

Acute pancreatitis in pregnancy – Nip in the bud

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Introduction

Evidence is emerging globally with regard to successful outcome of acute pancreatitis in pregnancy (APIP), but cases have hardly been reported in Sri Lanka. The importance of early diagnosis, exclusion of differential diagnosis with an unfavourable prognosis in pregnancy, and supportive therapy is highlighted in this rare case of APIP.

Case history

A 25 year old woman in her second pregnancy, who had been treated with oral domperidone and omeprazole two days earlier, was admitted at 34 weeks and 3 days of gestation with worsening of her symptoms of backache and right sided chest pain. She has had an uncomplicated antenatal period until then, and has had no medical problems. The results of the initial haematological and biochemical investigations are given in Table 1.

Abdominal ultrasound scan which was performed to look for a possible cause revealed signs of focal pancreatitis in the body and tail, but failed to reveal

gall stones. Serum amylase and lipase levels were 1152 U/L and 515 U/L respectively (corresponding trimester specific normal ranges are 15-81 and 5-148 respectively). Pre-eclampsia with severe features, acute fatty liver of pregnancy, and in view of the backache, abruption of a posteriorly located placenta were clinically excluded, and a diagnosis of APIP was made. The opinion of the gastroenterology team was sought, and it was classified as mild to moderate pancreatitis according to revised Atlanta criteria³. The woman was managed with supportive therapy with opioid analgesics, intravenous fluids and later with a fat free diet. Three days following admission, the membranes ruptured, and in view of the possible increased risk of sepsis, a decision was made to induce labour with prostaglandins as opposed to expectant management. An emergency caesarean delivery was performed eight hours into labour due to lack of progress. A baby girl weighing 2.25 kg was delivered with Apgar scores of 9, 10 and 10 at birth, 1 and 5 minutes respectively. The woman received care in the intensive care unit in the immediate postpartum period (eight hours) and was transferred to the postnatal ward where her condition and biochemical abnormalities gradually improved over the week following delivery.

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Table 1. Results of initial haematological and biochemical investigations

| Test | Result | Normal range during the third trimester of pregnancy |
|------------------------|-------------|--|
| Alanine transaminase | 72 U/L | 2-25 |
| Aspartate transaminase | 67 U/L | 4-32 |
| Total bilirubin | 49 µmol/L | 1.7-18.8 |
| Direct bilirubin | 12 µmol/L | 0-1.7 |
| Serum bile acids | 16.4 µmol/L | 0-11.3 |
| Haemoglobin | 9.9 g/dL | 9.5-15 |
| Blood urea | 14.3 mg/dL | 3-11 |
| Serum creatinine | 47 µmol/L | 35-80 |
| Serum sodium | 135 mmol/L | 130-148 |
| Serum potassium | 3.6 mmol/L | 3.3-5.1 |
| INR* | 0.97 | |

*INR – International Normalised Ratio

The baby was treated with intravenous antibiotics for five days for presumed sepsis, and was discharged from the neonatal intensive care unit seven days following birth. The woman had an uneventful recovery in the puerperium and has undergone laparoscopic cholecystectomy for a gallstone detected on subsequent imaging studies. One and a half years following the episode, she has embarked on her third pregnancy and is now at 11 weeks of gestation.

Discussion

This case provides ample evidence for a favourable outcome following early diagnosis of acute pancreatitis which is an evolving disease in pregnancy. A diagnosis of APIP is made in the presence of at least two of the following: (1) acute upper abdominal pain radiating to the back; (2) serum amylase or lipase level at least three times higher than normal; (3) radiological evidence of acute pancreatitis. The most common cause for APIP is gallstones which accounts for around two-thirds of cases, with hyperlipidaemia, obesity, alcohol abuse, trauma, medication and acute fatty liver contributing to the rest and possibly a worse outcome, while nearly one fifth remains idiopathic. The incidence of APIP increases with advancing gestational age parallel with the incidence of gallstone formation, but it may present in the postpartum period. The symptoms of abdominal

pain, backache, nausea and vomiting, are likely to be disregarded as normal during pregnancy, and this may lead to a delayed diagnosis.

This case highlights the importance of performing liver function tests and ultrasound in order to exclude a sinister pathology in any woman presenting with upper abdominal pain or backache, irrespective of the presence or otherwise of nausea or vomiting, especially during late second trimester or third trimester². Abdominal ultrasound, although helpful in the diagnosis of APIP as was evident in this case, has the limitation of not being able to detect stones in the terminal common bile duct. Magnetic resonance cholangio-pancreatography (MRCP) which not only plays a major role in assessing the terminal part of common bile duct but also helps identify complications, computed tomography which carries a risk of radiation to the fetus, and endoscopic ultrasound which is a semi-invasive procedure, were not required in this case.

Management of APIP is largely supportive and depends on its severity and aetiology. General complications such as acute renal failure, adult respiratory distress syndrome, sepsis, diabetes mellitus, coagulopathy and local complications such as pseudo cyst, necrosis and haemorrhage in the pancreas are seen in advanced cases. Delivery is not indicated although preterm

prelabour rupture of membranes and the possible risk of sepsis necessitated early delivery in this case. The use of antibiotics is especially indicated in cases of infected pancreatic necrosis, abscess, cholecystitis and cholangitis, but the increased C reactive protein (32 mg/L) following delivery warranted its use in this case. Cholecystectomy, either during the second trimester or as in this case, postpartum is the definitive treatment, with conservative management during the first trimester, and consideration of endoscopic retrograde cholangiopancreatography (ERPC) and biliary endoscopic sphincterotomy during the third trimester, in cases of APIP due to stones in the common bile duct.

The outcome of APIP has improved significantly in recent years due to a better understanding of pathophysiology, advent of rapid assay methods for amylase and lipase, advances made in imaging as well as in endoscopic and laparoscopic management of biliary disease, and an overall improvement in maternal and perinatal care. However, severe disease can be fatal

for both the woman and the fetus, and early diagnosis and institution of proper therapy is the key to an improved outcome, as was evident in this case.

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