

Gallstone Disease and Causes for its Late Presentation in Pakistan

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Abstract

Background: Gallstones develop among adults with a prevalence rate ranging from 10 percent to 15 percent. Biliary colic and gallbladder distension are caused by obstruction of cystic duct. The cystic duct obstruction is mainly caused by gallstones impacted at Hartman pouch or stones passing into CBD. If the obstruction persists for longer period, it can lead to mucolceole formation or empyema formation on background of inflammation due to cholecystitis. Below the age of 50 years, acute cholecystitis is developed in females three times more than in males. One of the common complications is cholelithiasis is acute pancreatitis which can lead to life threatening complications. **Objective:** to study gallstone disease and identify the possible reasons for its late presentation in patients. **Study design:** A retrospective study **Place and Duration:** This study was conducted at Liaquat University of Medical and Health Sciences Jamshoro Pakistan from December 2021 to December 2022 **Methodology:** A total of 90 individuals were selected to be a part of this research. All the information related to the patients was collected through a questionnaire. The information includes age, sex, examination findings, and symptoms before the surgery, results, and outcomes after the surgery. All the participants were especially asked why they had arrived at the hospital so late for the surgery. Those records which include symptoms before the surgery, outcomes after the surgery, and complications that the patients faced during the surgery were included. **Results:** All of the individuals that were a part of this research went under ultrasonography before the surgery which confirmed the presence of cholelithiasis. The time period of the symptoms were falling under the range of six months to fifteen years. More than half of the patients, representing 54.4 percent, were having delayed presentations because they were afraid of anesthesia and afraid to go under surgery. There were also a large number of patients who were not having proper access to the facilities of healthcare because they could not come to the hospital on their own and their husbands were posted far away from their homes. The remaining 5.6% of the patients were those who were misdiagnosed with an acid peptic disease. They went under symptomatic treatment and did not receive proper biochemical and radiological investigations because they were treated in rural settings. **Conclusion:** The healthcare authorities should promote awareness related to gallstone disease. There should be proper management of dyspepsia where the patients are timely referred and provided with a proper history, examination and investigations.

Keywords: Dyspepsia, gallstones, delayed presentation

Introduction

Gallstone disease is one of the most common surgical problems that have a high proportion of admissions in surgical units. In prior related studies, it was found that after performing ultrasound screening, the incidence rate of gallstones was recorded from 0.60 percent to 1.39 percent each year. This incidence has a strong association with

female gender, old age, use of contraceptives, number of births, diabetes, salmonella infection, obesity, liver disease, and hyperlipidemia [1]. A number of countries have reported a high prevalence rate of gallstone disease such as 11.7 percent in Saudi Arabia while 10 percent in European countries and the US [2, 3]. Countries like Pakistan also have a high prevalence rate of gallstone disease. There is a study which was

conducted earlier in Karachi where the gallstone disease had a prevalence rate of 6.4 percent. The related risk factors include contraceptive use, diabetes, obesity, cirrhosis, and multiparity [4]. There was also another research conducted in Larkana that reported a prevalence rate of gallstone disease as 12.3 percent [5]. More studies conducted in Karachi had shown a prevalence rate of 10.2 percent which was attained after patients went under sonography. This is a higher prevalence rate which was mostly found in women. Those studies have shown an association with marital status, old age, low consumption of fruits, fish, and vegetables, and no physical activity [6].

Furthermore, one of the risk factors that contribute to the development of gallstone disease is family history. In prior research related to gallstone disease, there were a total of 130 patients who had a positive family history but almost 60% of the patients were having symptomatic gallstones which were detected after regular abdominal ultrasonography [7]. Acute pancreatitis, acute and chronic cholecystitis and obstructive jaundice can also be presented with gallstone disease. There was research conducted on patients who were having acute pancreatitis in which 74 percent of the patients were having gallstone disease. Out of 74 percent, 44.7% of patients went under treatment for cholecystectomy to remove the disease [8]. Another research was conducted in which it was found that chronic cholecystitis is mostly caused by gallstone disease [9].

