

A Case of Obstructive Jaundice Secondary to Periapillary Mass with Diabetes Mellitus

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Abstract:

Introduction: Conjugated hyperbilirubinemia due to any form of hepatobiliary disease is essentially the result of impairment in bile formation or bile flow, a condition known as cholestasis. The most common cause of cholestatic jaundice is the presence of gallstones (cholelithiasis), tumors, trauma, cysts and inflammation in the bile ducts.

Case: A 64-year-old Malay man was admitted to HUSM complaining of abdominal pain which radiated to the back for about one month. The pain was localised at the right hyperchondrium and epigastric and was colicky in nature. Patient was admitted to surgery ward due to obstructive jaundice secondary to unknown cause initially but was later found out to be due to periampillary mass. Patient has type II diabetes mellitus from last 12 years.

Discussion: Study showed surgery in patients with obstructive jaundice caused by a periampillary (pancreas, papilla, distal bile duct) tumor is associated with a higher risk of postoperative complications than in non-jaundiced patients. Preoperative biliary drainage (PBD) was introduced in an attempt to improve the general condition and thus reduce postoperative morbidity and mortality.

Conclusion: Time is crucial in treating obstructive jaundice. Vigorous treatment should be given to this patient promptly to prevent any further complication. Patient should be switched on insulin, in case of diabetes.

INTRODUCTION:

Conjugated hyperbilirubinemia due to any form of hepatobiliary disease is essentially the result of impairment in bile formation or bile flow, a condition known as cholestasis. Cholestatic jaundice is often accompanied by a broad spectrum of laboratory, clinical and histological abnormalities.¹ The most common cause of cholestatic jaundice is the presence of gallstones (cholelithiasis), tumours, trauma, cysts and inflammation in the bile ducts.^{2,3}

Laboratory abnormalities include increased serum levels of alkaline phosphate and gamma-glutamyltransferase (GGT) and variable elevation of bilirubin, cholesterol, lipoprotein X, and serum bile acids, as well as of prothrombin time, which is corrected by vitamin K supplementation.¹ There is minimal or no elevation of aminotransferase. Clinically, pruritis, fatigue, xanthomas, back pain from osteoporosis, pale stools or even steatorrhea may be present in cholestatic jaundice, with evidence of fat-soluble vitamin deficiency. Complications of cholestatic jaundice include sepsis especially cholangitis, biliary cirrhosis, pancreatitis, coagulopathy, renal and liver failure.⁴

CASE DESCRIPTION:

A 64 year old Malay male, was admitted to Hospital Universiti Sains Malaysia (HUSM) with complaining of abdominal pain which radiated to the back for about one month. The pain was localised at the right hyperchondrium and epigastric. The pain was also worsening since evening and colicky in nature. The patient has been having on and off fever, dark yellow coloured urine and pale stool but denied of vomiting. Furthermore, patient was noticed jaundice and loss of appetite for the past week and had lost 5 kg body weight over the past 3 months.

He was known to have diabetes mellitus type 2 since five years ago and was taking oral hyperglycemic agent (Tablet Metformin) and followed up in HUSM. From last six months, patient was default from treatment, while denied of taking any other traditional medicines.

On examination, patient presented alert, conscious and jaundice. Vital signs were blood pressure 140/72 mmHg, pulse 78 beats/min and temperature 37°C. Pupil examination showed equal and sclera looked jaundice. Chest examination revealed clear symmetrical lung sounds bilaterally with no wheezes, rhonchi or rales. Cardiac examination showed normal heart sounds without murmurs, rubs or abnormal rhythm. Abdominal examination showed tenderness on right hyperchondrium and epigastric pain with negative Murphy's sign.

Laboratory findings were normal except for total bilirubin of 272 (normal range 5.1-19 µmol/L), AST 64 (normal range 7-40 U/L), ALT 104(normal range 7-56 U/L), alkaline phosphatase 435 (normal range 35-130 IU/L), hemoglobin 10.9 (normal 14-18 g/dL) and white blood cell 87 (normal range 4-11x 10⁹/L). Capillary blood sugar was 10.9 (3.9-6.1 mmol/L).

Ultrasound of hepatobiliary system (HBS) showed biliary obstruction but unable to rule out cause. The liver was homogenous in echotexture with smooth margin. Intrahepatic, common bile (no stones within) and pancreatic duct dilated. Gallbladder well distended with no calculi within, wall thickening or pericholecystic collection. CT abdomen scan was later planned and result showed periampillary mass.

