ORIGINAL ARTICLE

To evaluate causes of delayed presentation of Gall stone disease: A retrospective study at Punjab Rangers Teaching Hospital, Lahore

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Abstract

Background: The prevalence of gallstones is reported to range between 10% and 15% among adults. Gallstones can obstruct the cystic duct, which can cause gallbladder (GB) distension and biliary colic. Prolonged obstruction results in inflammation, infection, and even ischemia, a common condition known as acute cholecystitis (AC). In people under 50 years of age, women are three times more likely than men to develop acute cholecystytis. Repeated episodes of acute cholecystytis can result in chronic cholecystitis. Gall stones leading to Acute pancreatitis / cholangitis is also one of the known complication. Incidence of carcinoma gall bladder also increases with prolonged irritation with stones.

Material and Methods: Data of 100 patients admitted with gall stone disease in surgical department of Punjab rangers teaching hospital Lahore during one year from June 2018 to June 2019, was examined. A preformed questionnaire was used to collect information about demographic variables, pre-operative symptoms, examination findings, results of investigations, operative findings and post operative outcomes.

Result: In all patients, pre-operative confirmation of cholelithiasis on ultrasonography was present,with duration of symptoms ranging from 06 month to 15 years. 54% of the patients had delayed presentation due to fear of undergoing surgery and anesthesia. 40% of the patients did not have suitable access to the healthcare facilities as their husbands were posted away from home and they could not come to the hospital on their own. 06% of the patients were initially mis-diagnosed as acid peptic disease, and received symptomatic treatment in rural setting, without proper tertiary care referral.

Conclusion: Measures should be taken by the Punjab Rangers department as well as healthcare regulatory authorities to promote awareness of gallstone disease, proper management of dyspepsia, timely referral, as well as provisions for proper check-up and treatment for family members of personnel

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Introduction:

Gallstones disease is a common surgical problem, accounting for a significant proportion of elective admissions in surgical unit. Cohort studies with ultrasound screening for Gall stones have reported an incidence of 0.60-1.39% every year, with an association of advanced age, female gender, number of childbirths, contraceptive use, obesity, familial hyperlipidemia, diabetes, liver disease and Salmonella infection.[1] High prevalence rates of gallstone disease have been reported from various countries: in Saudi Arabia, the overall prevalence is 11.7%,[2] while a prevalence of 10% in adult US and European population has been reported.[3]

Studies from Pakistan have also reported a high burden of gallstone disease. In a prospective

study of all surgical cases over a five year period in a tertiary hospital at Karachi, the prevalence of gallstone disease was reported as 6.4%, with attributable factors being multi-parity, obesity, diabetes, use of oral contraceptives, and cirrhosis.[4] Another study reported an incidence of 12.3% for gallstone disease in Larkana, Sindh.[5] In another population based study in Karachi, sonographic prevalence of gallstone disease was found to be 10.2%, which was significantly higher in females. The report found a correlation with increased age, marital status (as single or widowed), physical inactivity, and reduced consumption of fruits, vegetables and fish.[6]

Family history also appears to be a pre-disposing factor for the development of gallstone disease. In a study conducted in Peshawar, out of 130-patients with a positive family history, 76 (58.4%) were found to have symptomatic gallstones on routine abdominal ultrasonography.[7] Gallstones can also present with acute and chronic cholecystitis, obstructive jaundice, and acute pancreatitis. In a multicenter prospective study of patients with acute pancreatitis, 74% of the cases were attributable to gallstones, out of which 44.7% underwent same admission cholecystectomy to remove etiological disease.[8] Gallstone disease is the most common cause of chronic cholecystitis, as evidenced by a retrospective study on histopathological features of gallbladder disease in Pakistan, in which 75% of the cases were chronic cholecystitis with cholelithaisis and few percentage with acute cholecystitis.[9]

Currently, laparoscopic cholecystectomy is the gold standard of care in most surgical units where these facilities are available. However, for complicated gallbladder disease, open cholecystectomy may be required and is generally a safer choice. One prospective study in Pakistan has reported a conversion rate of 7.78% from laparoscopic to open cholecystectomy among 1081 total operations. This conversion is linked to both pre-operative and intra-operative factors: the former includes age (greater than 65 years), obesity, diabetes, and previous abdominal surgery; whereas the latter includes perforated gallbladder or empyema gallbladder, presence of intraabdominal adhesions, and scleroatrophic gallbladder.[10] Laboratory findings such as deranged alkaline phosphatase and bilirubin levels, and presence of multiple stones with increased common bile duct diameter are also associated with high rate of conversion from laparoscopic to open surgery.