Nowadays, the most beneficial treatment for this disease is laparoscopic cholecystectomy if all of the facilities are available in the surgical units. There was a prior research study performed in which a total of 1081 operations were held in which the conversion rate from laparoscopic cholecystectomy to open cholecystectomy is reported to be 7.78%. All risk factors before surgery and during the surgery are linked with this conversion rate especially in rural or primary health care setting where lack of expertise and proper equipment is on the main reasons compounding on factors like obesity, old age, previous abdominal treatment, and diabetes. Others includes the presence of intra-abdominal adhesions, empyema gallbladder or perforated gallbladder, and scleroatrophic gallbladder [10]. A few laboratory findings are also linked to such a high conversion rate. These findings include the presence of deranged bilirubin levels, and deranged alkaline phosphatase levels which warrant CBD exploration as well in hospitals where ERCP is not available.

This research is retrospective research which was conducted to analyze the histopathological results of the gallbladder when the gallbladder undergoes open cholecystectomy or laparoscopic cholecystectomy. The purpose of this research was to study gallstone disease and identify the possible reasons for its late presentation in patients.

Methodology

A total of 90 patients were selected to be a part of

this research. All the data of the individuals was gathered through a questionnaire. The information includes age, sex, examination findings, symptoms before the surgery, results, intraoperative factors and outcomes after the surgery. All the participants were especially asked why they had arrived at the hospital so late for the surgery. Consent from all patients was taken and all the records related to their medical history for the past year were assessed.

Those records which include symptoms before the surgery, outcomes after the surgery, and complications that the patients faced during the surgery were included. Records related to open cholecystectomy and laparoscopic cholecystectomy with or without conversion were included in the research. In short, all the records that were complete were a part of this investigation. Those records which were incomplete were removed from the investigation.

All of the information was gathered on a pro forma. SPSS software was used to analyze the information statistically. Version 23 was used for the SPSS software. Standard deviation and mean were the quantitative variables. Percentages and frequency were qualitative variables.

Results

The surgical information for all 90 patients was gathered through a questionnaire. The range of age was from 30 to 70 years. The average age calculated was 48.5 years. Gallstone disease is common in women who are young. Our research also reflects this phrase as our research includes 80 females which represent 88.9% of the participants while there were only 10 males. Among these 88.9 percent of females, 20 percent of women were nulliparous, 53 percent were multiparous, and the rest 27 percent were uniparous. There were 72 patients, representing 80 percent of the sample size, who were not having any medical complications. Whereas, the rest of the 18 patients were having hepatitis C and diabetes. Overall 11 patients were having diabetes while 9 patients had hepatitis C. The body mass index of 50% of the participants was more than 25 kg/m² while 24% of the participants had a body mass index below 19 kg/m². The rest 26% had a body mass index between 19 and 24 kg/m². Table number 1 shows the demographics of the participants.

All of the individuals that were a part of this research went under ultrasonography before the surgery which confirmed the presence of cholelithiasis. The time period of the symptoms were falling under the range of six months to fifteen years. On abdominal ultrasound, there were 12 patients who showed features of fatty liver disease while only 1 patient showed cirrhosis.

More than half of the patients, representing 54.4 percent, were having delayed presentations because they were afraid of anesthesia and afraid to go under surgery. There were also a large number of patients who were not having proper access to the facilities of healthcare because they could not come to the

hospital on their own and their husbands were posted far away from their homes. This large number of patients represents 40% of the sample size. The remaining 5.6% of the patients were those who were misdiagnosed with an acid peptic disease in the starting. They went under symptomatic treatment and did not receive proper health care because they were treated in rural settings. Table number 2 shows the reasons that lead to late presentation.

Dyspepsia and epigastric abdominal pain were the most common complications that the patients faced. A total of 52 patients were having epigastric abdominal pain while the rest 38 patients had dyspepsia. Only 8 people had complications before the surgery. Out of these 8 people, 5 patients had a presentation of pancreatitis initially. This was resolved through conservative surgery after which these patients underwent interval cholecystectomy. The remaining 3 patients had jaundice. They had a treatment of ERCP with stone removal after which they were selected for cholecystectomy. Only 2 operations of laparoscopic cholecystectomy out of 90 were converted to open cholecystectomy. The reason for this was the difficulty in dissecting the mass of the gallbladder during the operation. The average time for the surgery was 81.9 minutes. The average hospital stay was 3.1 days. A large number

of individuals were discharged indecisively. The most common complaint after the surgery that the patients faced was pain. 49 patients were having pain after the surgery. 97.8 percent of the patients had cholelithiasis with chronic cholecystitis. The rest 2.2 percent were having adenocarcinoma of the gallbladder. Table number 3 shows the complications patients faced before, after, and during the surgery.

