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Case Report

Anaesthetic and Perioperative Management of Elderly Female with Post Covid ARDS with Comorbities Undergoing Emergency Laparotomy for Obstructed Umbilical Hernia

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Abstract

Elderly female with chronic hypertension, known case of atrial flutter on rate control medication who recently treated for COVID-19 pneumonia on oxygen support(PFR=190) came to emergency room with complaints of abdominal mass and pain associated with vomiting, not passing stools. Diagnosed to have obstructed umbilical hernia with extensive secondary bacterial pneumonia with ARDS (ASA-4E). COVID-19 RTPCR test negative. Taken up for emergency laparotomy under combined spinal and epidural anaesthesia (CSEA). Post operatively patient was managed in intensive care unit for 5days with oxygen, invasive lines, vasopressor support and epidural infusion. Post covid patients presenting for emergency surgery requires evaluation of surgical illness and post covid sequels like oxygen dependency, cytokine storm, secondary bacterial infection, ARDS, lung fibrosis renal and liver dysfunction. Atrial flutter in perioperative period may lead to haemodynamic instability and thromboembolic events resulting in significant morbidity and mortality. Laparotomy in these patient is challenge. Needs better analgesia perioperative period to prevent further respiratory deterioration.

Keywords: laparotomy; covid-19 pneumonia; obstructed umbilical hernia; perioperative period

Introduction

A 81year old female with class 1 obesity known hypertension and atrial flutter, status post modified radical mastectomy for left carcinoma breast 20 years ago was admitted with complaint of mass per abdomen since 3 years which is associated abdomen pain, vomiting and not passing stools since 3days. Mass per abdomen in umbilical region started as small swelling, gradually progressive to present size, reducing by itself on lying down which is persistently present since 3days not reducing. Patient was on treatment with telmisartan-40mg, tab Amiodarone-100mg, tab diltiazem-10mg and tab frusemide-40mg. metabolic equivalents (METs) less than 4. Patient was recently treated for COVID 19 pneumonia for 10days and discharged on home oxygen 1 week ago was on 17th day of covid illness. Presently patient is on 5L/min oxygen with simple mask. CT severity score on 5th day of COVID illness was 11/25.

On examination patient conscious, oriented. Heart rate(HR) 82/min, Blood pressure(BP) 110/40, Saturation(SPO_2) 85-88% on room air, 95% with 5L/min oxygen, respiratory rate(RR) 28-30/min. Per abdomen mass 8x6x6cm^2 in umbilical region, oval shaped, soft irreducible in nature associated with diffuse distention and tenderness. Bowel sounds absent. Bilateral extensive crepitations heard on auscultation chest. Sequential organ failure assessment (SOFA) score-4/25. Airway mouth opening >3cm, Mallampatti class-2, edentulous.

Hb-15.4gm%,WBC-12840/cumm,Platelet-2.25lakhs,Creatinine 0.9mg/dL, BUN 62mg/dL, normal liver function test, albumin levels 3.0mg/dL, sodium 133, potassium 3.7, chloride 102mEq, coagulation profile normal with INR being 1.04. ECG showed normal sinus rhythm with RBBB, 2D echo sowed concentric LVH with ejection fraction 55%. Covid 19 RTPCR negative, chest x ray showed bilateral extensive infiltrates, CT abdomen is suggestive of obstructed umbilical hernia. Preoperative ABG showed lactate PH-7.33, PCO_2-28, PO_2-76, HCO^3-18, lactate-2.1. Serum procalcitonin-14.6ng/ml,CRP-46mg/L,D-dimer-1274ng/mL. Surgical gastroenterologist advised for emergency laparotomy and proceeds.

Written informed for surgery was obtained. High risk and post-operative ICU care, ventilator support, prolonged hospitalization was explained. Patient was nil oral more than 8hours, 1 liter of ringer lactate bolus given; BP was improved to 130/72. Inj pantoprazole 40mg, in Odansetron 4mg IV given. In cefuroxime sulbactam 1.5g IV given after test dose. 2 pint of packed cells reserved (O positive). Foleys catheter and ryes tube inserted.

Patient was continued with 5liter/min oxygen with simple mask. Patient is haemodynamically stable and coagulation parameters were normal hence decided to do case under combined spinal epidural anesthesia (CSEA).

Patient shifted to operation theatre with oxygen. Monitors connected and Basal vitals were noted. Under all aseptic precautions, under local anaesthesia in sitting epidural puncture done at L_1-L_2 space with 18G tuohy needle, loss of resistance at 3.5cm, 20G epidural catheter inserted fixed at 9cm. Inj lignocaine+adrenalin 2% 3ml test dose given. Spinal anaesthesia was given with 26G needle midline approach at L_3-L_4 space, clear CSF flow present. Inj bupivacaine 0.5% (Heavy) 2cc+ buprenorphine 60mcg given intrathecally. Vitals were stable. Analgesia, level and relaxation was adequate. Patient was started with epidural infusion of Inj ropivacaine 0.2% and fentanyl 2mcg/cc 5ml/hour. Patient had hypotension BP being 80/46 mmHg. Treated with fluid bolus and Inj phenylephrine 50mcg bolus. BP responded well. Haemodyamically stable throughout surgery.

