A Retrospective Evaluation of Reasons of Delayed Presentation of Gallstone Disease

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Abstract

Background: It is estimated that between 15 to 25 percent of people have gallstones. Gallstones obstructing the cystic duct can cause gallbladder (GB) distention and biliary colic. Acute cholecystitis(AC), a disorder caused by inflammation, infection, and even ischemia, reveals itself when the bile duct becomes blocked for an extended time. Under 50 years of age, females are three times as likely as males to have acute cholecystitis. Regular occurrences of acute cholecystitis may result in the development of chronic cholecystitis. Additionally, gallstones can cause acute pancreatitis and cholangitis. Chronic inflammation from gallstones is associated with a higher risk of gallbladder cancer. **Objective:** To determine the causes of diagnostic delay of gallstone diseases. **Study design:** A retrospective study **Place and Duration: This study was conducted at** Liaquat University of Medical and Health Sciences Jamshoro **from June 2021 to June 2022. Material and Methods:** Overall one hundred and fifty patients admitted to the surgical department of our hospital with gallstone disease were analyzed. Researchers acquired information regarding the participants' demographics, medical history, symptoms previous to surgery, exam results, diagnostic testing, surgical procedures, and postoperative outcomes using a standardized questionnaire. Patient records were determined to be comprehensive if they detailed preoperative symptoms, intraoperative complications, and postoperative complications for patients over the age of 18 who underwent laparoscopic cholecystectomy, with or without conversion to open cholecystectomy. **Result:** All patients with preoperative Ultrasonographic indications of cholelithiasis exhibited symptoms lasting between 7 months and 18 years. A total of 54% of patients arrived late because they were apprehensive about the anesthetic and the surgery. Women whose husbands were stationed far away could not travel to the hospital to utilize its services. Six percent of rural patients were incorrectly diagnosed with an acid peptic disease and only received symptomatic treatment without referral to a specialist. **Conclusion:** Hospitals must improve dyspepsia diagnosis and treatment, raise public awareness of gallstones, and expedite patient referrals.

Keywords: Cholecystitis, Pancreatitis, Gallbladder Cancer.

Introduction

A disproportionately high number of elective admissions to the surgical unit are due to gallstone disease. Being older, female, having children, using birth control pills, being overweight, having a family history of hyperlipidemia or diabetes, and having gallstones herself are risk factors for getting gallstones. Annual incidence rates vary between 0.70 percent to 1.26 percent. (1) In Pakistan, gallstone disease affects 11.7% of the population, compared to 10% of adult populations in the United States and Europe. Gallstone disease is prevalent, according to three separate studies. (1, 2, 3)

Multiparity, obesity, diabetes, oral contraceptive use, and cirrhosis were associated with the 6.4% incidence of gallstone disease in a specific period at a tertiary hospital (3). Another study found that the frequency of gallstone disease was 15.3% higher other disease. In a demographic survey of residents, sonography revealed that 11.2% had gallstone disease, with women being affected at a far greater incidence. According to a study, an association was observed between aging, singleness, inactivity, and a diet poor in fruits, vegetables, and seafood (2).

An additional risk factor for gallstones is a family history of the condition. Using routine abdominal ultrasonography, 69 of 150 individuals with a

doi.org/10.31838/hiv23.03.74 Received: 10.10.22, Revised: 21.11.22, Accepted: 12.12.22.

positive family history were found to have symptomatic gallstones in the research. Gallstones can manifest as acute and chronic cholecystitis, jaundice, obstruction, and acute pancreatitis. A total of 79% of instances of acute pancreatitis were caused by gallstones, and 56.8% of these patients underwent cholecystectomy during the same hospitalization to eliminate the etiological illness (3, 4). In a retrospective study of the histological characteristics of gallbladder illness, chronic cholecystitis with cholelithiasis was found to be the most prevalent form of cholecystitis, Acutecholecystitis makes up a small number of cases. Most surgical departments use laparoscopic cholecystectomy, which requires laparoscopic equipment.(5). However, patients with advanced gallbladder disease may require open cholecystectomy, which is the safer alternative. In a study, 9.58% of 10 cholecystectomies were converted from laparoscopic to open surgery. Intraoperative dangers include a ruptured or empyema gallbladder, intraabdominal adhesions, and a heterotrophic gallbladder. Preoperative dangers include age (over 65 years), obesity, diabetes, and previous abdominal surgery. Higher alkaline phosphatase and bilirubin levels and the presence of many stones with a larger-than-usual common bile duct diameter are related to a higher conversion rate from laparoscopic to open surgery. (6, 7, 8).

This study looked at the reasons for the late diagnosis of gallstone diseases and compared the results of laparoscopic and open cholecystectomy on the gallbladder.

Methodology

For this study one hundred and fifty patients' cholecystectomy admission data were analyzed. A standard questionnaire was utilized to collect demographic data and information regarding the patient's medical history, their experiences during the surgical process, and the outcomes of the surgery. In this examination, a full year's worth of surgical data was analyzed

Patients over the age of 18 who underwent laparoscopic cholecystectomy, with or without conversion to open cholecystectomy, were considered to have complete records if they contained information on preoperative symptoms, intraoperative complications, and postoperative complications were included. Histories of pediatric surgical procedures and incomplete patient information were excluded. The acquired data were imported into SPSS version 24 and then analyzed.