Age (Years)	Female	Male
0-30	4	0
31-40	8	0
41-50	31	6
51-60	20	3
61-70	17	1
Total	80	10

Reasons	Number (n)	Percentage (%)
Lack of access	36	40
Fear of surgery	49	54.4
Misdiagnosis	5	5.6
Total	90	100

Complications	n
Before surgery	
• Pancreatitis	5
• Jaundice	3
In between surgery	
• Gallbladder dissection	2
After surgery	
• Cholelithiasis with chronic cholecystitis	88
• Adenocarcinoma of the gallbladder	2

Discussion

This research is retrospective research which was conducted to analyze the histopathological results of the gallbladder when the gallbladder undergoes open cholecystectomy or laparoscopic cholecystectomy. The purpose of this research was to study gallstone disease and identify the possible reasons for its late presentation in patients.

The average age calculated was 48.5 years. Gallstone disease is common in women who are young. Our research includes 80 females which represent 88.9% of the participants while there were only 10 males. Among these 88.9 percent of females, and 53 percent of women were multiparous. This data is similar to the data of prior research in which most of the patients were females who were presented with gallstone disease [11].

Gallstone disease was associated with cirrhosis and hepatitis C independently. Our research shows that after performing abdominal ultrasound, 9 patients had hepatitis C and only 2 patients had liver cirrhosis. There are a number of prior research studies that

have shown the association of hepatitis C with gallstone disease [12, 13]. There was a research conducted in which 25.6 percent of individuals, who were a part of the study, were having gallstones with hepatitis C [14].

In the general population, the increase in the risk of gallstone disease is due to obesity and diabetes [15, 16]. Our research shows that 11 patients were having diabetes while 45 patients (50%) were having a body mass index of more than 25kg/m². Hence, we can also conclude that there is a significant association between gallstone disease and obesity and diabetes. Generally, diabetic factors can be both risky as well as protective [17]. However, our research did not collect these factors.

Our research's main focus was on rural areas where the males often had posted far from their homes. Our research shows a large number of patients who were not having proper access to the facilities of healthcare because they could not come to the hospital on their own and their husbands were posted far away from their homes. This large number of patients represents 40% of the sample size.

Another reason was having delayed presentations (54.4 percent) because they were afraid of anesthesia and afraid to go under surgery. Lastly, patients were misdiagnosed with an acid peptic disease in the starting (5.6%). Previous research studies have concluded that the time duration of symptoms was greater because there was illiteracy, poverty, and poor health care in rural areas [18]. The healthcare authorities should promote awareness related to different types of diseases.

Only 2 operations of laparoscopic cholecystectomy out of 90 were converted to open cholecystectomy. The reason for this was the difficulty in dissecting the mass of the gallbladder during the operation. These individuals were diagnosed with gallbladder carcinoma, which happens very rarely. It is a serious problem because this can lead to cancer as well [19]. The limitations of our research include biases in the collection of information and its retrospective design. Despite the fact that such correlations have previously been reported in the literature, we were unable to find any association between educational level, dietary preferences, and daily physical activity and gallbladder disease [20].

Conclusion

We conclude that we can see a huge delay in the presentation of participants due to fear of surgery, lack of access to medical facilities, and misdiagnosis. Most of the participants who were diagnosed with gallbladder disease were females. Most of the females were multiparous. Hepatitis C, obesity, and diabetes are the risk factors that increase the prevalence of gallbladder disease. The healthcare authorities should promote awareness related to gallstone disease. There should be proper management of dyspepsia where the patients are timely referred and provided with the proper checkup.

Ethical Approval

It was taken from the ethical committee

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Conflict

No conflict of interest

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