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LAPAROSCOPIC CHOLECYSTECTOMY;

To assess various intra operative predictive factors which are responsible for difficulty in performing laparoscopic cholecystectomy.

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ABSTRACT… Objective: To assess various intra operative predictive factors which are reponsible for difficulty in performing laparoscopic cholecystectomy. **Study Design:** Prospective observational study. **Place and Duration of Study:** This study was out in Surgical department, Liaquat University Hospital Jamshoro, Dow International Hospital Karachi and Jinnah Postgraduate Medical Center Karachi, from October 2012 to October 2013. **Methodology:** This study consisted of hundred patients. Detailed History was taken from all the patients with special regard to the abdominal pain or pain in right hypochondrium, lump in right hypochondrium , vomiting , dyspepsia and fever. Detailed Clinical examination of the patient was done . Site of right hypochondrium was especially examined for assessment of murphy's sign , palpable mass , visceromegaly and recorded in proforma. Systemic review was also done to see any co-morbidity. Ultrasound of abdomen as diagnostic modality and for assessment of gallstone disease. Inclusion criteria were all diagnosed patients of complicated and uncomplicated gall stone disease of any age and either any sex admitted on the basis of history , clinical examination and investigations specially ultrasound of abdomen. Exclusion criteria included unfit patients for general anesthesia , Pregnant ladies due to risk of foetal loss, patient with carcinoma of gall bladder , patient with acute pancreatitis and Patient with obstructive jaundice. Follow up of all these patients was done. Results were prepared with help of tables and graphs. Data was analyzed through SPSS software. **Results:** Out of 100 patients included in this study 79 were female (79%) and 21 male (21%); with female to male ratio of 3.76:1. There was wide variation of age ranging from a minimum of 20 years to 65 years . The mean age was 46.28+7.20 years. Symptoms of patients presented with pain in RHC 87% , pain in RHC along with pain in epigastrium 78%, Nausea & Vomiting 15%, dyspepsia 50% and fever in 10% of cases. Ultrasound examination revealed single stone in 20(20%) patients where as multiple stones in 80(80%) patients. Operative findings revealed severe adhesions in calot's triangle in 15(15%) patients where as Severe & tight adhesions around gallbladder in 16(16%) patients, Obscured anatomy in calot's triangle in 11(11%) patients and Intrahepatic gallbladder in 9(9%) patients. Complications were Pain in 33(33%) patients, Bleeding in 1(1%) patients, Intraperitoneal collection in 2(2%) patients, Wound Sepsis in 5(5%) patients and Biliary leakage in one case. **Conclusions:** In conclusion our study revealed that are numerous conditions which make the difficult laparoscopic cholecystectomy like severe adhesions in calot's triangle 15%, Severe & tight adhesions around gallbladder 16%, Obscured anatomy in calot's triangle 11%, Intrahepatic gallbladder 9% and adhesions around gallbladder 26%.

Key word: Laparoscopic cholecystectomy, Operative predictive factors.

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INTRODUCTION

Gallstones are the most common biliary pathology. The prevalence of gallstones in the United States is around d 10% to 15 % and in Europe around 18.5%. Although the data from within the country in scanty, but the breakthrough of the admission data from Karachi shows that it is the 3rd commonest cause of admission accounting for 16% and 14%[1]. Gallstones affect about 10 % of people in the Western world, more

than 80 % of these people are asymptomatic[2]. Traditional open cholecystectomy has long been accepted as gold standard treatment of gallstones[3]. Revolution in the treatment of gallstones came in 1987 when first laparoscopic cholecystectomy was performed[4]. Since then there was no turning back and laparoscopic cholecystectomy became an established procedure due to less pain, short hospital stay, minimum morbidity and accelerated postoperative recovery after cholecystectomy[4,5,6]. In Pakistan first laparoscopic cholecystectomy was performed in 1991[7].

There are various pre or peroperative factors that make laparoscopic cholecystectomy a technically difficult procedure. These include acute cholecystitis, empyema gall bladder, gangrenous cholecystitis, fibrosed gallbladder, severe adhesions in calot's triangle and intrahepatic gall bladder[8,9,10]. These problems are difficult to assess preoperatively but are usually encountered during laparoscopic cholecystectomy and therefore responsible for major difficulty in performing the surgery. The most important predictive factor of preoperative adhesion formation is a due to of previous abdominal surgery which ranges from 67%–93% as given in the literature[11,12,13].

Apart from these factors, there are various other conditions where laparoscopic cholecystectomy may be very challenging which include morbid obesity, bleeding diathesis, portal hypertension (cirrhosis of liver) and pregnancy[14,15].

