ABSTRACT

Background: Obstructive jaundice can have a number of reasons, but choledocholithiasis is the most frequent. Obstructive jaundice patients frequently complain of pruritus, jaundice, pale faeces, dark urine, and yellow skin and eyes. Today, a precise pre-operative diagnosis is nearly always attainable because of improvements in imaging technology over the years. The study’s goals were to examine the clinical characteristics and treatment of patients with obstructive jaundice. Methods: Patients with obstructive jaundice admitted to the Department of Hepatology at SCB Medical College, Cuttack, Odisha, were the subject of the current hospital-based prospective interventional study. Patients of age greater than 12 years of either sex were studied during the study period of two years after providing written consent. Results: The mean age of the 50 patients was 51.10 years, with 29 (58%) female and 21 (42%) male patients. 19 (38%) of the patients had malignant obstructive jaundice, while 31 (62%) had benign causes. The most frequent symptoms and signs of obstructive jaundice were abdominal pain (100%) and icterus (100%). The most frequent cancer was cholangiocarcinoma (Ca) of the head of the pancreas (Ca) in 2009 (18%), followed by cholangiocarcinoma of the distal common bile duct (CBD) in 2004 (08%), and hilar cholangiocarcinoma of 2003 (06%). The most frequent benign cause was 25 (50%) choledocholithiasis, followed by benign stricture of common bile duct 03 (06%). Conclusion: One frequent reason for surgically treatable jaundice is obstructive jaundice. Its cause is diverse, and the right imaging is typically required for diagnosis. A delayed diagnosis may result in permanent pathological alterations that increase morbidity and death. Therefore, proper diagnosis and treatment are essential.

KEYWORDS Obstructive jaundice, Management, Clinical profile

Introduction

Jaundice is a yellow discolouration of the skin and mucous membranes that results from an elevated serum bilirubin level brought on by a blockage of the bile’s normal outflow (a normal serum bilirubin level ranges from 0.2 to 0.8 mg/dl). Another name for it is surgical jaundice. The biliary canaliculi drain into the common and hepatic ducts, which are bigger channels, before going through the cystic duct to the duodenum or gallbladder[1]. According to stringent definitions, obstructive jaundice results from an obstruction in the bile flow channel between the site of bile conjugation in the liver cells and the duodenal ampulla.

Standard diagnostic procedures such as history, physical exams, biochemical tests, cholangiography, liver biopsy, and patient course surveillance can lead to an accurate diagnosis[2]. Transabdominal ultrasound is a sensitive, pricey, trustworthy, and reproducible diagnostic to assess the biliary tree’s function,
allowing doctors to distinguish between patients with surgical jaundice and those with medical jaundice. As a result, this method is regarded as the best one to use when evaluating jaundice or other biliary illness symptoms[3]. Malignant obstructive jaundice is very difficult to treat. Palliative operations and definitive surgical procedures fall within the surgical treatment category. Endoscopic stenting and interventional radiological treatments like PTBD are examples of non-operative therapy.

The additional hepatic biliary tree and pancreas make them particularly difficult for the surgeon to access. Therefore, it is crucial to properly manage these patients to identify the origin, point of blockage, and treatment of obstructive jaundice. Obstructive jaundice can have many different origins, but it is typically brought on by choledocholithiasis, also known as bile duct stones or gallstones in the bile duct, which is the presence of a gallstone in the common bile duct[4]. In addition, malignancies like cholangiocarcinoma, periampullary and pancreatic tumours, benign strictures such as chronic pancreatitis, and these other reasons are becoming more common[5-7].

With more invasive procedures being performed on the biliary tract, there has also been an increase in iatrogenic causes of obstructive jaundice, such as biliary tract damage and cholangitis [8,9]. Most cases of biliary tract problems, which affect a large portion of the world’s population, are caused by choledocholithiasis. Gallstones affect 20% of Americans over 65, and each year, 1 million newly diagnosed instances of choledocholithiasis are reported[10]. Obstructive jaundice patients frequently complain of pruritus, jaundice, pale faeces, dark urine, and yellow skin and eyes. For example, some patients with choledocholithiasis have painless jaundice. In contrast, some individuals with hepatitis have agonising pain in the right upper quadrant. Abdominal pain is sometimes deceiving for diagnosis.

