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Management of Obstructive Jaundice in Pregnancy, Secondary to Choledolithiasis with Cholelithiasis: A Challanging Scenario

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Abstract **Introduction**: Jaundice in pregnancy is a yellow discoloration of the skin and mucous membranes associated with liver malfunction. Jaundice is second most common complication after hypertension. The common causes of jaundice in pregnancy are choledolithiasis and cholelithiasis. Pregnancy alters the composition of bile so risk factors are also increased during pregnancy. For educational point of communication, present study will emphasize the importance of safety of foetus and uterus even when risk factors are at great concern. Decision by gynaecologist regarding early induction of delivery to start mechanical procedures to treat secondary diseases is focal point point of study. **Case Report**: A 36 year old lady with obstructive jaundice in pregnancy secondary to choledolithiasis with cholelithiasis was admitted to Hospital University Sains Malaysia. Antibiotics were given to the patient as a prophylaxis. There's no procedure can be done to the patient during pregnant, until post-delivery, ERCP was planned. During last admission, the patient was discharged with TCA after 2 weeks, with plan for laparotomy cholecystectomy later. **Conclusion**: Strategic approach and high aesthetic professional sense is required while dealing with pregnancy. Foetus and uterus safety should be prime goal before proceeding any medication or surgical procedure. ERCP is also a valuable procedure to treat gallstones obstruction, and laparatomy cholecystectomy is the last procedure that can be done to remove the gallstones.

Keywords Management, Obstructive Jaundice, Choledolithiasis, Cholelithiasis

1. Introduction

Jaundice in pregnancy is common complication and can be treated in routine manner. Formation of gallstones in bile duct (cholidolithiasis) and in gall bladder (cholilithiasis) along with jaundice in pregnancy is pertinent figure owing to risk for foetus. Many studies have revealed that 60-90 % pregnant women having gallstones were asymptomatic and it diagnosed in routine perinatal check-up.[1] Pregnancy is one of contributing factor for the formation of cholesterol gall stone which is reported in 3.3 to 12.2% pregnant women.[1-3] Furthermore, it also occur due to blockage of the bile ducts that decreases the flow of bile and bilirubin from the liver into the intestines. In common, bile ducts can be blocked by cancer, gallstones, or inflammation of the bile ducts. The common causes of jaundice in pregnancy are choledolithiasis and cholelithiasis.[2,3]. Several reports have indicated increased prevelance of gallstones in pregnancy.[4].

Surgical approach during pregnancy has never been accepted from safety point of view of foetus and uterus. It is usually recommended to defer the surgery until delivery is done safely. In unavoidable circumstances, few techniques like Endoscopic Retrograde Cholangiopancreatography (ERCP) and laparoscopic techniques have been introduced. High level of controversy exists regarding complications of foetus and uterus safety associated with ERCP and open cholecystectomy are existing.[5,6] With the intervention of new techniques having less complications like laparoscopic technique for appendectomy have resolve these issues and made surgical procedure easier. In the same manner, a lot of intervention has been done in ERCP to enhance its acceptance and increase popularity among surgeons. Tremendous intervention has been done in ERCP from safety of foetus and uterus point of view when especially done in seconed and third trimester in consultation with obstetricians.[7,8] The aim of this study is to highlight the benefits of new intervention techniques with respect to safety of mother and baby. Furthermore, this study will highlight the importance of appropriate decision with respect to time

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of delivery, proper selection of surgery techniques; close mooring of fetus especially in third trimester and early recourse to delivery prior to demise occure. For all this asthetic professional approach of surgeon can be a key factor in successful management of pathologically disturbed case.

2. Case Report

A 36 years old lady, was admitted in Hospital for Endoscopic Retrograde Cholangiopancreatography (ERCP) due to obstructive jaundice secondary to choledolithiasis with cholelithiasis. During admission, patient was comfortable, while jaundice is improving. There's no pruritus, no tea colour urine, no pale colour stool, and no abdominal pain. Hepatobiliary scintigraphy (HBS) test shows 0.9 cm stone noted in mild Common Bile Duct (CBD) and 1.1 cm stone noted in Gallbladder (GB). ERCP cannot be done during the admission due to patient pregnancy. Patient was readmitted due to Jaundice in pregnancy, which was worsening with increase yellowish discoloration of sclera. After 33 weeks of pregnancy, Emergency Lower Segment Caesarean Section (EMLSCS) has been done for acute fetal distress with choledolithiasis. Baby's weight is 2.3 kg, HBS test also being done with result of cholelithiasis with increase dilatation of bile duct. Patient was discharged after one week, with T. Zinnat 250 mg twice daily, T. Flagyl 400 mg three times daily, T. Folic Acid 1 tablet daily, and T. Ferrous Fumerate 200 mg twice daily.

There is no family history of Jaundice in pregnancy secondary to choledolithiasis with cholelithiasis, and also no known drug allergy. Patient doesn't have any smoking or alcohol drinking history. Upon admission, blood glucose level shows 110/60 mmHg, pulse rate shows 70 beat per minute, and body temperature was normal. Laboratory data, ALP is 527 UI/L (Normal = 34 – 100 UI/L), ALT is 72 UI/L (Normal = 0 – 34 UI/L), and AST is 36 UI/L (Normal = 5 – 35 UI/L). Marked elevation of ALT and AST suggests inflammation of the liver. Elevation of ALP suggests disease or obstruction of the bile ducts.

