMEGALLY	24
SIZE OF GALL BLADDER	DISTENDED	62
	CONTRACTED	38
GB WALL THICKNESS	NORMAL	66
	INCREASED	34
CBD DIAMETER	NORMAL	92
	DIALATED	8
ADHESIONS	PRESENT	21
	ABSENT	79

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