

A Case Presentation on DCM in a Patient of Ca Rectum Post Surgery

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Abstract: We describe the clinical course of a patient of carcinoma rectum who underwent chemotherapy and radiotherapy followed by surgery (LAR+Ileostomy). Three months post surgery patient underwent ileostomy reversal. Following this surgery the patient developed oliguria and became hemodynamically unstable. The patient was assessed and investigations were done which revealed Left Ventricular Failure with Dilated cardiomyopathy.

Keywords: DCM, LVEF, Ca rectum, ICU, Ejection fraction

1. Introduction

Dilated cardiomyopathy (DCM) is primarily a disease characterized by the left ventricle (LV) or biventricular dilatation, systolic dysfunction, and normal LV wall thickness. DCM is defined by the presence of: (a) Fractional myocardial shortening less than 25% and/or left ventricular ejection fraction (LVEF) less than 45%; and (b) LV end diastolic diameter greater than 117% excluding any known cause of myocardial disease. [1] DCM is the most common type of non - ischemic cardiomyopathy, the third most common cause of heart failure, and the most common indication for cardiac transplantation. Though, there are some reported cases of perioperative management of patients with DCM, we present a case of DCM developed in a patient post surgery.

2. Case Presentation

45 year old female with no history of Hypertension, Hypo/Hyperthyroidism, Diabetes, Bronchial asthma, COPD, Seizure disorder came with the complaints of abdominal pain, usually following heavy meals, non radiating with no relieving or aggravating factors followed by nausea and vomiting and painless per rectal bleed to the Surgery Department of SMHS Hospital in Aug 2022.

The patient was examined and assessed by the surgeon and investigations were done and a diagnosis of CA Rectum was made.

After the diagnosis this patient underwent 33 cycles of radiotherapy, 7 cycles of chemotherapy and was scheduled to undergo surgery in March 2023.

Pre Anaesthetic checkup was done prior to surgery.

Weight: 60 kg

Personal history - Nothing significant

Surgical history - Nothing significant

Family History - Married, mother of 2 children

Drug History: Patient underwent 33 cycles of chemotherapy and 7 cycles of radiotherapy.

Allergic history - Nothing Significant

Menstrual history - Normal cycles, regular with normal flow

Airway Assessment:

Mouth opening: Adequate (3 finger breadth)

MPS - II

Thyromental distance: 3 Finger Breadth

Neck movements: Adequate

Neck Circumference: Normal

Spine - Normal

No artificial or loose denture.

Systemic Examination:

CVS - S1S2 +

HR - 76 b/m

ECG - Normal sinus rhythm

METS > 4

ECHO - Within normal limits, EF - 50%

RS - B/L Air entry +

SpO2 - 97% on room air

CNS - Higher motor function: normal

power: 5/5 in all 4 limbs

P/A - Soft, non tender, non distended

Renal - normal

After PAC, pre anaesthetic visit was done on the day of surgery and patient underwent LAR and Ileostomy on March 21 2023. The patient was induced with Propofol 120 mg IV and Inj vecuronium 30mg IV was used as a muscle relaxant. 66% N2O and 33% O2 along with 0.8% Isoflurane were used for maintenance. Inj Fentanyl 120 mcg IV and Inj PCM 1g IV were used for analgesia. The Surgery took 3 hours and patient received 2.5 litres of fluid intraoperatively. Intra operative ABG's and vitals remained within normal limits. The overall intraoperative course was uneventful. The patient was shifted to PACU for observation for 3 days. On 24 March 2023 she was shifted back to ward and discharged on 28 March 2023. Post surgery she remained on regular follow - up.

On 6th June 2023, patient was scheduled for ileostomy reversal.

Pre - anaesthetic checkup was done again. The assessment and investigations were in accordance with the previous PAC.

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The procedure was done under Sub Arachnoid Block which was given with 15mg of 0.5% Bupivacaine using 25G Quinckes needle.

Intra operatively the patient received an input of 2L of crystalloids against a urinary output of 110 0ml and blood loss of 100 ml {Total 1.2 L}. The total duration of the surgery was 1.5 hours. The intraoperative vitals and ABG's were checked at a regular interval and showed normal results. Hence the patient had an uneventful peri operative course and after the surgery she was shifted back to the ward.