After 1 month of EMLSC the patient went to HRPZ for ERCP. Before ERCP procedure, patient has been given IV Cefobid 1g stat and IV Flagyl 500 mg stat. ERCP result shows bulging, gallbladder stone and distal common bile duct stone. One large yellowish stone has been removed out with balloon. There is no other medication given in ward. Patient was discharged with T. Zinnat 250 mg twice daily and T. Flagyl 400 mg three times daily, for one week. The patient was discharged with TCA after 2 weeks, and plan for laparotomy cholecystectomy later.

3. Discussion

Jaundice usually can be diagnosed by many tests, but physical examination is important as well. Episodes of abdominal pain associated with jaundice suggests blockage of the bile ducts, usually by gallstones. Measurement of bilirubin in blood can be helpful in determining the causes of jaundice. Marked elevation of unconjugated bilirubin relative to the elevation of conjugated bilirubin in the blood suggests hemolysis. Marked elevation of liver test (AST and ALT) suggests inflammation of the liver. Elevation of the ALP suggests disease or obstruction of the bile duct. Another test is ultrasonography, Ultrasonography is a simple, safe, and readily-available test that used sound waves to examine the organs within abdomen, which can reveal gallstones, tumor in the liver or pancreas, and dilated bile ducts due to obstruction by gallstones. Other than that, ERCP is also effective to be used in diagnosing jaundice. ERCP provides the best means for examining the bile duct. Other than that, the common bile duct stone can be treated by IV antibiotics, as it is employed in this case, which is IV Cefoperazone 1 g twice daily, and IV Flagyl 500 mg three times daily. Antibiotic is essential for jaundice in pregnany in order to prevent infection in high risk patients. It is indicated prophylaxis of post-operation infection in patients undergoi ng abdominal & gynaecological surgery. Metronidazole is indicated for intra-abdominal infections and also surgical prophylaxis. Both antibiotics are category B listed drugs in pregnancy medicines. Patient was discharged with tablet cefuroxime 250 mg (2^{nd} generation Cephalosporin) twice daily and tablet metronidazole 400 mg three times daily. T. Zinnat is Cefuroxime, a broad spectrum Cephalosporin. Critically observing discharge drugs, there is no point to shift the patient from extended spectrum drugs to broad spectrum. Cefoperazone has better coverage of gram –ve bacilli as compared to cefuroxime. Alternative approach demands the use of antibiotic with same spectrum as amoxiclav could be second option.

However, once the patient has been diagnosed of having Jaundice secondary to Choledolithiasis with Cholelithiasis, ERCP was not been done due to pregnancy. ERCP only has been planned for post-delivery.Many studies have reported the role of ERCP in pregnancy.[9,10] Opinions regarding the safety of ERCP during pregnancy differ in various reports, reflecting the relatively limited data. Major concerns surround issues related to radiation exposure to the fetus and the risk of the procedure on pregnancy outcome. Few ERCP-related complications to the mother or fetus have been reported. Due to ERCP 29 feotus loss have been reported.[10] Procedure timmings during pregnancy have been controversial but data suggest 2^{nd} trimester as safe for ERCP to be performed.[11] Only risk factor for ERCP is teratogenic effects of radiations which lead to abortion.[10] However this problem can be overcome by using lead protective sheath on uterus to avoid radiation exposure. In one study, ERCP was done in 2^{nd} and 3^{rd} trimester on eight pregnant women and successful results were obtained when all of the deliveries wer full term deliveries.[12] All the ERCP was done by using lead sheath to avoid radiations. ERCP safest result of this study can be compared with other studies[13, 14] which support and justify the ERCP in 2^{nd} and 3^{rd} trimester of pregnancy. Literature have supported not only ERCP in 2^{nd} and 3^{rd} trimester but also evident of

Laparoscopic Cholecystectomy (LC).[12] Considerable number of case reports and ERCP procedure supported the ERCP done in 2nd and 3rd trimester have favorable outcomes. [15-17]

Surgery procedures have been avoided during pregnancy to avoid any foetus or uterus loss. A general principle in the care of women with choledolithiasis with cholelithiasis during pregnancy is to provide the most conservative management possible with the hope of delaying intervention until after pregnancy or until the second trimester, when surgical intervention is relatively safest. Now not only knowledge is updated but also therapeutic interventions have been introduced with updates and modifications with respect to their safety profiles. Coservative approach regarding treatment of cholidolithiasis results in frequent emergency visits to hospital.[18] So why to wait for delivery to happened first and then to start mechanical procedures. In present case study, patient was allowed to wait for induction of labour first and then ERCP was done. Patient was having secondary disease due to pregnancy. Here surgeon can take some initiative to provide early relief to patient by doing ERCP in 2nd or 3rd trimester while its safety is also reported in literature. Thus present study emphasizes on the need of prompt, appropriate decision and professionally asthetic approach of surgeon is required to increase the quality of life of pregnant women.

4. Conclusions

The jaundice in pregnancy is a common disorder in women during pregnant. It is usually associated with gallstones, either in the gallbladder or in common bile duct. Proper antibiotic selection with respect to spectrum is required. ERCP is also a valuable procedure to treat gallstones obstruction, and laparatomy cholecystectomy is the last procedure that can be done to remove the gallstones in pregnancy. It is important to make decision in context with time of delivery, proper selection of surgery techniques, close monitoring of foetus especially in third trimester and early recourse to delivery prior to demise occurred. For all this aesthetic professional approach of surgeon can be a key factor in successful management of pathologically disturbed case.

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