

Abstract

Objective: Pregnant women, are unfortunately susceptible to significant maternal and fetal complications following Covid 19 viral infection. In this case series, we report the emergence of the SARS-CoV-2 virus as a possible cause of acute pancreatitis, a rare event in pregnancy. With only 2 previously reported cases in the literature, this is the first case series reported in the UK, in which there is significant pancreatic injury with consequent maternal morbidity.

Case report: We report two cases of women presenting in the third trimester of pregnancy with reduced fetal movements.

Case 1: A 28-year-old woman presented to the maternity assessment unit at 31 weeks gestation, with abdominal pain, raised blood pressure, proteinuria, and shortness of breath. A PCR test confirmed Covid-19 infection. She was delivered the same day via caesarean section due to fetal concerns on cardiotocograph. Despite this, she continued to deteriorate with severe abdominal pain and vomiting. A CT scan of the abdomen showed features consistent with acute pancreatitis. She was transferred to ITU and was discharged after several weeks.

Case 2: A 34-year-old women with a recent diagnosis of asymptomatic Covid-19, presented at 36 weeks gestation with reduced fetal movements. Unfortunately, she was diagnosed with an intra uterine fetal death. A few hours later she delivered and became significantly unwell, anuric and with metabolic acidaemia. She was transferred to the intensive care unit where acute necrotising pancreatitis was diagnosed by CT abdomen and pelvis with contrast. She was discharged several weeks later.

Discussion: Pancreatitis is rare in pregnancy, occurring most commonly in the 3rd trimester. Despite its rarity, it causes significant maternal morbidity. Gallstones are the commonest cause of pancreatitis in pregnancy, although hypertriglyceridemia is a known risk factor in susceptible women. Both patients were screened for other causes of pancreatitis and other risk factors for pancreatitis were absent. Extra-pulmonary Covid 19 symptoms are thought to occur due to the ability of the virus to affect host cells through the angiotensin converting enzyme 2 receptor which is expressed in the lung and other tissues, including the pancreas. Other viral infections are known to cause pancreatitis, therefore it is plausible that the SARS- CoV 2 virus could be a potential aetiology following exclusion of other known causes. The diagnostic difficulty in both cases was because their presentations were consistent with commoner complications in pregnancy such as pre-eclampsia (case 1) and secondary to the intra-uterine fetal death (case 2).

Conclusions: Acute pancreatitis should be considered as a differential diagnosis in women with confirmed or suspected Covid-19 infection, presenting with abdominal pain in pregnancy, especially in the third trimester.

Introduction

- Pancreatitis in pregnancy is a rare event, its exact incidence is unknown, but it is estimated to occur in about 1 in 1000 to 3 in 10,000 pregnancies. (1)
- Often presenting as acute abdominal pain and occurring most frequently in the 3rd trimester of pregnancy, this can cause significant diagnostic difficulty due to the many diagnostic differentials with similar presentations.
- Though outcomes for pancreatitis in pregnancy have significantly improved, it still has the potential for significant fetο-maternal morbidity and mortality (2,3).
- Causes in and out of pregnancy are similar however in pregnancy other pregnancy specific risk factors do need to be considered.

Case1

- A 28-year-old woman presented to the maternity assessment unit at 29 weeks and 6 days with epigastric pain and reduced fetal movements, but normal observations and was discharged.
- A PCR test had confirmed Covid-19 infection the preceding day
- 8days later, she was readmitted with shortness of breath and abdominal pain.
- Her blood pressure was raised with proteinuria.
- She was delivered the same day via caesarean section due to fetal concerns on a cardiotocograph.
- Despite this, she continued to deteriorate with severe abdominal pain and vomiting.
- A CT scan of the abdomen showed features consistent with acute pancreatitis and an ultrasound scan excluded cholelithiasis.
- She was transferred to ITU and was discharged after several weeks

Case 2

- A 34-year-old woman with a recent diagnosis of asymptomatic Covid-19, presented at 36 weeks gestation with reduced fetal movements.
- Unfortunately, she was diagnosed with an intrauterine fetal death.
- A few hours later she delivered and became significantly unwell, anuric and with metabolic acidaemia.
- She had a CT scan of her urinary tract which showed no renal stones but ascites, peritoneal and omental thickening and blurring of the planes around the pancreas.
- Her amylase was raised, blood glucose 12.7 and she was transferred to the intensive care unit for electrolyte replacement and was started on a variable rate infusion.
- A repeat scan show 2 days later showed necrotising pancreatitis and she required continuous veno-venous hemofiltration
- She was discharged several weeks later