This retrospective study was conducted, including analysis of histopathological findings of gall bladder specimens after laparoscopic / open cholecystectomy, to determine the mode and reasons of late presentation of patients with gallstone disease in Punjab Rangers Teaching Hospital, Lahore, the institution providing tertiary care facility to troops and their families of whole of Punjab and northern areas.

Materials and Methods:

A retrospective study was carried out in the department of General surgery Punjab Rangers Teaching Hospital Lahore. Data of 100 patients admitted for cholecystectomy conducted over a period of 1-year from June 2018 to June 2019 was examined. A preformed questionnaire was used to collect information about demographic variables, pre-operative, intra-operative factors and post-operative outcomes. Patients were especialy inquired about reasons of delayed arrival to hospital for treatment. Requirement for participant consent was waived by the institutional review board of Punjab Rangers Teaching Hospital considering the retrospective nature of the study. All consecutive surgical records over the past 1-year were examined.

Only those records were included which were complete; recorded laparoscopic cholecystectomy with or without conversion to open cholecystectomy in adult patients; and recorded pre-operative symptoms, intraoperative complications and post-operative sequalae. Incomplete records, as well as records of surgery in pediatric patients, were excluded.

Data was collected on a pro forma, and was entered and analyzed using SPSS software version 23. Qualitative statistics were determined as frequency and percentages, and quantitative vari-

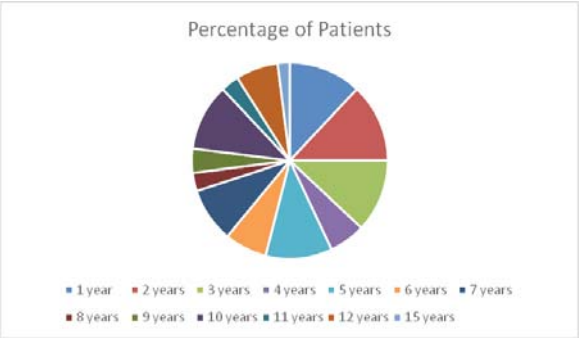

Figure 1: Percentage representation of delayed presentation after initial diagnosis (in years).

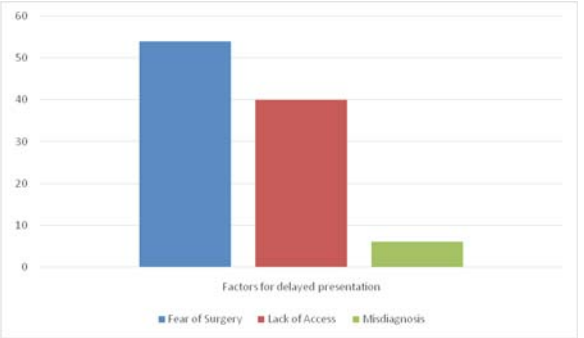

Figure 2:Factors leading to delayed presentation of patients with gallstone disease.

ables were recorded as mean ± SD.

Results:

Surgical records of 100 patients who had undergone cholecystectomy were used to collect data, based on a preformed questionnaire. Mean age of patients was 48.50±12.06. There were 82-female and 18-male patients included in the study. All patients belonged to rural area on the outskirts of Lahore, Punjab. Among female patients, 53% were multiparous, 27% were uniparous while 20% were nulliparous. 80% of the patients did not have any medical co-morbidities, whereas in the rest, diabetes (12%) and Hepatitis-C (16%) were the most common present. 49% of the patients had a BMI >25, 27% had BMI between 19 and 24, while rest had BMI <19.

In all the patients, pre-operative confirmation of cholelithiasis on ultrasonography was present, with duration of symptoms ranging from 6-months to 15-years. 13% of the patients had features of fatty liver disease on abdominal ultrasound, while cirrhosis was documented in only 2% of the patients. Figure-1 shows the percentages of delayed presentation after initial diagnosis in years while figure-2 highlights the most common causes of delayed presentation.

54% of the patients had delayed presentation due to fear of undergoing surgery and anesthesia. 40% of the patients did not have suitable access to the healthcare facilities as their husbands were posted away from home and they could not come to the hospital on their own. Few of rangers personal when arrived to their family, patient described symptom free interval. 06% of the patients were initially misdiagnosed as acid peptic disease, and received symptomatic treatment in rural setting, without proper tertiary care referral.

The most common initial presenting complaints were epigastric abdominal pain (57%) and dyspepsia (43%). 6-patients from total study sample had presented with pre-operative complications. Among these, four had initial presentation of pancreatitis, which resolved with conservative treatment after which they were planned for elective interval cholecystectomy. The rest of 2-patients had presented with obstructive jaundice, and had undergone ERCP with stone removal prior to presentation for elective cholecystectomy.