MATERIAL & METHODS

This study was conducted at Surgical department, Liaquat University Hospital Jamshoro, Dow International Hospital Karachi and Jinnah Postgraduate Medical Center Karachi, from October 2012 to October 2013. Detailed History was taken from all the patients with special regard to the abdominal pain or pain in right hypochondrium, lump in right hypochondrium , vomiting , dyspepsia and fever. Detailed Clinical examination of the patient was done .Site of right hypochondrium was especially examined for assessment of murphy's sign , palpable mass , visceromegaly and recorded in proforma. Systemic review was also done to see any co-morbidity. All patients underwent for base line and specific investigations especially ultrasound of abdomen as diagnostic modality and for assessment of gallstone disease. Inclusion criteria were all diagnosed patients of complicated and uncomplicated gall stone disease of any age and either any sex admitted on the basis of history , clinical examination and investigations specially ultrasound of abdomen. Exclusion criteria included unfit patients for general anesthesia, Pregnant ladies due to risk of foetal loss, patient with carcinoma of gall bladder , patient with acute pancreatitis and Patient with obstructive jaundice.

RESULTS

100 cases of gallstone disease were operated through laparoscopic cholecystectmy procedure. Out of 100 patients included in this study 79 were female (79%) and 21 male (21%); with female to male ratio of 3.76:1. Minimum of 20 years to 65 years . The mean age was 46.28+7.20 years (Fig No.1).

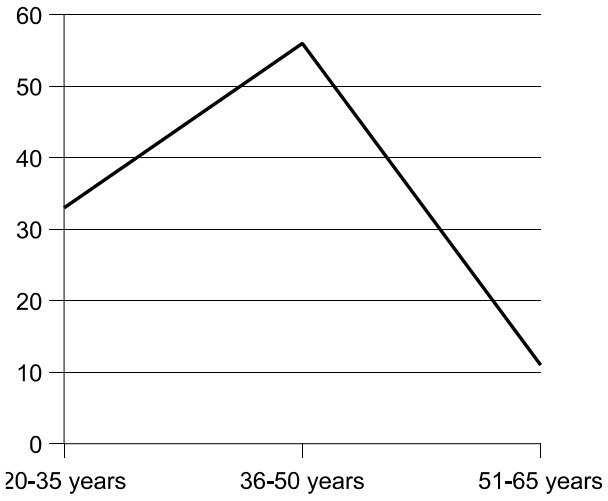

Fig-1. Age distribution

Fig-1. Age distribution

The patients presented with pain in RHC 87% , pain in RHC along with pain in epigastrium 78%, Nausea & Vomiting 15%, dyspepsia 50% and fever in 10% of cases (Fig No 2).

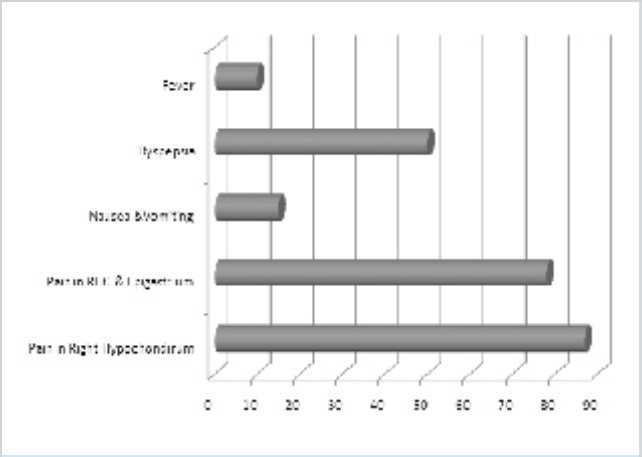

Fig-2. Symptoms of patients

The ultrasound examination revealed single stone in 20(20%) patients where as multiple stones in 80(80%) patients, Impacted stone at the neck of gallbladder in 2(2%) Patients, thick wall gallbladder in 51(51%) patients, empyma gallbladder 2(2%) patients, mucocele 1(1%) Patient, contracted gallbladder 23(23%) cases and adhesions around gallbladder in 35(35%) patients. Operative findings revealed severe adhesions in calot's triangle in 15(15%) patients where as Severe & tight adhesions around gallbladder in 16(16%) patients, Obscured anatomy in calot's triangle in 11(11%) patients and Intrahepatic gallbladder in 9(9%) patients (Fig No.3).

