Etiological spectrum and treatment outcome of Obstructive jaundice at Aseer Central Hospital in southwestern Saudi Arabia

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Abstract—

OBJECTIVE:

This study aims to discuss the etiological spectrum and treatment of obstructive jaundice at Aseer Central Hospital in southwestern Saudi Arabia

Introduction :

Obstructive jaundicecauses are numerousbut choledocholithiasis is the most common etiology. Treatment complications weren't reported a lot and serious ones are very rare.

METHODS:

We conducted this study at Aseer Central Hospital in southwestern Saudi Arabia. We collected data about Biological Variables, investigation results, etiology and Complications of treatment by reviewing the chosen files, and transcribed to a prespecified questioner depending on these main titles for each sample. SPSS software was used to analyze the data.

RESULTS:

We included 246 patients. There were 99 (40.2%) male and 147 (59.8%) female. The average of years of age was 48.4 with standard deviation 20.04. their illness duration's mean (SD) was 4.5 (18.1) month. There were 197 patients suffered from choledocholithiasis and136 patients treated with EPCR. There were 8 (3.3%) patients suffered from complications of treatment.

CONCLUSION:

Complications wasn't prevalent after the treatment of obstructive jaundice and the etiological spectrum wasn't different from those reported by other studies in other cities.

KEYWORDS:

Obstructive jaundice, biliary pressure, bilirubin, Aseer, Saudi Arabia, Etiology, treatment outcomes.

1 INTRODUCTION

Obstructive jaundice defined as clinical manifestation of an increased concentration of bilirubin in plasma with normal upper limit 17 μmol/L and more than 35 μmol/L to be detected clinically, due to mechanical obstruction in the extrahepatic biliary tree [1]. Obstructive jaundice is one of the most surgical illnesses related significantly to high morbidity and mortality especially that due to malignant etiology , but with early diagnosis and investigation will decrease morbidity, mortality ,and prevent secondary pathological changes [2,3] .The most frequent benign obstructive jaundice etiology is choledocholithias and malignant etiology is pancreas cancer [4,5], and the mortality and morbidity of biliary obstruction are dependent on the cause of the obstruction , so study of any factors which increase the morbidity and mortality in patients with obstructive jaundice in each society is necessary. In Najran which is a region located in southern of Saudi Arabia there is study done to study effectiveness of ultrasonography for diagnosis of obstructive jaundice caused by cancer of pancreas head , they found carcinoma of head of the pancreas and choledocholithiasis were significantly higher than other causes, and there is no difference between two genders in site of obstruction of the CBD , also cancer of pancreas head obstructive increased with age directly , and daffier by patient occupation [5] . Another recent study done by dr. MoawiaGameraddin and his colleagues in Sudan to assess the role of ultrasound in diagnosis of obstructive jaundice which shows significant difference between males and females regarding the causes of obstructive jaundice, by the way the study shows Ultrasound is use mostly to diagnose and assessing biliary system obstruction, because it was easy, available, accurate and noninvasive [6].Surgical complications of obstructive jaundice primarily consist of hemorrhage, impaired wound healing, renal disorders and septic complications which is cholangitis, abscesses, and leakage which are related high significantly with jaundiced patients [7]. Appropriate decisions ether that taken by surgeons or taken by patients will reflect treatment outcome and following complications. It is an important to screen etiologies of obstructive jaundice and assessing the treatment with identification causes that delay and effect its outcome, to our knowledge there is no previous study which has been done among Aseer region in The Kingdom of Saudi Arabia.

2 Objective:

Determining etiologies, Type of treatment was performed with determining causes of delay the treatment, and Complications

of treatment of obstructive jaundice at Aseer Central Hospital in southwestern Saudi Arabia.

3Methods:

3.1 Study design and sitting:

Retrospective, descriptive, comparativestudy with systemic randomized selection among all patients admitted to the surgical ward in Aseer Central Hospital under diagnosis of obstructive jaundice for the complete last year.

3.2 Selection criteria:

We included patients admitted to Aseer Central Hospital that were diagnosed by obstructive jaundice with no restriction to their language, race, age, color and religion.

3.3 Variables and data collection:

Data will be collected by review chosen files, and transcribed to a questioner will designed depending on these five main titles for each sample:

1- Biological Variables; sex, age, and illness duration.

2- Investigations results; serum bilirubin and alkaline phosphatase levels, ultrasonography (Stone, Biliary ductal dilatation, Tumor masses, lymph nodes, organomegaly, ascites etc.), CT scan abdomen, Endoscopic Retrograde Cholangiopancreatography (ERCP), Liver Biopsy.

3- Etiology of obstructive jaundice; Benign causes which are Choledocholithiasis, biliary strictures, chronic pancreatitis, amoebic hepatic abscess, or cause not identified and malignant causes which are carcinoma of head of pancreas, cholangiocarcinoma, carcinoma of gallbladder, peri-ampulary, or metastatic malignant lymph nodes in the portal hepatic.

4- Complications of treatment; surgical site infections, coagulopathy, renal failure, wound dehiscence, abdominal abscess/Peritonitis, hepatic coma, pneumonia, leakage of bile, or other.

3.4 Funding:

All the budget is covered by King Khalid University.