Results

Approximately150 cholecystectomy patients' medical records were reviewed using a pilot-tested questionnaire to obtain data. The average age of the patients was 58.43 years. The study involved 150 patients, 128 of whom were female and 26 of whom were male. All of the patients were from rural areas. A total of 60% of female patients in this sample were multiparous, 18% were uniparous, and 24% were nulliparous. Patients with comorbid disorders were more likely to have diabetes (20%) and hepatitis C (25%), compared to the 60% of patients who did not report having these symptoms.

Before surgery, Ultrasonographic evidence of cholelithiasis was acquired for all patients, whose symptoms ranged between five months and fifteen years. Thirteen percent of those with abnormal abdominal ultrasound results were diagnosed with fatty liver disease, while just two percent had cirrhosis. Overall 59% of patients arrived late because they were apprehensive about the anesthetic and the surgery. Women whose husbands were stationed far away could not travel to the hospital to utilize its services. After returning home, the patient reported that they had been symptom-free for an extended period. Unfortunately, 7.6% of rural patients were mistakenly diagnosed with an acid peptic disease and only received symptomatic treatment as opposed to a referral to a specialist.

Most frequently reported were epigastric stomach pain (52%) and dyspepsia (48%), the two most prevalent causes for seeking medical care. Five percent of the study's sample encountered complications preceding surgery. Four of these patients were declared well enough to have elective interval cholecystectomy after receiving conservative treatment for their pancreatitis. In addition, two patients with obstructive jaundice who had previously had ERCP for stone removal presented for elective cholecystectomy

Only two of the one hundred and fifty laparoscopic cholecystectomies in which a gallbladder mass was identified had to be operated on using open surgery. The average duration of an operation was eighty-one and a half minutes (standard deviation = 7.9). After a mean hospital stay of 4.10 days, most patients were allowed to discharge. Approximately 59% of surgery patients felt pain. Gallbladder samples from all patients were sent for histopathology investigation, and the results revealed that 98% of them had chronic cholecystitis with cholelithiasis, and 2% had gallbladder cancer. This investigation tries to determine why gallstone disease is frequently misdiagnosed.

Table 1:Demographic information about patients:

Gender	Number of patients (n=150)
Male	26
Female	128
Parity	
Multiparous	76
Uniparous	23
Nulliparous	29
Patients Diagnosed	
Fatty Liver disease	20
Cirrhosis	3

Table 2:Factors for the delayed presentation of patients:	
Reasons	Number of patients (n=150)
Fear of Surgery	59%
Lack of Access	33.4%
Misdiagnosis	7.6%

Table 3:Prevalent reasons for seeking care:	
Reasons	Number of patients (n=150)
epigastric stomach pain	52%
dyspepsia	48%

Discussion

Our research provides insight into gallstone disease and its management at a tertiary care teaching hospital for patients from rural areas. Ultimately, this impacts our ability to comprehend the findings of our research. Most of the participants in our study were female (97%) and multi-child mothers (54 %). Consistent with other studies, this result implies that women, particularly those over 40 years of age, are more likely than men to suffer from gallbladder disease (9-13).

Researchers have found a connection between gallstone disease, hepatitis infection, and cirrhosis. According to abdominal ultrasonography (15, 16), Fifteen percent of our patients had hepatitis C and three percent had cirrhosis. Histories indicate a connection between gallstones and hepatitis C. One study found that hepatitis C was present in 25.6% of gallstone patients, compared to 10.6% of those who tested negative for the virus using a serological test (17). Diabetes and obesity are both associated with gallstone disease.

Nearly half of the women in our study were overweight or obese, and approximately one in ten had diabetes. We conclude that diabetes and obesity may contribute to the production of gallstones. A person's diet may alter susceptibility to and resistance to gallstone disease. However, we excluded them from our analysis (18, 19).

Our analysis focused mostly on rural villages whose male residents had joined the areas in this study. These people spent extensive time away from home in numerous foreign locations. Overall 45% of patients in our study reported a lack of access to competent treatment as a reason for delayed presentation, particularly women whose husbands or dads were deployed in big cities or abroad. Fear of surgery and anesthesia was indicated by 5.5 percent of patients who did not arrive on time for treatment, followed by misdiagnosis (6%), delayed referral (4%), and lack of care (4%). Multiple studies have demonstrated that the prevalence of complex gallstones is greater in rural areas than in metropolitan areas (20). This is due to various factors, including low income, low education, and inadequate medical care. Consequently, this could have far-reaching impacts on family members' understanding of healthcare options and promptness in seeking assistance for themselves or a loved one experiencing health problems related to military service (12). Despite the disease's rarity, there have been reports of an alarmingly high frequency of gallbladder cancer. (21)

Surprisingly, 3% of patients undergoing gallstone surgery also developed gallbladder mass, requiring conversion to open cholecystectomy. In these cases, gallbladder cancer was confirmed by histology. This may show a link between a delayed diagnosis of gallstones and cancer or other deadly diseases.

We are conscious of the limitations of our study, such as its retrospective nature and the potential for bias in data collection. Due to a lack of data (7, 11), we could not validate previously found correlations between socioeconomic status, nutrition, exercise, and gallstones.

Conclusion

Gallstone-afflicted patients from rural areas tend to arrive at the hospital later than those from urban areas. Misunderstandings, inaccessibility (when male family members are absent), erroneous diagnosis, and poor treatment in remote places with inadequate or delayed referral compound the problem. Patients are usually female mothers of multiple children. Diabetes, obesity, and hepatitis C infection are all risk factors for gallstone formation. Urgent diagnosis and treatment are required if a patient or their family exhibits signs of gallstones.

Funding source

None

Conflict of interest

None

Permission

Permission was taken from the ethical review committee of the institute

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