

Case Report

Vernix caseosa peritonitis: a mimic for post-partum appendicitis

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ABSTRACT

Vernix caseosa peritonitis is an uncommon pathology predominantly affecting post-partum women who have undergone caesarean section and has symptomatology identical to common intra-abdominal surgical pathology. Cross-sectional imaging may not differentiate this from an alternative aetiology, thus a broad range of differentials must be considered in the early post-partum patient. This case of a 26 year-old post-partum patient who underwent an appendectomy for CT-confirmed appendicitis had a histological diagnosis of vernix caseosa peritonitis. This case demonstrates the diagnostic challenge of acute abdominal pain in the early post-partum period and the high index of suspicion that clinicians must have to reach these uncommon diagnoses.

Keywords: Vernix caseosa peritonitis, Acute appendicitis, Post-partum, acute abdomen, Acute abdominal pain

INTRODUCTION

Acute abdominal pain in females during the early post-partum period represents a diagnostic challenge for surgeons and obstetricians.¹ This is, in part, due to anatomical distortion from the enlarged uterus resulting in atypical pain distribution of common surgical pathologies. These patients are also at risk of complications secondary to vaginal or caesarean section birth, which may be difficult to delineate from alternative surgical pathology.²

We present a rare case of vernix caseosa peritonitis in a day 4 post-partum patient, the diagnosis was found on histological assessment post appendectomy for presumed acute appendicitis secondary to appendicolith.

CASE REPORT

We present a 26-year-old female who had an uneventful elective lower segment caesarean section (LSCS) 3 days prior to an emergency presentation for subjective fevers and increasingly severe, intermittent lower abdominal pain. The patient underwent her LSCS on the Wednesday of that week and was discharged from hospital Saturday

morning. Later that day she presented to the emergency department (ED) complaining of sharp lower abdominal pain that was intermittent but became increasingly frequent. This was associated with subjective fevers. The patient denied associated nausea, vomiting or diarrhoea and hadn't opened her bowels since prior to her LSCS. The treating rural ED team placed a nasogastric tube under the impression she may have a small bowel obstruction or ileus. She was then transferred to the region's referral centre with surgical and obstetric services for assessment and workup. The surgical and obstetric teams both assessed the patient on arrival, at which time she was febrile to 38.8°C, tachycardic, normotensive and not tachypnoeic. The patient was pain free after analgesia and did not examine with features of peritonitis, had a clean caesarean wound, was making urine and passing flatus. Laboratory tests are as follows: Hb 117 g/L, WCC 17.7×10^9 , CRP 169 mg/L. The provisional diagnosis from both consulting teams was endometritis, however a CT abdomen/pelvis was arranged to exclude an iatrogenic bowel injury. The scan demonstrated extensive inflammatory changes in small bowel mesentery in addition to a dilated appendix at 11 mm with features consistent with an appendicolith. Mild terminal ileitis was also noted (Figure 1).

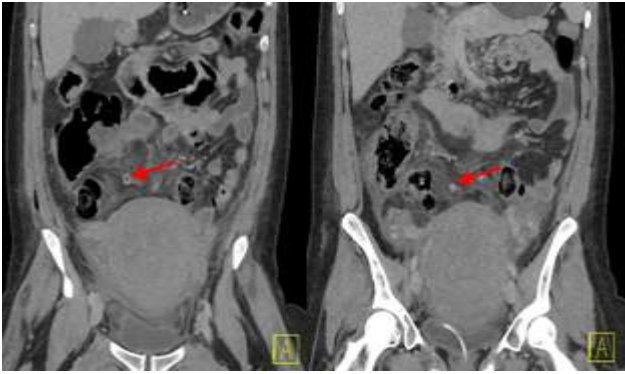


Figure 1: Coronal CT slices demonstrating patient’s enlarged, post-partum uterus, appendix (arrow) with faecolith (right) and abdominal free fluid.

With a new provisional diagnosis of acute appendicitis, patient was given IV ceftriaxone 2 gm and metronidazole 500 mg, kept fasted and booked for a laparoscopic appendicectomy. Operation was performed following day. Surgeons found an inflamed, non-perforated appendix with an appendicolith at base, appendix was covered by sigmoid colon and omentum. Serous fluid was noted in Pouch of Douglas and retro-uterine space and turbid free fluid around the liver, spleen and stomach. No small bowel injury was found. A large appendicolith was suctioned from base of appendix after division, a 14Fr drain was placed in right subphrenic and subhepatic spaces, operation was otherwise routine. Patient recovered well and had drain removed day 1 post-operatively and was discharged day 2 post-op on oral amoxicillin/ clavulanic acid. Histological examination of appendix did not find evidence of acute appendicitis. Pathology report noted serositis/ peritonitis associated with deposition of anucleate fetal squamous cells, rare finding which most commonly occurs secondary to amniotic fluid leak at time of caesarean section (Figures 2 and 3). Patient received a post-op phone call 2 weeks following her operation and had recovered without any post-op complications/ ongoing abdominal symptoms.