3.5 Statistical analysis:

statistical analyses were performed using SPSS 24 for Windows (SSPS Inc., Chicago, IL, USA). In order to compare the mean of age, gender, results of different investigations and their application when predicting perforated appendicitis, receiver-operating characteristic (ROC) curves were created for each endpoint. Two-sided "p-values" were considered to show statistical signify

cance when it was <0.05 for all statistical tests.

4 Results:

We included 246 patients that admitted to Aseer Central Hospital in southwestern Saudi Arabia. There were 99 (40.2%) male and 147 (59.8%) female. The average of years of age was 48.4 with standard deviation 20.04. their illness duration's mean (SD) was 4.5 (18.1) month. We found 65 participants with normal serum alkaline phosphatase level and 181 with a high level. There were 219 (89%) with high serum bilirubin level and 27 (11%) with normal level (table 1).

In table 2, we summarized the etiological causes of obstructive jaundice admitted to the hospital. Choledocholithiasis was the most preventable etiology followed by Pancreatic causes and biliary strictures.

In table 3, ultrasound results, CT, Endoscopic Retrograde Cholangiopancreatography (ERCP) and biopsy results that showed the initially diagnosis by a physician has a high rate of accuracy.

In table 4, types of treatment used and the number of complication among patients was discussed.

TABLE1
basic characteristics of participants:

Variable	Value
Total	246
Age in years: mean (SD)	48.4 (20.04)
illness duration in months: mean (SD)	4.5 (18.1)
Gender (%): Male Female	 99 (40.2) 147 (59.8)
serum alkaline phosphatase level (%)	
Normal (44 to 147 U/L)	65 (26.4)
High >147 U/L	181 (73.6)
serum bilirubin level	
Normal (0.2-1.2 mg/dL)	27 (11)
High >1.2 mg/dL	219 (89)

TABLE 2
etiology (%):

Variable	Value
Choledocholithiasis	197 (80.1)
biliary strictures	12 (4.9)
carcinoma of gallbladder	5 (2.0)
peri-ampullary tumors	4 (1.6)
Stone on GB	5 (2.0)
Pancreatic causes	18 (7.3)
Other	3 (1.2)

TABLE 3
investigations:

Variable	Value
Ultrasound (%):	
Performed and agreed with physician diagnosis	187 (76.0)
Performed and didn't agreed with physician diagnosis	44 (17.9)
Not performed	15 (6.1)
CT scan (%):	
Performed and agreed with physician diagnosis	54 (22.0)
Performed and didn't agreed with physician diagnosis	4 (1.6)
Not performed	188 (76.4)
Endoscopic Retrograde Cholangiopancreatography (ERCP) (%)	
Performed and agreed with physician diagnosis	43 (17.5)
Performed and didn't agreed with physician diagnosis	13 (5.3)
Not performed	190 (77.2)
Biopsy (%):	
Performed and agreed with physician diagnosis	10 (4.1)
Performed and didn't agreed with physician diagnosis	6 (2.4)
Not performed	230 (93.5)

Table 4
types of treatment and its complications:

Variable	Value
types of treatment (%)	
conservative treatment	22 (8.9)
ERCP	136 (55.3)
Laparotomy	14 (5.7)
Choledocholithotomy with or without Cholecystectomy	62 (25.2)
Referred	12 (4.9)
Complications (%)	
No complications	235 (96.7)
With complications	8 (3.3)

5 Discussion:

The etiology of obstructive jaundice is divided to extra-hepatic causes and intrahepatic (8). If physicians suspected obstructive jaundice the commonest etiology is choledocholithiasis as reported by other studies (8-10) and in this case ultrasound is the first choice for investigations (8). We found some pancreatic causes as Cancer of pancreas head, pancreatitis and Pancreatic pseudocyst. There were other causes as dilatation of common biliary duct, Mirrizzi syndrome and Cholingitis.

We found that physicians d iagnosis was agreed with the results of investigations with high rates (table 3) (11). The clinical diagnosis is rarely missed the presence of jaundice (12). when history and physical examination is performed carefully, it can give a primary picture whetherThis type of jaundice's origin is hepatobiliary or secondary to another disease (11).

A rational imaging investigation for the patient suffering from jaundice shows that imaging is important to diagnose obstructive type (14-15). Those imaging includes ultrasound (US), computed tomography (CT), magnetic resonance imaging (MRI) and radionuclide cholescintigraphy (CS) (16). the least-invasive and cheapest technique for radiographic evaluation of obstructive jaundice is US and its sensitivity is about 55% to 95% and specificity about 71% to 96%, it can show the dilated biliary ducts indicative of extrahepatic biliary obstruction (17).
Those complications that was reported varied from surgical site infection, wound dehiscence. The most serious complication that was reported in only one patient was Renal failure and the most preventable reported in 6 patients was Coagulopathy.
There were some limitations of this study such as the short period of time, applying to one hospital, number of patients was small and lack of fund.
On the other hand, there are a lot of strength points, it discussed one of the most prevalent diseases among Saudi patients and in an area, that lack of research studies.

6 Conclusion:

Choledocholithiasis was the most preventable etiology of obstructive jaundice as well ERCP was the most used treatment. Complications weren't preventable. We recommend to have further researches on complications anddifferent method of obstructive jaundice treatment.

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