The absence of pain and tenderness during the physical examination is frequently linked to malignancy. Obstructive jaundice patients are more likely to experience nutritional deficiencies, infectious problems, acute renal failure, and cardiovascular function impairment. Other adverse outcomes can be sneaky and considerably increase mortality and morbidity, including coagulopathy, hypovolemia, and endotoxemia [11]. In order to better understand the clinical profile of individuals with obstructive jaundice, the current study was conducted.

Methods
The current hospital-based prospective interventional study was carried out on patients with obstructive jaundice who were admitted to the Department of Hepatology at SCB Medical College, Cuttack, Odisha. The study included patients or their family members for two years after obtaining consent from the patient. 50 individuals who presented with signs and symptoms of obstructive jaundice participated in this prospective observational study.

The inclusion criteria for this study included the patient’s age being over 12 years old, their clinical diagnosis of obstructive jaundice, and their demonstration of obstructive jaundice using any investigative method. Patients under the age of 12; those with jaundice from causes other than obstructive pathologies, such as hemolytic or hepatocellular jaundice; those who visited the OPD but were not admitted; those with missing or incomplete records; patients with other concurrent malignancies; and those with comorbid conditions, such as uncontrolled diabetes, hypertension, CVA, TB, CAD, and kidney diseases; as well as pregnancy, which was excluded from our study.

Results

To analyse the pattern of clinical presentation and lab data to study the cause of obstructive jaundice and the various treatment modalities, a prospective clinical study with 50 instances of obstructive jaundice was conducted. Out of 50 patients included in the study, patients with obstructive jaundice had an average mean age range of 51–60 years (32%). 51.10 years old on average was the presenting age. The minimum and maximum ages were 12 and 80, respectively.

Out of 50 patients, abdominal discomfort was the most frequent presenting symptom (present in 50 patients, 100%), followed by yellowish sclera discolouration (jaundice), fever (54%), clay-coloured faeces (58%), anorexia (42%), and itching (40%). The investigation of the indicators in the patients under study revealed that icterus, which was present in every instance (100%) and was followed by abdominal tenderness (66%), itchy markings (34%), a palpable gallbladder (20%), and hepatomegaly (14%), was the most prevalent sign. Bilirubin levels range from 3.2 to 27.6 mg%. Most study participants (42%) had bilirubin levels between 11 and 20 mg%. Total bilirubin had a mean value of 11.58 mg% and a median value of 10.7. The range of the bilirubin levels is 3.2 to 27.6 mg%. Out of 50 patients with obstructive jaundice in this study, the majority of cases (62%) have benign etiologies, followed by malignant etiologies (38%).

Out of 31 patients with benign etiologies, choledocholithiasis accounted for the greatest number of patients (80.64%), followed by CBD strictures (three; 9.67%) and choledochal cysts (three; 9.67%). Nine patients with carcinoma head of the pancreas (47.36%), four with distal CBD cholangiocarcinoma (21.05%), three with hilar cholangiocarcinoma and one with carcinoma gall bladder each (three patients each, 15.78%) made up the majority of the 19 patients with malignant aetiology.

25 patients (80.64%) of the 31 patients with benign etiologies had CBD calculi in their gallbladders. Of these, 10 underwent cholecystectomy with CBD exploration and choledochoduodenostomy, seven underwent cholecystectomy with CBD exploration and T-tube insertion, and seven underwent endoscopic interventions. A cholecystectomy with CBD and a hepaticojejunostomy was performed on one patient (4%). Three patients (9.67%) with biliary stricture underwent CBD exploration in two cases—one with a choledochoduodenostomy (33.33%) and the other with a hepaticojejunostomy (66.67%). Hepaticojejunostomy (100%) was performed on three choledochal cyst patients (9.67%).

Most (38%) of the 19 patients with jaundice from malignant aetiology underwent therapeutic and palliative operations. Eight patients (42.1%) underwent Whipple’s surgery. In addition, surgery was used to relieve the symptoms in 11 patients (57.89%), five of whom underwent triple bypass surgery (45.45%), three of whom underwent percutaneous transhepatic biliary drainage (27.27%), two of whom underwent palliative stenting (18.18%). In addition, one of whom underwent hepaticojejunostomy (9.09%).

In the cases that were evaluated, wound infection was shown to be the most frequent postoperative complication (20%), followed by cholangitis (6%) and septicemia (4%). Dyeleucotoxicemia (2%), anastomotic leak (4%) and other less frequent problems were also reported. ERCP-induced pancreatitis and stent blockage or dislodgement each caused 2% of cases.
Table 1 Distribution of patients according to age.

