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PERIOPERATIVE MANAGEMENT OF PATIENT WITH SEVERE PULMONARY ARTERIAL HYPERTENSION(PAH) AND HISTORY OF AORTIC VALVE REPLACEMENT POSTED FOR MODIFIED RADICAL NECK DISSECTION(MRND) AND RECONSTRUCTION WITH FLAP FOR CARCINOMA OF RIGHT BUCCAL MUCOSA - A CASE REPORT.

Anaesthesiology

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ABSTRACT

A 70 year old female, operated case of Aortic valve replacement 5 year back, was admitted in Pravara Rural hospital, Loni, Ahmadnagar for pain in right lower jaw since 2 month. . Patient was on Oral warfarin since last 5 years. Patient was NYHA grade 2 . On Examination patient.was conscious and oriented ,haemodynamically stable , good volume, regular in rhythm and adequate depth, her mouth opening was 2 finger with MP grade 2. On the day of surgery Patient was shifted to O.T. and Written informed high risk consent regarding post operative ICU admission , ventilation, and intraoperative blood transfusion was taken. Premedicaion given with routine drugs. Both left sided subclavian and internal jugular vein for inserting cather was tried but both failed,since right sided neck exploration to be done so right sided subclavian was not tried instead right femoral catheter was secured for cvp monitoring and left radial arterial line placed for monitor blood pressure and volume status.Monitoring was done with pulse oximetry, invasive BP,CVP, ECG, ETCo2,Temperature.Patient was induced as per departmental guideline . Patient was intubated left nasally maintained on Oxygen,Air and isoflurane with inj vecuronium o.1 mg/kg for muscle relaxation.Maintanace of haemodynamic stability by titrating isoflurane accordingly. Intraoperative inj PCM 1 gm iv given , inj Fentanyl 60 mcg every 2 hourly given. Intraop fluid maintained according with haemodynamic status of the patient.
Then, patient shifted to SICU intubated with proper analgesic medication was given with fentanyl was extubated next day uneventfully.

KEYWORDS

pulmonary arterial hypertension(PAH),modified radical neck dissection(MRND) ,analgesia, Uneventful

INTRODUCTION:

Pulmonary Arterial hypertension(PAH) is a hemodynamic and pathophysiological condition defined as an increase in Mean Pulmonary arterial pressure(PAP)>25mmHg at rest as assessed by right heart catheterization that can lead to Right heart failure[1].PAH is a major reason for elevated perioperative morbidity and mortality. After selecting each of the suitable individual anesthetic and surgical procedures, intraoperative management should focus on avoiding all circumstances that could contribute to exacerbating pulmonary hypertension (hypoxemia, hypercapnia, acidosis, hypothermia, hypervolemia, and insufficient anesthesia and analgesia)[4]. During the postoperative phase, patients must be monitored continuously and receive sufficient analgesic therapy over an adequate period of time.

A case report:

A 70 year old female, operated case of Aortic valve replacement 5 year back, was admitted in Pravara Rural hospital, Loni,Ahmadnagar for pain in right lower jaw since 2 month. Patient was diagnosed right squamous cell ca buccal mucosa and was posted for Wide local excision, Modified radical neck dissection(MRND) and reconstruction with flap.

Patient had history of tooth extraction of right lower jaw 6 month back and was having addiction of tobacco since 40 years.On examination there was no history of cough, cold, fever and there was history of Aortic valve replacement 5 year back. Patient was on medication Oral warfarin post op since last 5 years.Patient also had history of dyspnea on strenous exercise under NYHAgrade 2 .