Incision around 12cm extending up to T6. Large sac with rotated congested small intestine noted. Bowel loops reduction done, sac excised, wash given. Rectus sheath closed. Primary closure of the abdomen done. Total duration of surgery 2hour: 30mins. Total intravenous fluid given 3000ml. Total urine output 800ml. Blood loss approximately 400ml. Ryes tube drain 150ml.

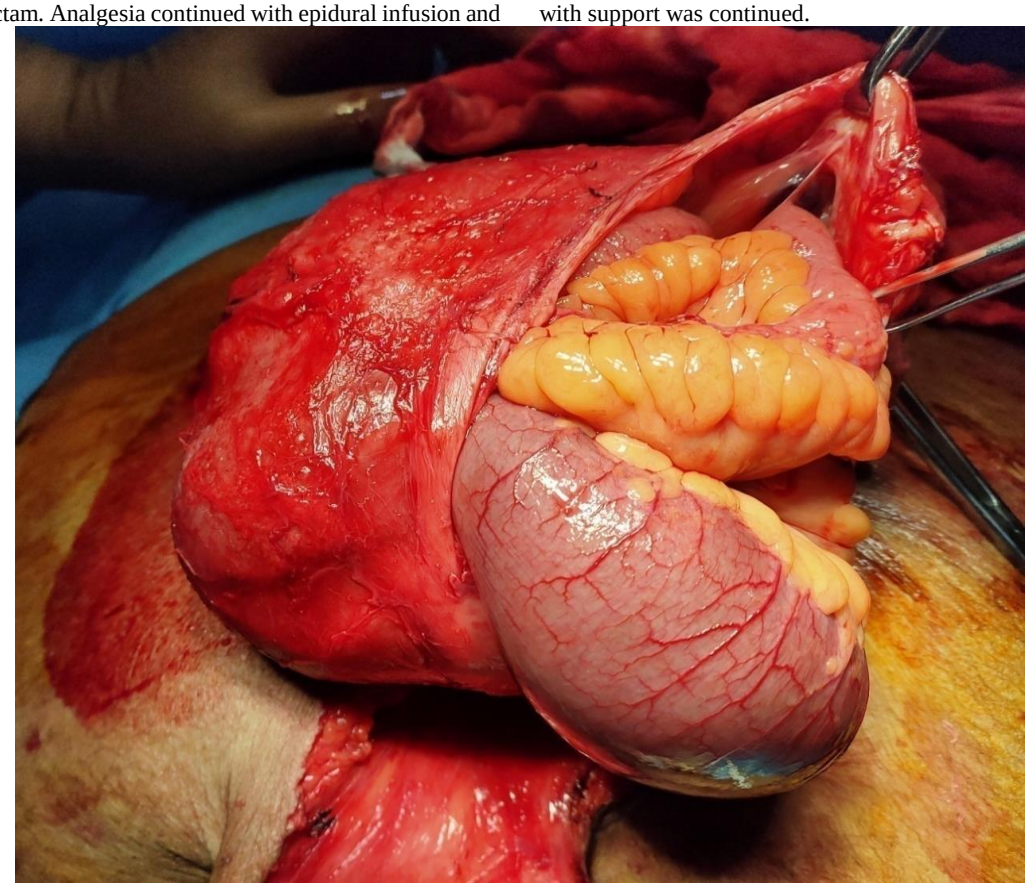
Post-operatively patient shifted to ICU with 5L/min oxygen, post operatively patient was conscious, oriented hemodynamically stable. HR-98/min, BP-130/76, saturation 95%, respiratory rate 28/min. per abdomen soft, bowel sounds absent, RS b/l crepitations. Kept nil oral, continued with IV fluids 125ml/hr, antibiotics upgraded to piperacilllin+tazobactam. Analgesia continued with epidural infusion and intravenous paracetamol. Post-operative ABG done showing PH-7.34, PCO_2-40.7, PO_2-140, HCO_3-21.5, lactate-1.68.

Post op day-1: Patient required more oxygen hence switched to 10L/min oxygen with NRBM. High coloured urine, postural hypotension, giddiness on ambulation, BP 80/40mmHg, lactate 2.40mmol/l. Screening ECHO showed collapsing IVC. Measures taken are telmisartan was withheld, 2liters bolus fluid, continued IVF 150ml/hour. Arterial line and central line secured and noradrenalin started to maintain BP. Epidural infusion stopped temporarily. SOFA Score progressed to 7/24. Thromboprophylaxis with clexane.

Post op day 2: HR-188/min, ECG- atrial flatter, reverted to sinus rhythm with inj amiodarone 150mg bolus, infusion started. Screening echo showed no significant changes. BP 130/50 with 2ml/hour nor adrenalin. Total fluid input 2325ml, total output 1840ml. Lactate-2mmol/l. clear adequate urine output. Epidural infusion restarted. Serum potassium was low, correction started. Incentive spirometry and breathing exercise started. Nor adrenalin tapered and stopped. Clear liquids started orally. ERAS protocol followed.