Patient was admitted to surgery ward due to obstructive jaundice secondary to unknown cause initially but was later found out to be due to periampillary mass before discharged. Treatment plan carried out including continuous monitoring of patient condition and blood sugar,

administration of IV Tramadol 50 mg TDS, IV Cefoperazone 1g BD and IV Metronidazole 500mg TDS.

DISCUSSION:

Jaundice is a yellowish staining of the skin, sclera and mucous membranes by deposition of bilirubin (a yellow orange bile pigment) in these tissues. Jaundice indicates excessive levels of conjugated or unconjugated bilirubin in the blood and is clinically apparent when the bilirubin level exceeds 2mg/dl (34.2 μ mol per L). It is most apparent in natural sunlight. In fact, it may be undetectable in artificial or poor light.²

To diagnose as obstructive jaundice, the patient's stools are pale (clay-coloured if obstruction is complete), bilirubin in urine with little or no urobilinogen and skin itches. Besides, patient has high blood levels of conjugated (posthepatic) bilirubin and his alkaline phosphatase is very high. These features are most marked in complete obstruction, as when carcinoma blocks the common duct. Based on the patient presentation, we can confirm that the patient is suffering from obstructive jaundice since it fulfils the criteria.

After the CT abdomen scan was done, the result shows that the obstructive jaundice occurs due to the presence of periampullary mass. Periampullary mass is a tumor that forms near the ampulla of Vater, an enlargement of the duct from the liver and pancreas where they join and enter the small intestine.⁵ Ampullary tumors generally present at an earlier stage than periampullary tumors. Their strategic location may cause early biliary obstruction with jaundice (75%), biliary colic, bleeding or pancreatitis. Serum bilirubin and transaminase typically are elevated.⁶ This clinical presentation will often lead to an ultrasonography confirming extra-hepatic biliary obstruction and to an Endoscopic Retrograde Cholangiopancreatography (ERCP).^{4,5}

Study showed surgery in patients with obstructive jaundice caused by a periampullary (pancreas, papilla, distal bile duct) tumor is associated with a higher risk of postoperative complications than in non-jaundiced patients.⁶ Preoperative biliary drainage (PBD) was introduced in an attempt to improve the general condition and thus reduce postoperative morbidity and mortality. Early studies showed a reduction in morbidity.^{1,5} However, more recently the focus has shifted towards the negative effects of drainage, such as an increase of infectious complications.⁶ Whether biliary drainage should always be performed in jaundiced patient's remains controversial. The randomized controlled multicenter DROP-trial (DRainage vs. Operation) was conceived to compare the outcome of a 'preoperative biliary drainage strategy' (standard strategy) with that of an 'early-surgery' strategy, with respect to the incidence of severe complications (primary-outcome measure), hospital stay, number of invasive diagnostic tests, costs, and quality of life. As a result of the study of

'Preoperative biliary drainage (PBD) for periampullary tumors causing obstructive jaundice; DRainage vs. (direct) OPERATION (DROP-trial)', it shows that the concept of PBD has been developed to reduce the postoperative morbidity and mortality in patients with obstructive jaundice, caused by a suspected pancreatic/periampullary malignancy.⁵ However, PBD, either endoscopic or percutaneous, is associated with an increased incidence of postoperative morbidity (mostly infectious complications) and postoperative mortality when performed prior to a pancreatoduodenectomy. Furthermore, the techniques used for PBD harbour their own complications. Therefore, the overall conclusion not to routinely perform preoperative biliary drainage seems evident. Nevertheless, still the majority of these patients undergo preoperative drainage, often preceded by a diagnostic endoscopic retrograde cholangiopancreatography (ERCP).^{7,8}

For diabetes mellitus type 2 conditions, the patient defaulted of taking medication Metformin 6 month ago, proper counselling has to give to this patient. Diabetes is a proven risk factor for pancreatic carcinoma, where as current patient shows irresponsible attitude to oral therapy even, where as insulin is recommended.⁹

CONCLUSION:

After being diagnosed as having obstructive jaundice due to the presence of periampullary mass, Proper treatment should be given to this patient promptly to prevent any further complication. Oral hypoglycaemic agent should be switch on Insulin.

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