On General Examination patient.was conscious and well oriented in time, place and person. Wt-60kg, pulse 58/min , B.P.130/90 mmhg, good volume, regular in rhythm and adequate depth, her mouth opening was 2 finger with MP grade 2. On Auscultation no added sounds heard, Air entry B/L equal and no murmur heard. On Blood investigation HB:10.5g/dl, TLC:13960/cumm, platelet: 337000, INR:1.15, Blood group: B positive and ECG showing sinus bradycardia, Chest X ray showing Normal study.On Cardiology opinion 2D Echo was advised which revealed, mild LV systolic dysfunction, LV global hypokinesia, Prosthetic valve was seen in aortic position, Moderate to severe MR , Moderate TR, severe PAH(RVSP: 72 mmhg). And patient was started on Tab Dytor(10) 1 O.D. , TAB MetXL(12) B.D. , Inj.Enoxaparin 0. 6 mg O.D. as per cardiologists advice .It was followed for 7 days prior surgery. On the day of surgery Patient was shifted to O.T. and Written informedhigh risk consent regarding post operative ICU admission , ventilation, and intraoperative blood transfusion was taken. Premedicaion given with inj Ondensetron 0.1 mg /kg , Inj.glycopyrrolate o.oo4 mg/kg , inj.midaz 0.04 mg /kg , inj fenta 2 mcg/kg given. Both left sided subclavian and internal jugular vein for inserting cather was tried but both failed,since right sided neck exploration to be done so right sided subclavian was not tried instead right femoral catheter was secured for cvp monitoring and left radial arterial line placed for monitor blood pressure and volume status.Monitoring was done with pulse oximetry, invasive BP,CVP, ECG, ETCo2,Temperature.Patient was induced with inj propofol 1mg/kg, inj scholine 2mg/kg.Left Nasal intubation with FMT no.7 and Ryles tube inserted . Patient was maintained on Oxygen,Air and isoflurane with inj vecuronium o.1 mg/kg for muscle relaxation.Maintanace of haemodynamic stability by titrating isoflurane accordingly. Intraoperative inj PCM 1 gm iv given , inj Fentanyl 60 mcg every 2 hourly given.Intraop fluid correction was done with Colloids and 2 PCV ,total 1500 ml was given.

Then, patient was shifted to SICU intubated and put on SIMV mode of ventilation. Midazolam infusion @2ml/hr and fentanyl infusion @4ml/hr started.patient was extubated next day uneventfully.

DISCUSSION:

PAH present with perioperative anaesthetic challenges ,since haemodynamic stability maintenance is the utmost importance as patient was in geriatric age group with surgical time was longer and associated with antiplatelet drug consumption by the patient also had history of valvular replacement making extremly sensitive to cardiac failure .The preoperative evaluation of patient include assessment of functional state,severity of the disease,and type of surgery proposed, medication.A detailed history of symptom including dyspnea, chest pain ,fatigue and syncope should be elicited. Patient presented with PAH class 2 (Functional classification of pulmonary hypertension)[2]. Patient was maintained in well haemodynamic stable condition, with hypotension, bradycardia, hyoxia, hypercapnic situation were prevented. Intraoperative and postoperative hypothermic monitoring and adequate measures are taken by maintaining operation theatre temperature and postoperative use of warmer as hypothermia exaggerates PVR.Patient was given general anaesthesia and maintained on O2 ,Air ratio of 60:40 and Isoflurane titrated accordingly ranging from MAC 1-1.5. All intravenous induction agent can be used in combination with opioids ,as they did not influence PVR and oxygenation. Histamine-releasing relaxant (Atracurium)should be avoided,as they may further increase pulmonary resistance[3].due to histamine release so vecuronium was used 0.1mg/kg loading and maintanace dose accordingly given. Volatile anesthetic agent up to 1 MAC can be given safely without any negative effect on pulmonary vasculature[5].Intraperatively moderate hyperventilation by

maintaining PaCo2 ranging from 30-35 mm hg,with low tidal volume ventilation to avoid overinflation of alveoli. Recruitment manuevere to avoid ventilation perfussion mismatch ratio[6]. PH was maintained around 7.35-7.45. Fluid therapy was maintained in a target manner to avoid right ventricular overloading. Due to possible induction of hypotension by intravenous vasodilators ,their use should be judicious.

CONCLUSION:

PAH presents with challenging anesthetic management. Knowledge of pathophysiological changes while treating patients with PAH is essential for appropriate management and better outcome.

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