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Original Research Paper

Anaesthesiology

ANAESTHETIC CARE OR MANAGEMENT OF PATIENT WITH CHD - DOUBLE OUTLET RIGHT VENTRICLE (DORV) POSTED FOR EMERGENCY CRANIOTOMY AND EVACUATION FOR RECURRENT CEREBRAL ABSCESS

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KEYWORDS :

INTRODUCTION:

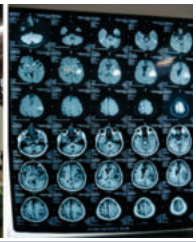
Intracranial lesions frequently occur in association with congenital malformation of the heart. With increasing diagnostic modalities, more patients with congenital heart disease (CHD) survive till adulthood and may present for coincident elective or emergent non-cardiac surgery. Providing general anaesthesia for these cases is a challenging task for anaesthesiologist with limited facilities and resources available . We report the anaesthetic care/management of patient with CHD - double outlet right ventricle (DORV) who underwent emergency craniotomy and evacuation for recurrent cerebral abscess.

Case Report:

A 42 year old male posted for emergency craniotomy and evacuation, previously a known case of CHD with DORV. Current medication history was not available Patient presented with fever, altered sensorium, cyanosis, clubbing, loud P_2 and Grade IV pan-systolic murmur in left parasternal region. HR 92/ Min ,BP 110/70 , RR 24/ Min, Spo2: 76 % on room air and SPO2 88% with 6l of oxygen. Patients Weight and height 60kgs and 163cm respectively. Laboratory findings revealed Hb 18g%, INR of 1.6,platelets 90,000. ECG showed right atrial and ventricle hypertrophy with right axis deviation. CT scan head showed ill defined, hypo density in left temporal lobe surrounded by focal edema ?residual abscess. Echocardiography showed cyanotic CHD- DORV with VSD, right to left shunt and sub valvular Pulmonary Stenosis

Preoperatively two units of random donor platelets and four units of FFP was transfused. Patient was taken up for surgery under ASA III.

Patient was premedicated with midazolam 0.5mg and fentanyl 60mcg and pre oxygenated with 100%oxygen. Patient was induced with Etomidate 20mg, suxamethonium 75mg and airway secured by 8.5mm ET tube. The patient was ventilated limiting peak airway pressures below 25 cm H_2O. Anaesthesia maintained with oxygen : air and isoflurane 0.4 to 0.6% and intermittent bolus of vecuronium for muscle relaxation. Perioperative monitoring included electrocardiogram, SpO_2, end-tidal carbon dioxide, airway pressures, urine output IBP and CVP. Patient was hemodynamically stable throughout the procedure. At the end of the procedure, neuromuscular blockade was reversed, extubated and shifted to intensive care unit. Post-operative period was uneventful.



DISCUSSION

DORV is complex congenital disease ,in which both the aorta and the pulmonary artery arise from the right ventricle and the only outlet to the left ventricle is a VSD which is almost always present. Both the systemic and pulmonary circulations are in parallel, and the circuit with lower resistance would preferentially be perfused.

Anaesthetic goals for these patients are achieved by controlling

1. Cardiac output by maintaining preload, contractility and heart rate .
2. Maintaining systemic vascular resistance (SVR) higher than pulmonary vascular resistance (PVR) to avoid increased recirculation of systemic venous blood and fall in SVR was avoided because it may leads to further reduction in pulmonary blood flow, which impedes oxygenation;
3. Patients PVR was lowered to ensure adequate blood flow to the lungs. PVR reduced by increasing inspired oxygen concentration (FiO2) and adequate ventilation. Hypothermia, hypoxemia and acidosis was avoided.
4. Adequate hydration was ensured to prevent intravascular thrombosis.

CONCLUSION:

There are no evidence-based recommendations to guide the anaesthetic management of patients with CHD undergoing noncardiac surgery. It is imperative for anaesthesiologists to understand the underlying pathophysiology of each CHD patient and to tailor the intraoperative anaesthetic management according to the specific needs and to improve the patient outcome.

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