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Case Report *Volume 6 Issue 1*

Acute Pancreatitis with Pregnancy

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Abstract

Acute Pancreatitis (AP) in pregnancy is a rare but serious event occurring between 3 in 10000 pregnancies. The spectrum of AP in pregnancy varies from mild to severe pancreatitis. Severe pancreatitis might be associated with multiple organ failure, pancreatic abscess, pseudocyst and necrosis. The commonest cause for AP in pregnancy is gallstones (60%-100%). Signs and symptoms of gall bladder disease precedes acute pancreatitis. The diagnosis is usually difficult due to physiological changes in pregnancy. The clinical features, laboratory investigations like serum amylase and lipase and imaging techniques such as ultrasonography, magnetic resonance cholangiopancreatography helps in diagnosis. Mild AP in pregnancy is usually managed conservatively while severe AP requires management in intensive care unit. Therapeutic modalities like endoscopic sphincterotomy, biliary stenting and laparoscopic cholecystectomy are major milestones in management of severe acute pancreatitis in pregnancy. When properly managed AP in pregnancy is not associated with bad prognosis as in past.

Keywords: Acute Pancreatitis; Cholecystectomy; Cholelithiasis; Pregnancy; Pancreatitis in Pregnancy

Abbreviations

AP: Acute Pancreatitis; CBD: Common Bile Duct; EUS: Endoscopic Ultrasound; MRCP Magnetic Resonance Cholangiopancreatography; ERCP: Endoscopic Retrograde Cholangiopancreatography.

Introduction

Acute pancreatitis is defined as inflammation of pancreas involving peripancreatic tissue. AP (acute pancreatitis) during pregnancy is rare but serious condition when associated with pregnancy. The incidence is 2- 3 in 10000 pregnancies. Acute Pancreatitis is usually prevalent in advanced gestational age occurring more commonly in second and third trimester or in early postpartum period [1-3]. Although rare AP can occur in 1st trimester and always should be distinguished with hyperemesis gravidarum [4]. The spectrum of AP in pregnancy ranges from mild to severe pancreatitis. Severe pancreatitis can be associated with necrosis, abscess, pseudocyst and multiple organ failure.6Older review of AP in pregnancy reported high maternal and fetal mortality in pre-endoscopic era. It was always associated with greater concerns as it deal with two lives. Diagnostic studies such as endoscopic ultrasound, magnetic resonance cholangiopancreatography and endoscopic retrograde cholangiopancreatography and therapeutic modalities that include endoscopic sphincterotomy, biliary stenting, common bile duct (CBD) stone extraction, and laparoscopic cholecystectomy are major milestones in gastroenterology. When properly managed AP in pregnancy does not carry poor prognosis as in the past [4].

Case Report

A unbooked G3P2L1 reported to hospital emergency on 07/03/2023 with h/o Amenorrhea of 7 months and complaining of pain in abdomen since 3 hours. Pain was in epigastric region and lower abdomen and radiating to the back. but more in epigastric region. Obstetric history - she was gravida 3 para 2, living 1 - G3P2L1- 1st- was lscs at 36 weeks, had preterm premature rupture of membranes, baby alive and well, 4 years old, 2nd was - hysterotomy at 30 weeks as she had intra uterine death of baby due to abruptio placentae. M/H- previous cycles regular LMP- was not sure, gestational age as per first ultrasound was 33 weeks there was no h/o leaking/ bleeding pv, vomiting, she was not able to sleep due to epigastric pain. This was the first episode of sudden abdominal pain, there was no previous ultra sound abdomen available with the patient .On clinical examination she was conscious, well oriented, afebrile, vitally stable with pulse 90/min, bp 120/80 mm Hg, RR 15/min, O_2 saturation 99 on room air, she had discomfort due to pain.

P/a- uterus was 34 weeks, no tenderness, guarding or rigidity, no scar tenderness, vertex presentation, CTG- reassuring with FHR 142/min with normal beat to beat variability and accelerations, uterine contractions also observed on CTG 1-2 in 10 min, She was admitted with clinical diagnosis of G3P2L1 previous hysterotomy, previous LSCS 33 weeks with acute abdomen? acute gastritis? acute pancreatitis with pre-term labor and was investigated and medical treatment started

Investigations

Her investigations on day of admission-CBC, urine routine, HbsAg. hepatitis C- WNL, serum amylase- raised 123, serum lipase- raised 77, LFT- SGPT- 166, SGOT-106, BILIRUBIN-WNL

USG- ABDOMEN AND OBSTETRIC- Single live intra uterine pregnancy corresponding to 35 weeks, liquor avg, fhr 144/min, wt. 2.5 gm± 375 gms.