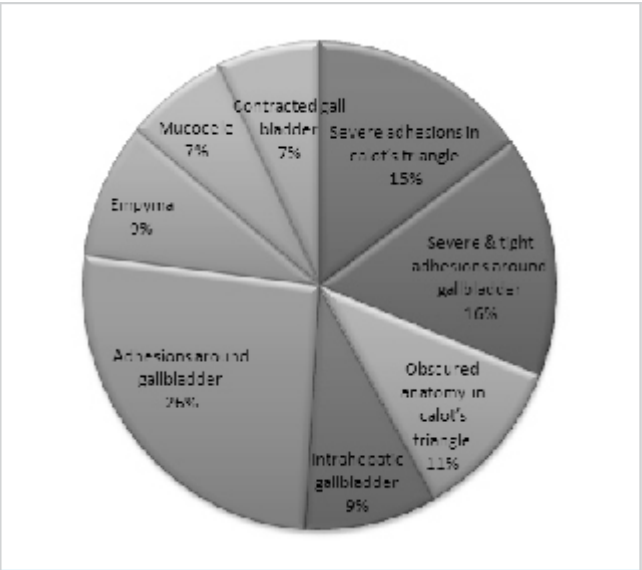

Fig-3. Operative findings

DISCUSSION

Laparoscopic cholecystectomy is one of the most common procedure being performed by the general surgeons all over the world. Incidence increase of gallstones are collective with the lack of health care facilities and the lack of knowledge on the part of the patient contributes to the very common presentation of the patient in the advanced stage of the disease16. With more and more efforts in the field of laparoscopy, the most complicated cases contraindicated for a few years now been resolved laparoscopically. To achieve proficiency in minimal access techniques, the surgeon must develop skills to interpret the three-dimensional environment as a two-dimensional image and learn how to do familiar tasks (eg, sutures) with known means in an unknown way[17]. In addition, the doctor never touches the tissue transferred from his hands. This loss of touch input is an important factor in creating the technical minimum acces difficult to learn. The aim of this study was to share our experience of the intra operative predictive factors responsible for difficult laproscopic cholecystectomy[18].

It was observed in the current study that out of 100 cases 79% were females and 21% males with female to male ratio of 3.76:1. Mohan H indicates that 1,100 cases, 952 were females and 148 males with female to male ratio of 6.4:1[19], which is higher than in this study.

In the present study, the maximum recorded age was 65 years and at least 20 years, in which the maximum number of cases in the third decade and 4 and the lowest number was recorded in 6 decade and beyond. In a study by Memon MR average age of patients who underwent laparoscopic cholecystectomy was 45 years[20], where a middle-aged patients, 46.28+7.20 years in our study. Mostly patients presented with pain in RHC 87% , pain in RHC along with pain in epigastrium 78%, nausea & vomiting 15%, dyspepsia 50% and fever in 10% of cases. However in study of Laghari AA et al[21] the patients presented with upper abdominal pain either in right hypochonderum (51.67%) or in right hypochondrium and epigastrium (29.17%) or

epigastrium (19.17%).

Ultrasound is a routine examination in daily practice and it is the first line of imaging modality for assessing the patients with (e.g. abdominal pain) , and for screening of the asymptomatic patients[22]. Ultrasound is widely accepted for the diagnosis of biliary diseases and has the greatest sensitivity for the diagnosis of cholecystolithiasis (approximately 99%) as compared with other imaging modalities. It is also of great help in the diagnosis of the acute and chronic cholecystitis and in the assessment of intra- and extrahepatic bile duct dilation. In our study ultrasound examination revealed single stone in 20 (20%) of patients where as multiple stones in 80 (80%) of patients. Impacted stone at the neck of gallbladder in 2%, thick wall gallbladder in 51%, empyma gallbladder 2%, mucocele 1%, contracted gallbladder 23% and adhesions around gallbladder in 35% of patients. Ultrasound finding given by Ji W et al[23] in their study shows multiple stones in 69.71%, thick wall gallbladder in 41.67% and adhesions in 35% of cases.

There are several conditions that make it technically difficult laparoscopic cholecystectomy procedure. These include acute cholecystitis, empyema of the gall bladder, gallbladder gangrene, gallbladder and intrahepatic porcelain gallbladder. In addition, there are many others that can be very difficult to laparoscopic cholecytectomy. These include previous laparotomy and surgical adhesions, portal hypertension, liver cirrhosis and surgery pregnant patient.

Gastric and duodenal surgery can make it more difficult to laparoscopic biliary surgery , particularly in the dense adhesion triangle Calot[25]. In our study, 15% of raw adhesions in Calot triangle and 16 % heavy and tight adhesions around the gall bladder. However, the study Laghari AA et al[21], filed on certain operating conditions , where it is difficult to perform the separation of adhesions was LC (50%) and peeling Calot triangle (29.17%). In our studies of other operational settings, which makes it difficult laparoscopic gallbladder was hidden anatomy of Calot triangle in 11 patients (11%), empyma 9%, 7% mucocele of the order of 7% of the gall bladder and gall bladder in intrahepatic 9 (9 %) patients. However , the study reported pericholecystic adhesions Khan N[18] 34.7 %, 22.3 % acute cholecystitis, mucocoele gallbladder from 3.8 % in follicular empyema was observed in 5% of cases.

CONCLUSIONS

The technique of laparoscopic cholecystectomy has been standardized and has become a routine and safe operation for gallstones . In conclusion , our study showed that there are different intraoperative factores that make difficult laparoscopic cholecystectomy . There are severe adhesions in Calot triangle too tight , heavy and adhesions around the gall bladder , hidden anatomy in the triangle of Calot, intrahepatic gall bladder and adhesions around the gall bladder. However , the surgeon's experience , knowledge of biliary anatomy and careful dissection around the gall bladder and calots triangle can be treated very easily and can.

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