Next day of the surgery patient had multiple episodes of vomiting, shortness of breath and got hemodynamically unstable with the BP readings of:

- 80/46 mmHg
- 79/54 mmHg
- 77/48 mmHg

Fluid boluses were given at first but patient did not improve.

Subsequently she started developing oliguria (450 ml in 24 hours).

The patient was immediately shifted to SICU on 7 June 2023.

On arrival to SICU, patient was examined and assessed. Multi chain monitoring was connected.

General Condition: Sick

Palor: (-)

Cyanosis: (-)

Icterus: (-)

Edema: (-)

JVP: not raised

CVS: S1 S2 (+), no added sounds

RS: Bilateral Air entry (+)

Crepts ++

P/A: Soft

Vitals:

Bp: 80/56mmg

HR: 66b/min

Spo2: 80% on Face Mask[at]10L/min of O2

Temp: febrile (101.1 F)

All the baseline investigations were done.

Hb: 11.6g/dl

WBC: 25.6×10^3

Platelet count: 22×10^3

KFT: within normal limits

Electrolytes: Normal

ABG:

PH	PO2	PCO2	HCO3 -	Na+	K+	Cal+	Hb	SpO2
7.45	185	40.5	28.8	134	3.8	0.9	9.5	100%

LFT: within normal limits

Chest Xray was done: Pleural Effusion/Congestion

ECG: low voltage with normal sinus bradycardia

Echo was done: Global Hypokinesia

Mild to moderate MR

Moderate TR

EF: 15 - 20%

Usg Abdomen including KUB: normal study

Under aseptic precautions arterial line was secured in the right Radial artery and transducer was connected for invasive Blood pressure monitoring.

Patient was put on Infusion Nor adrenaline and Infusion Dobutamine.

Under aseptic precautions Central venous line was secured in right sided IJV and central venous pressure was monitored and targeted between 7 - 9 cm H2O and fluid was optimised accordingly. Continuous monitoring of preload by Transesophageal Echocardiography (TEE) and of myocardial performance by cardiac output measurement (CCO) is also useful but this is not available in our hospital so, we relied on central venous pressure.

The blood and urine culture were send and patient was put prophylactically on Broad Spectrum antibiotics. The Antibiotics were changed according to blood culture sensitivity report which came positive for Acinetobacter.

On 9 June 2023 The patient had a drop in SP02, following which Non invasive ventilation trials were given to the patient with FiO2 of 100%, PEEP 5 cm H2O, Pins 10 cm H2O. The settings were changed according to the SpO2 and findings on ABG.

ABG's were sent 4 hourly, Temperature was checked every 2 hourly and subsequently base line monitoring was done. Chest Xrays and ECG were repeated to observe the changes.

Diuretic therapy was started at lower doses to reduce the symptoms and signs of congestion.

Cardioactive pharmacological drugs were given and adjusted and up - titrated according to the condition of the patient.

On the 17 June 2023, patient was off the inotropic support. As the chest congestion got improved, the supplementary oxygen requirements of the patient also started to decrease.

The Patient stayed in ICU for 13 days.

During this course, patient remained conscious and oriented.

The patient was kept in icu for 3 more days under observation and finally on 20 june 2023, she was shifted back to the ward.

Shifting Vitals:

RS: no added sounds

SpO2: 97% on Nasal Prongs[at]2L/min O2

CVS: S1S2 (+)

Bp: 110/68 mmhg

HR: 68b/m

Renal: Urine output: 50 ml/hour

3. Discussion

This case report addresses DCM in a haemodynamically unstable patient for which the main goals of management consist of 1) Avoiding Myocardial depression 2) maintaining normovolemia 3) Avoiding Ventricular after load 4) Avoiding hypotension.

Critical care management of patients with DCM poses a challenge for the anesthesiologist, but meticulous planning for management of the patient, appropriate monitoring of hemodynamic and respiratory parameters, judicious use of pharmacological agents and tailor made anesthetic approach according to patient's general condition leads to a favorable outcome.

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References

- [1] Wood WL, Kuczkowski KM, Beal BR. Anesthetic considerations for cesarean section in the parturient with familial cardiomyopathy. *Acta Anaesthesiol Belg.*2008; 59: 87–9.