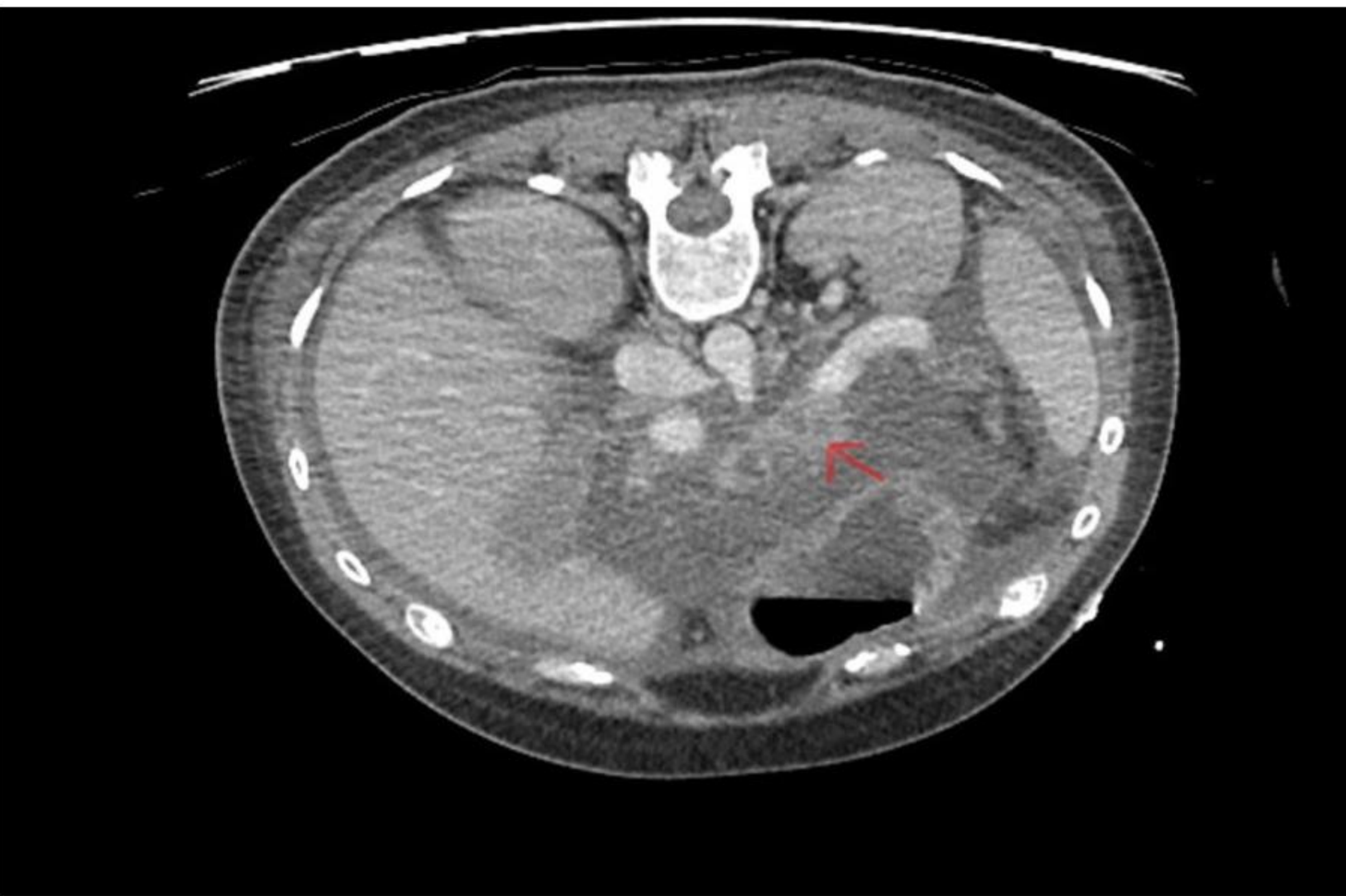


Image 1: Red arrow showing blurred planes around pancreas

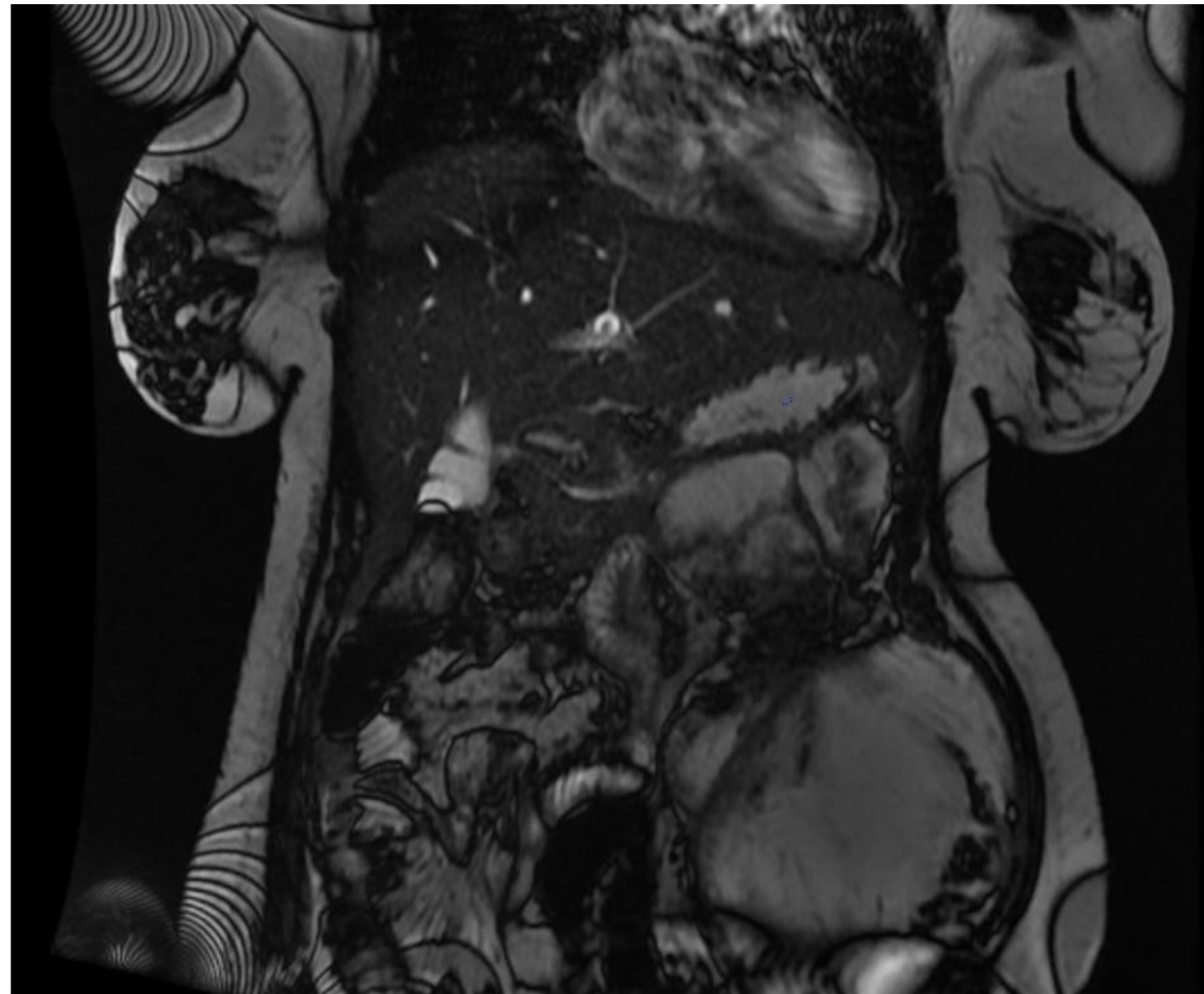


Image 2: shows pelvic collections

Discussion

- Pancreatitis is rare in pregnancy, occurring most commonly in the 3rd trimester
- Despite its rarity, it causes significant maternal morbidity. (2)
- Gallstones are the commonest cause of pancreatitis in pregnancy, although hypertriglyceridemia is a known risk factor in susceptible women. (3,4)
- Both patients were screened for other causes of pancreatitis and other risk factors for pancreatitis were absent.
- Extra-pulmonary Covid 19 symptoms are thought to occur due to the ability of the virus to affect host cells through the angiotensin converting enzyme 2 receptor which is expressed in the lung and other tissues, including the pancreas. (5)
- Tissues with the most ACE2 expression include small intestine, testis, kidney, heart muscle, colon, and thyroid gland, explaining why gastrointestinal symptoms can be a presentation of Covid 19 infection
- Direct pancreatic injury is thought to occur due to viral replication and ischaemia due to the increased thrombotic state
- Some studies have suggested that Covid 19 infection can result in pancreatic damage, leading to hyperglycaemia as seen in case 2. (6,7)
- Other viral infections are known to cause pancreatitis, therefore it is plausible that the SARS- CoV 2 virus could be a potential aetiology following the exclusion of other known causes.
- The diagnostic difficulty in both cases was because their presentations were consistent with commoner complications in pregnancy.

Discussion

- Covid 19 patients with acute pancreatitis has been shown to have a higher incidence of morbidity or mortality than those without the infection. (8,9)
- Presenting symptoms of pancreatitis in pregnancy include abdominal and or epigastric pain, nausea and vomiting, diarrhoea, and loss of appetite.
- The nonspecific and sometimes seemingly physiologic nature of the symptoms can cause a diagnostic challenge leading to a delayed or missed diagnosis.
- The presence of pulmonary symptoms of Covid should alert clinicians to the to the possibility Covid, however the absence of these should not exclude this possibility.
- Regardless of the aetiology the clinical management of acute pancreatitis remains broadly the same and the emphasis should be on the prompt diagnosis to improve outcomes in mother and baby.

Conclusion

- Despite the possibility of new risk factors for pancreatitis, it is likely that the aetiology of acute pancreatitis is multifactorial and prompt diagnosis and management will improve fetο maternal outcomes.
- Acute pancreatitis should be considered as a differential diagnosis in women with confirmed or suspected Covid-19 infection, who present with abdominal pain in pregnancy, especially in the third trimester.

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