From 100 laparoscopic cholecystectomy operations, only 2 were converted to open cholecystectomy, which was due to intra-operative findings of gallbladder mass with difficult dissection. Mean operative time was 81.5±8.9 minutes. Majority of the patients were discharged uneventfully, with a mean hospital stay of 3.1±1.2 days.

The major post-operative complaint was pain, in 54% of the patients. Histopathological specimens of gallbladder were sent for all patients; among these, chronic cholecystitis with cholelithiasis was present in 98% of the cases, while 2% of the cases were diagnosed pathologically with adenocarcinoma of the gallbladder.

Discussion:

The results of our study highlight gallstone disease and its management in a teaching tertiary care hospital among cases coming from rural area on the outskirts of Lahore, Pakistan. The presenting population at our hospital is predominantly the families of rangers troops serving in the Punjab . This has serious implications for the results of our study as discussed later.

In our study, the mean age was 48.5 years, with the majority of the participants being female (98%) and multiparous (53%). This is consistent with other studies done in Pakistan, in which female preponderance is present, especially in age greater than forty years, among patients with gallbladder disease.[11]

Hepatitis-C infection and cirrhosis have both been also independently linked with gallstone disease. In our study, 16% of the patients had hepatitis-C infection, whereas 2% presented with cirrhosis on abdominal ultrasound. Previous studies have shown hepatitis-C to be linked with increased risk for gallstone disease.[12] In a recent cross-sectional study, 25.6% of patients with gallstones had hepatitis-C compared to 8.6% who were sero negative for HCV, with the association being statistically significant.[13]

Diabetes mellitus and obesity have been linked with increased prevalence of gallstone disease in the general population.[6,11] In our study, 12% of the patients were diabetic, and 49% of the female patients had a BMI above 25. Therefore, our findings also suggest that diabetes and obesity can be linked with gallstone disease. Dietary factors have also been identified as either protective or predisposing towards gallstone disease [5,6] however, our study did not record these factors.

The main focus of our study was on the rural population in which male members of the family were a part of Punjab Rangers department. These members were deployed in different areas, often far from their home. Consequently, one of the reasons for delayed presentation recorded in our study was lack of access to suitable healthcare (40%) for the patients, especially those females who husbands or fathers were deployed away from home. Other major reasons for late presentation were fear of surgery and anesthesia (54%) and delayed referral due to misdiagnosis in rural areas (06%). Studies have reported that negligence of symptoms for prolonged period in rural areas, combined with poverty, illiteracy and poor healthcare access contribute to a high rate of complicated gallstones compared with the general population.[14,15] This has important implications for improvement of healthcare access, and awareness among family members of armed personnel, so that they can present earlier for proper treatment.

Gallbladder carcinoma is a rare malignancy, although it has a high reported rate in some geographical areas of South Pakistan.[16] In our study 2% of patients who underwent surgery for gallstones were found to have gallbladder mass, for which their surgery was converted to open cholecystectomy. These patients were subsequently diagnosed with adenocarcinoma of the gallbladder on histopathology. This is concerning, as it indicates that delayed presentation of gallstones can be with complicated disease, including cancer.[15]

Our study has some limitations, related to its retrospective design and bias in data collection. Since data regarding educational status, dietary habits, and daily physical activity was not available so we were unable to find any correlations of these with gallbladder disease, although such correlations have been previously reported in literature.[5-7,11]

Conclusion:

There is obvious huge delay in presentation of patients with symptomatic gallstones to the hospital among rural areas in the vicinity of Punjab Rangers Teaching Hospital. This is attributable to fear of surgery due to misinformation, lack of access in the absence of male family members, and misdiagnosis and treatment in rural areas with delayed referral. Majority of the affected patients are multiparous females. Diabetes, obesity, and presence of hepatitis C increase the risk for developing gallstones. Measures should be

taken by the Punjab Rangers department as well as healthcare regulatory authorities to promote awareness of gallstone disease, proper management of dyspepsia, timely referral, as well as provisions for proper check-up and treatment for family members of personnel.

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Role and contribution of authors:

Dr Syed Asif Raza Kazmi, collected the data, references and did the initial writeup.

Dr Saher Saeed, collected the data and helpd in introduction writing.

Dr Akmal Shafique, collected the data, refercnes and helped in discussion writing

Dr Muhammad Mohsin Ali Dynamo, collected the data and helped in interpretation of data.

Dr Brig(Rt) Javaid Sajjad Hashmi, critically review the article and made useful changes.

Dr Sadaqat Ali Khan, collected the data, references and helped in discussion and conclusion writing.

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