USG ABDOMEN- Small GB calculus, Bulky visualized proximal pancreas --? early acute pancreatitis. No free fluid in abdomen

Patient was admitted and managed conservatively for preterm labor and acute pancreatitis in liaise with the gastroenterology. Patient was evaluated by gastroenterologist as per BISAP score system and graded the patient as zero with the risk of mortality of less than one percent. with tocolytic, Nifedipine oral tablet and injection Betamethasone was given. Injection Paracetamol 1 gram was given. Patient was kept nil per oral, IV fluids and injection Pantoprazol IV were given.

The patient responded to nifedipine, and her uterine contractions stopped in 8 hours, she was continuously monitored with cardiotocogram. Serum amylase and lipase was repeated the next day, and it was 206 and 272.

The patient was asymptomatic in 2 days and was discharged on, medical management on tablet pantoprazole 40 mg od. Patient came to follow up after 6 days.

The patient again presented to the hospital after a fortnight with upper abdominal pain and labor pains. Admission was made and investigations repeated. Serum Lipase, Amylases AST And ALT were all marginally high, CTG was non reassuring (uterine contractions with reduced beat to beat variability of less than 5 beats per minutes, with sudden decelerations), hence patient was taken up for emergency lscs. Intra-op uterine dehiscence was noted in the left lateral wall of the uterus, grade 2 meconium seen with a loop of cord around the neck of the baby. The baby cried immediate after birth. Patient withstood the procedure well and was discharged on day 3. Post-operative period was uneventful.

Follow Up

Patient followed up surgical wound (lscs scar) healthy. Here serum amylase and serum lipase should a decreasing trend. And was on tab pataprozol 40 mg OD

Discussion

The most common causes of AP in pregnancy are gallstones (65%-100%), alcohol abuse and hypertriglyceridemia. 10 Above all the commonest cause is biliary which is caused by gallstones or sludge. The incidence of gallstones varies with ethnicity. It is lesser in Asians and Africans than in native Americans. The rare causes are hyperparathyroidism, connective tissue diseases, abdominal injuries and iatrogenic caused by medications (diuretics, antihypertensives) [3,4]. Pregnancy does not primarily predispose the pregnant woman to pancreatitis, but it does increase the risk of cholelithiasis and biliary sludge [3,5].

Acute pancreatitis in pregnancy presents in a similar way as during non-pregnant state However, it is difficult to diagnose in pregnancy due to similarity to many acute abdominal illnesses. The signs and symptoms of gall bladder disease usually precedes pancreatitis such as colicky abdominal pain radiating to right flank, scapula, and shoulder. It is rapid in onset with maximum intensity in 10-20min. This is an atypical symptom of gall bladder disease. Also, there can be anorexia, nausea, vomiting, dyspepsia, low grade fever & fatty food intolerance [3,5].

Physical Examination

In moderate to severe disease patients appear acutely ill lying with limbs flexed (fetal position). There might be fever, tachycardia, dyspnea, low blood pressure due to loss of fluid in third space. On abdominal examination there might be tenderness guarding and rigidity, sluggish or absent bowel sounds. The altered acid base balance can lead to fetal hypoxia. Severe and sustained hypoxemia can lead to fetal demise [3,4].

Diagnosis of Acute Pancreatitis

AP is usually diagnosed by symptomatology, laboratory investigations and imaging.

Laboratory Diagnosis

i) Serum amylase and lipase (increased by three-fold).
ii) Amylase starts rising within 6-12 hours of onset of disease and remains elevated for 3 to 5 days. But it is nonspecific. Serum lipase starts rising within an hour and remains high for longer time than amylase. Lipase is more specific to amylase [5,6].
iii) Amylase to creatinine clearance ratio may be helpful in pregnancy. (ratio >5% suggests acute pancreatitis) [6].
iv) Increase in Serum aminotransferase levels (more than 3-fold rise) is very suggestive biochemical marker pancreatitis [4,5].
v) Any changes in liver enzymes and bilirubin should suggest biliary aetiology [5].

Imaging techniques

i) Abdominal ultrasound: - is safe in pregnancy and detects dilated pancreatic duct, pseudocysts and focal accumulation more than 2-3cm. It can also detect gall bladder stones. But insensitive for detection of stone or sludge in CBD.
ii) EUS: Endoscopic ultrasound:-can detect stones in CBD even <2mm or sludge. It has a high positive predictive value. It can be done under mild sedation and is safe in pregnancy. EUS is appropriate prior to therapeutic ERCP.
iii) MRCP (*Magnetic resonance cholangiopancreatography*): - can be used if USG is inconclusive. There is paucity of data regarding safety of MRCP in 1st trimester.
iv) ERCP (*Endoscopic retrograde cholangiopancreatography*):- has lost its value because of risk of radiation. ERCP should only be used in selected cases of CBD stones or sludge. In cases of severe acute biliary pancreatitis ERCP within 24hours is recommended to decompress CBD, removal of gall stones and subsequent papillotomy. ERCP should be done by experienced endoscopist and radiologist with confirmed diagnosis. The fetus should be shielded all the time during procedure to minimize exposure [5].