<table>
<thead>
<tr>
<th>Age groups (in years)</th>
<th>Number of patients</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>12–20</td>
<td>03</td>
<td>06</td>
</tr>
<tr>
<td>21–30</td>
<td>02</td>
<td>04</td>
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<td>31–40</td>
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<td>24</td>
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<tr>
<td>41–50</td>
<td>08</td>
<td>16</td>
</tr>
<tr>
<td>51–60</td>
<td>08</td>
<td>16</td>
</tr>
<tr>
<td>61–70</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>&gt;71</td>
<td>02</td>
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</table>

Table 2 Distribution of cases according to bilirubin levels.

<table>
<thead>
<tr>
<th>Bilirubin levels (mg%)</th>
<th>Number of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>05</td>
<td>09</td>
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<tr>
<td>5–10</td>
<td>19</td>
<td>39</td>
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<td>21–30</td>
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Discussion

In our study, the sixth decade of life had the highest percentage of obstructive jaundice patients (32%). 51.10 years old was the average age. The mean age in this study was 55.5 years, which was in line with studies by Padhy et al. [12] and Saadoon [13], where the mean age of obstructive jaundice was 52 years. According to the survey, women (58%) were more adversely affected than men (42%). The ratio of men to women is 0.7:1.

In this study, male inclination and younger age groups (40 years) were associated with a higher prevalence of the benign cause of obstructive jaundice. This research was in line with a 2011 study by Chalya et al. [14], which indicated that both benign and malignant obstructive jaundice affected women more frequently than men. The incidence of sexual activity is identical for both sexes, according to Zollinger et al. The difference in admission rates between males and females can cause this mismatch.

The analysis of bilirubin levels in our study covers a range of 3.2 mg% to 27.6 mg%. Most study participants (42%) had bilirubin levels between 11 and 20 mg%. Total bilirubin’s mean concentration was 11.58 mg%. In this investigation, the malignant cause of obstruction had elevated much greater bilirubin levels (>10 mg%) than the benign cause (<10 mg%). In accordance with this study, García et al. [16] ’s investigation found that elevated bilirubin levels are a predictor of cancer. In patients with obstructive jaundice, a serum bilirubin level of 100 mol/L was found to be a highly sensitive but less specific indicator of malignancy, making it a useful screening tool for malignancy in these patients, according to Chaudhry et al. [17] ’s study. According to a study by Hayat et al. [18], total bilirubin levels increased in obstructive jaundice cases, which is consistent with my research.

In our examination, it was discovered that three fatality incidents had occurred. Following triple bypass surgery, two patients with pancreatic cancer died. One of the patients had an anastomotic leak, while the other had severe dyselectrolytemia. One patient had liver secondaries, porta hepatis nodes, and metastatic cancer of the gallbladder. After receiving palliative drainage (PTBD), the patient passed away. 6% of cases are fatal, on average. According to Sanie et al., cited in [19], nine of the 15 patients who underwent surgery for obstructive jaundice (60%) died. According to a study by Dalwani and Shaikh9, a significant death rate occurs in roughly 11.25% of cases.

Conclusion

In the age group of 31 to 70, obstructive jaundice was the most common. Jaundice is a typical symptom of obstructive jaundice. Ultrasonography was the least expensive and least invasive examination to diagnose surgical jaundice. The most frequent cause of the blockage was CBD calculi, followed by cancer, the most frequent of which was pancreatic cancer, CBD benign stricture, and Mirizzi’s syndrome. In a benign disease, abdominal pain and jaundice were frequent. In cancer, jaundice, clay-coloured faeces, high-coloured urine, and itching were more prevalent.

In cancer, anaemia and weight loss were frequent occurrences. The presence of palpable GB implies a malignant aetiology. Malignancy frequently had abnormal coagulation profiles, high serum bilirubin and alkaline phosphatase values, low albumin levels, and reduced albumin levels. Open CBD exploration by trained professionals was a successful management strategy for obstructive jaundice. The cause of obstructive jaundice can be correctly identified early on by surgeons, who can then manage such patients with greater accuracy, improving both patient quality of life and survival rates. A better comprehension of these individuals’ clinical profiles can help with appropriate care and increase survival.

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Conflict of interest

There are no conflicts of interest to declare by any of the authors of this study.
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