Post op day 3: patient was conscious, oriented. In sinus rhythm and haemodynamically stable. Oxygen tapered to 3L/min oxygen with nasal prongs. Lactate-1.4mmol/L. Chest X ray bilateral infiltrates reduced. Bowel movements present. Clear liquids and predigested feeds started. Ryes tube taken out. Patient ambulated. Amiodarone IV infusion stopped and switched to oral.

Post op day 4: on 2L/min oxygen, saturation 96%, haemodynamically stable. Orally taking. IV fluids reduced to 75ml/hour. Epidural and foleys catheter removed. Switched to IV analgesics. Shifted to ward with oxygen. Chest physiotherapy, incentive spirometry, ambulation with support was continued.



Picture 1- *Sac with Rotated and Congested Bowel*

Picture 1 *patient's chest x-ray*

Discussion

COVID-19 has multi systemic involvement with pneumonia, Myocarditis, gut ischemia, kidney injury, liver damage, shock, and imbalance in coagulation homeostasis (1). We report our experience of peri-operative anesthetic care of an elderly hypertensive lady with post covid with severe bilateral bacterial pneumonia moderate ARDS who developed obstructed umbilical hernia necessitating emergency Laparotomy.

Emergency laparotomy is a time sensitive surgery where a bleeder/septic focus requires emergent damage control surgery. Delays in surgical damage control in favor of optimization are deleterious [2, 3, 4]. Hence, the goal should be to judiciously optimize without delaying surgery and the extent of optimization should be determined by the surgical urgency. Our patient only has bilateral pneumonia with moderate ARDS with oxygen requirement, all other organ system functions were normal hence taken for surgery as early as possible.

While planning regional techniques, due considerations should be given to anticoagulation therapy and coagulopathy in covid 19 patients [5]. Surprisingly our patient was not on any anticoagulation therapy and did not have any coagulation abnormality both are more common in covid and post covid phase.

CSEA has fewer deleterious effects on respiratory function and dynamics compared with general anaesthesia. This preservation of respiratory function and better analgesia could reduce postoperative pulmonary complications in COVID-19 and post covid patients who may already have reduced respiratory function from COVID-19- associated pneumonia or acute respiratory distress syndrome. However, this approach requires a co-operative patient, an experienced surgeon, and a skilled anaesthesiologist and normal coagulation parameters.

The main problem of CSEA is accelerated hypotension due to sympathetic blockade, ventilatory changes due to higher sensory levels required, and diaphragmatic irritation leading to shoulder tip pain along with increased surgical duration. Our patient had transient hypotension which was treated with IV fluid bolus and phenylephrine 50mcg bolus doses.

The factors which delay recovery after major GI surgery are pain, lack of gastrointestinal function and immobility. Therefore postoperative management should include pain control, to promote gastrointestinal function and mobility as soon as possible [6,7] [40,41].ERAS is associated with more rapid recovery and shortened length of stay more than 30% and appears to be associated with reduced post-operative complications up to 50% [6].

Conclusion

We believe that CSEA can be used as a good alternative to general anesthesia in severe pneumonia, ARDS secondary to covid/post covid phase in geriatric, emergency and risk patients provided haemodynamically stable and normal coagulation. In our case, we preferred to apply CSEA instead of general anesthesia because of the negative effects of general anesthesia on respiratory functions due to the presence of pneumonia, oxygen support and poor respiratory reserve. Epidural analgesia post operatively gave better analgesia and helped early recovery in this case.

References

1. Zaim S, Chong JH, Sankaranarayanan V, Harky A. (2020). COVID-19 and multiorgan response. Curr Probl Cardiol. 45:100618.
2. Poulton T, Murray D. (2019). Preoptimisation of patients undergoing emergency laparotomy: A review of best practice. Anaesthesia. 74:100-107.

3. Ilyas C, Jones J, Fortey S. (2019). Management of the patient presenting for emergency laparotomy. BJA Educ. 19:113-118.
4. Peden C, Scott M. (2015). Anesthesia for emergency abdominal surgery. Anesthesiol Clin. 33:209-221.
5. Uppal V, Sondekoppam RV, Lobo CA, Kolli S, Kalagara HKP. Practice recommendations on neuraxial anesthesia and peripheral nerve blocks during the COVID-19 pandemic.
6. Varandhan K, K Neal K, R. Dejong C. H, C. Fearon K, C. H, Ljunqqvist O, Lobo D. N.et al. (2010). The enhanced recovery after surgery (ERAS) pathway for patients undergoing major elective open colorectal surgery: a meta-analysis of randomized trials. Clin. Nutr. 29(4):434440.
7. Van Bree, Vlug S, Bemelman M, etW.al. (2011). Faster recovery of gastrointestinal transit after laparoscopy and fast-track care in patients undergoing colonic surgery. Gastroenterology 141872880.

DOI: 10.31579/2690-4861/182