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Obstetrics

Minimally invasive management of pyoperitoneum in a COVID-19 patient: A therapeutic dilemma

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Pyoperitoneum and puerperal sepsis are life-threatening complications of cesarean delivery. The present study reports minimally invasive management of puerperal sepsis, pyoperitoneum and acute peritonitis in a COVID-19-positive patient.

A 25-year-old female developed fever with chills and progressively increasing abdominal pain three days after undergoing cesarean section, followed by vomiting and diarrhea. The patient was diagnosed with COVID-19 infection on postoperative day 7 and referred to our center for further management. Informed written consent was obtained from the patient for this study.

The patient was febrile, pulse rate was 120 bpm, BP 96/60 mm Hg, respiratory rate was 30 breaths per minute, and oxygen saturation was 92% on room air. Sub-involution and tenderness of the uterus was observed. A large (20 × 15 cm) abdomino-pelvic cystic mass occupied the right hypochondrium, lumbar, umbilical, and suprapubic regions. The overlying skin was erythematous, tender, with rebound tenderness suggestive of peritonitis. Chest X-ray revealed the typical signs of COVID-19 infection (Figure 1a). Serum procalcitonin was 36.2 ng/mL. Contrast enhanced computerized tomography (CECT) scanning of the abdomen and pelvis was suggestive of multiple loculated, peripherally enhancing intraperitoneal fluid collections (Figure 1b).

The patient was managed on oxygen by nasal prongs, intravenous meropenem, clindamycin, dexamethasone, and low molecular weight heparin in the intensive care unit. Two 14F pigtail catheters were inserted under CT guidance in the right and left lower abdomen using Seldinger's technique (Figure 1c-f). Two liters of purulent fluid were drained. The patient's condition significantly improved over the next 48 hours. A 5 × 6 cm supraumbilical collection persisted after one week. Considering the clinical improvement, the decision to insert a third 14F pigtail catheter was taken. The patient was discharged after 15 days of admission.

Percutaneous drainage is an established modality for management of intra-abdominal and intra-pelvic collections.¹ This minimally invasive, lifesaving approach can obviate major surgery. Contraindications for percutaneous catheter drainage are few, namely coagulopathy, absence of a safe tract, close proximity to bowel/large vessels, and signs of acute peritonitis.²

Considering the multiple localized fluid pockets with only narrow intercommunications and, most importantly, signs of peritonitis we initially planned to perform a laparotomy. However, considering the severity of COVID-19 infection with compromised lungs, we expected significant post-operative respiratory morbidity. This posed a significant therapeutic dilemma in planning for patient management.

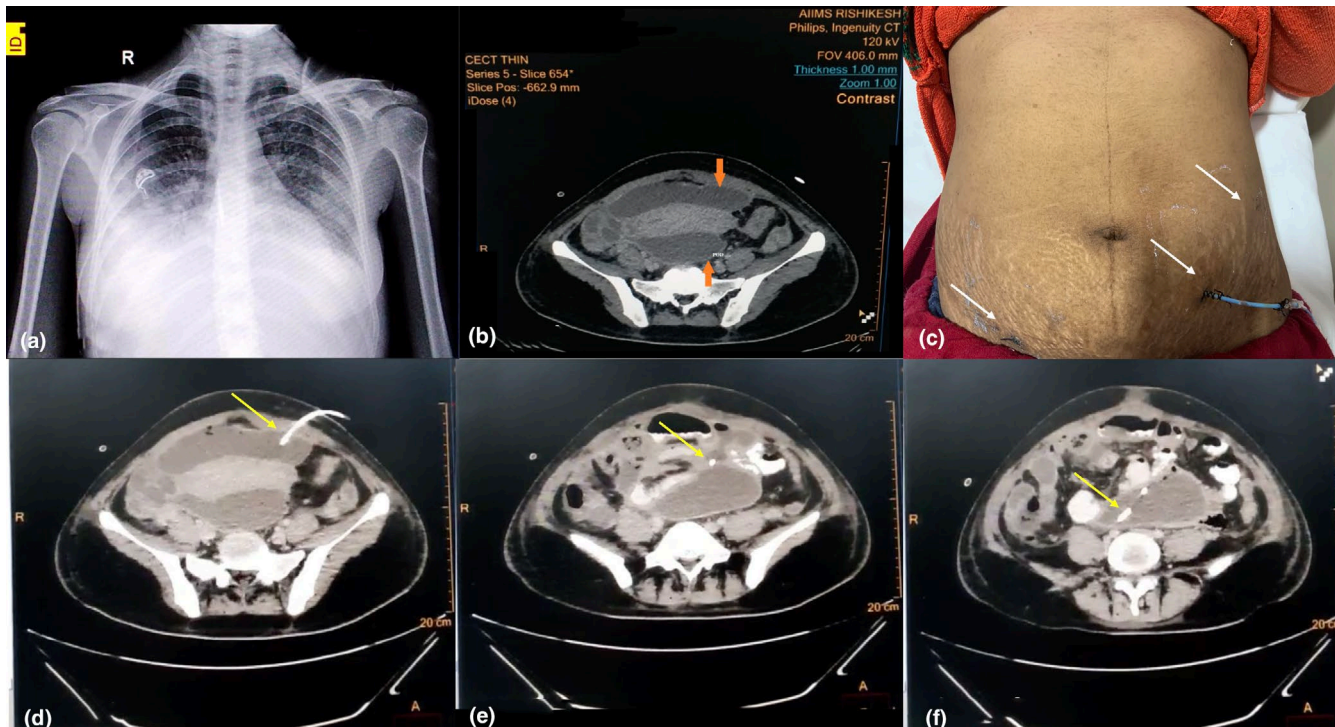


FIGURE 1 (a) Chest X-ray of the patient with bilateral ground glass opacities, bilateral pleural effusion and basal atelectasis; (b) CECT scanning of the abdomen and pelvis was suggestive of multiple loculated, peripherally enhancing intraperitoneal fluid collections with multiple internal air foci in abdomen. The largest collection measured 20 cm × 15 cm × 13 cm, involving the umbilical region, pelvis and front of the uterus. This was in continuation with another 12 × 8 cm collection behind the uterus (orange arrows); (c) The white arrows depict three abdominal sites of percutaneous catheter insertion; (d, e, f) Tract of percutaneous catheter entering the pelvic collection via narrow intercommunication (depicted by yellow arrows)

After detailed discussion with the patient and attendants, a joint decision to attempt percutaneous drainage was taken with a backup plan for laparotomy in the event that the patient's condition deteriorated. This case was a near miss mortality. We were fortunate that despite features of acute peritonitis, percutaneous drainage aided in the resolution of sepsis: a precarious lesson learnt from this pandemic.

CONFLICTS OF INTEREST

The authors have no conflict of interests.

AUTHOR CONTRIBUTIONS

LC, SR, and UC were responsible for clinical management of the patient. LC and SR were responsible for preparation of manuscript. SA

and JM provided the relevant images. All authors contributed to and approved of the final version of the manuscript.

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