Management

Management of AP depends on four questions.
i) Does the patient has AP (Diagnosis)?
ii) If AP, what is predicted severity?
iii) Is there biliary etiology?
iv) Which is the trimester of pregnancy?

Conventional Treatment

Fluid resuscitation, oxygen, analgesics, antiemetics, monitoring of vital signs and estimation of fetal heart rate.

Nutrition: Enteral nutrition by NJ feeding is better than TPN (total parenteral nutrition) in patients with severe AP. Keeping patient nil by mouth might increase the risk of infection. Early enteral nutrition should be started as it is physiological preferably in 1st 48 hours. It helps the gut flora maintain the gut mucosal immunity, reduced translocation of bacteria, while simultaneously avoiding all the risks of TPN [5].
Antibiotics: There is a lot of controversy regarding the use of antibiotics in AP. It might be protective against non-pancreatic infections. Antibiotics which are safe in pregnancy can be administered. The therapy should be modified to reflect the organisms recovered in blood cultures and the clinical status of the patient [5].

Mild pancreatitis, usually resolves in 7 days. Among all, 10% of patients have severe course and they are best managed in intensive care unit. In severe pancreatitis hypovolemia is common due to loss of fluid in third space. It can lead to organ hypoperfusion to the tissue resulting in multiple organ failure [7]. Hence patients of severe AP to be managed in intensive care unit with meticulous hydration therapy.

Management of Underlying Cause

Management of Gallstones

Surgical management is best for patients who failed to respond to conservative management. For surgical management major decision is for
a) choice of procedure
b) timing and approach of cholecystectomy

The factors which influence surgical decision are trimester of pregnancy, presence or absence of CBD dilatation, cholangitis and severity of AP. Cholecystectomy can performed in all trimesters but preferably in second trimester. Studies show that both laparotomy and laparoscopy have similar results. But morbidity is less with laparoscopic cholecystectomy

[3,5]. Guidelines by Society of Americans Gastroenterologist and Endoscopic Surgeons for laparoscopy in pregnancy (2011)are

- open technique for insertion of trocar
- iavoid high intraperitoneal pressure
- left lateral position of patient to prevent aortocaval compression
- use of electrocautery cautiously and away from uterus

Early cholecystectomy needs to be performed in mild acute biliary pancreatitis. In severe acute biliary pancreatitis and in cholangitis this procedure should be done within 4-6weeks. Meanwhile ERCP with sphincterotomy with fetal shielding and clearance of CBD stones is indicated.6,8 Some advocate biliary stent placement rather than performing sphincterotomy. However, stenting carries risks of stent occlusion and cholangitis and the need for a second procedure. terotomy and stone extraction and therefore, eliminating complications that accompany sphincterotomy.

The sterile necrosis of pancreas is treated with antibiotics and necrosecotomy [5].

Prognosis

Mild acute pancreatitis when managed conservatively has excellent prognosis. In older days severe cases of acute pancreatitis were associated with high maternal and perinatal mortality. In 1973 Wilkinson, et al. [8] noted 30% maternal and 60% fetal mortality in cases of severe AP [8]. The mechanism of fetal demise includes placental abruption, profound metabolite disturbance leading to acidemia. But over the decades perinatal morbidity and mortality has reduced due to improvement in neonatal intensive and supportive care. In 2005 Sunil Kumar, reported 8 patients of acute pancreatitis in pregnancy over span of two years. Out of eight three underwent laparoscopic cholecystectomy and five were treated conservatively. All patients recovered well and delivered at term with good neonatal outcome [4].

In other study by Talukdar and Vege [9] the perinatal death rate was <17% and was similar for maternal mortality in India.9 The outcome of pregnant patients with AP has substantially improved with technical advances in imaging and therapeutic endoscopy.

Conclusion

Acute pancreatitis in pregnancy is rare but severe disease. AP usually occurs during third trimester or early postpartum period. The most common cause for AP is gallstones (65%-100%). The diagnosis of AP in pregnancy is not specific. The signs and symptoms of acute biliary pancreatitis like colicky abdominal pain or epigastric pain radiating to the back, nausea, vomiting, dyspepsia precedes the disease. Diagnosis is usually based on the clinical presentation, laboratory investigations and imaging methods performed cautiously. In mild AP treatment is conservative and usually resolves in 7 days. 10% of patients have severe pancreatitis. Severe pancreatitis is to be managed in intensive care unit and with endoscopic and surgical intervention. Endoscopic sphincterotomy, biliary stenting, CBD stone extraction and laparoscopic cholecystectomy are the major milestones in the management of severe acute pancreatitis in pregnancy. When properly managed acute pancreatitis doesn't have bad prognosis as in past [10,11] .

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