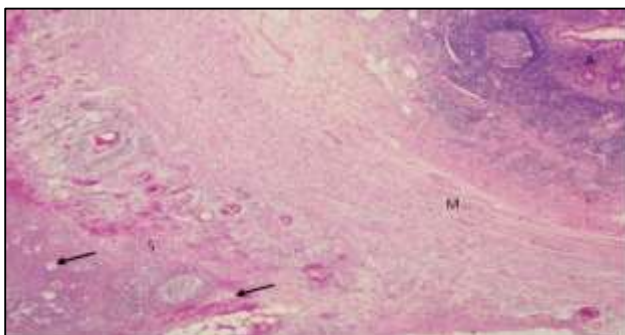


Figure 2: A histology slide demonstrating normal appendiceal mucosa (A), muscularis propria (M) containing minor inflammatory infiltrate and serosal edge (S) with inflammation containing small spaces within which are fine strands of eosinophilic (pink) material which is the vernix caseosa (arrows).

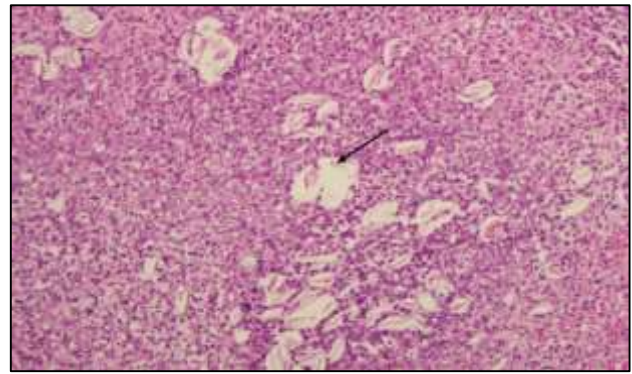


Figure 3: Magnified image of the inflamed serosa with the anucleate vernix (arrow) within a sea of degenerating neutrophils.

DISCUSSION

Vernix caseosa is a cheesy-white substance, comprised predominantly of water, protein and lipids, that coats neonates and is thought to have a number of functions that assist the newborn in adapting to extrauterine environment. These functions include lubrication in the birth canal, prevention of water loss from the neonatal skin and temperature regulation.³ Vernix caseosa has been implicated in post-partum peritonitis and is believed to be a complication of caesarean section where the peritoneum is exposed to the substance and mounts an immune response. The condition was first reported in the literature in 1976, however almost 50 years later less than 50 case reports exist on the topic.²

The majority of published a case reports VCP describe having undergone a LSCS prior and some authors have made the suggestion that with rising rates of LSCS birth we may see a rise in the incidence of VCP.² Most of the limited data would suggest that caesarean section resulting in amniotic fluid spillage and inadequate peritoneal lavage is the aetiology of VCP, however, case reports of VCP in women who were antenatal or post vaginal delivery have also been described.^{4,5} The paucity of literature and surrounding this topic makes it impossible to draw any firm conclusions about the pathogenesis of VCP, other than to say that it is poorly understood and that caesarean section appears to be a major risk factor.

A large population-based study in Sweden assessing the incidence of acute appendicitis in women from 1 year preceding pregnancy to 2 years post-partum included 3,888,452 women of whom 27,575 underwent appendicectomy. Incidence rates varied widely, with the peripartum (± 3 days) women having the highest incidence of appendicitis by a significant margin, as well as the highest negative appendicectomy rate.⁶ This indicates that a high index of suspicion for non-obstetric surgical pathology be exercised for patients in this phase of pregnancy. It is also likely that the rise in negative appendicectomy for these patients can be partly attributed

to the inability to confirm diagnosis with pre-operative CT in the pre-partum subgroup.

CONCLUSION

This case demonstrates the difficulty in making a confident pre-operative diagnosis for the cause of acute abdominal pain in the post-partum female, even with seemingly diagnostic imaging findings. We conclude that general surgeons and obstetricians must consider broad differentials in the early post-partum patient with abdominal pain.

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