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Original Research Paper

Anaesthesiology

MANAGEMENT OF INTRAOPERATIVE ARRHYTHMIA IN A PREVIOUSLY ASYMPTOMATIC PATIENT SCHEDULED FOR OPEN REDUCTION AND INTERNAL FIXATION WITH PLATING OF LEFT RADIUS – A CASE REPORT

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ABSTRACT Patient was posted for elective open reduction and internal fixation with plating of left radius. Regional anaesthesia was the anaesthesia of choice. Patient presented a challenge of premature ventricular contractions (PVCs) minutes after administration of regional anaesthesia (supraclavicular block of brachial plexus). In this study we have discussed the anaesthetic management of arrhythmias in a previously asymptomatic patient posted for elective orthopaedic surgery under regional anaesthesia.

KEYWORDS : Regional Anaesthesia, LAST, PVCs.

INTRODUCTION

Unanticipated intraoperative arrhythmias are abnormal heart rhythms occurring during surgery and are unexpected based on the patient's preoperative cardiac status or risk factors. These arrhythmias may be transient and benign or life-threatening and require immediate intervention to stabilize the patient's hemodynamics perioperatively.

Case Analysis

A 52 year old male with alleged history of slip and fall from height presented with fracture of middle third of left radius. Patient had no known comorbidities, no history of medical illness or surgeries in the past and no history of allergies. Patient is an occasional smoker and alcoholic.

Physical Examination: Height: 164 cms, Weight: 72 Kg, BMI: 26.77 Kg/m2

Airway Examination: MPG: Class III, Head and neck movements, spine and dentition - normal

Vitals: PR: 68/min, BP: 130/70 mmHg, SpO2: 97% on Room Air.

Investigations: Hb: 13.6g/dL, TC: 6170 cells/cu.mm Platelets: 2,94,000 cells/cu.mm; PT:13sec, INR: 0.96, aPTT: 34.1sec; RBS: 110mg/dL; Bl.Urea: 25mg/dL, Sr.Creatinine: 0.84mg/dL, Electrolytes: Na:141mEq/L K:4.05mEq/L Cl: 104mEq/L. ECG: Normal sinus rhythm, HR: 74/min;

Figure 1: preoperative ECG showing normal sinus rhythm.

Echo: EF : 62%, Moderate concentric LVH(+), Normal LV function, NO RWMA, No LVDD, Normal RV Function, No PAH, No ASD/VSD/PDA/COA, Valves are normal, No pericardial effusion.

Cardiologist opinion: fit to undergo procedure under minimal risk.

Chest Xray: WNL

The patient was assessed and was fit for procedure under ASA PS II.

Intraoperative Management:

Pre-anaesthetic medications were given. Standard ASA Monitors were connected and baseline vitals were noted. Under aseptic precautions, under ultrasound guidance, Left Supraclavicular Brachial Plexus Block was administered with 12ml of 0.5% Inj. Bupivacaine + 12mL of 2% Inj. Lignocaine with Adrenaline + Inj. Dexamethasone 4mg. Total volume 25mL was given. After 15min of administering regional anaesthesia, ECG on monitor showed regularly irregular ectopics (?PVCs) in lead II – one after every 3 beats (15/min). Patient was otherwise asymptomatic. Another monitor (6 lead) was connected and ECG pattern was confirmed to be ventricular arrhythmias. It was managed with 2% Inj. Lignocaine 42mg IV followed by Inj. Metoprolol 5mg IV, 5min later. HR was 51- 53/min, there was no change in rhythm. Inj. Amiodarone 300mg IV bolus over 20 min was given and rhythm was reverted. It was followed by maintenance dose of 300mg as IV infusion. Frequency of ectopics then decreased to 10/min – one after every five beats. Procedure was completed successfully and patient was shifted to intensive care unit (ICU). Vitals: PR 60/min, BP: 120/70mmHg, SpO2 99% on Room Air.

Figure 2: Monitor showing ectopics - one after every 3 beats, intraoperatively.

Post procedure, a 12 lead ECG was done. ECG showed sinus rhythm. Phycisian opinion and cardiologist opinion was obtained.

ABG : pH 7.36, PCO2: 38mmHg, PO2: 96.8mmHg, Na: 138mmol/L, K: 4.03mmol/L, Cl: 99mmol/L, Sr. Mg: 1.7mg/dL, Sr. Ca: 8.8mmol/L, Sr. Na: 143mEq//L, Sr. K: 4.4mEq/L, Sr. Cl: 103mEq/L.

Advise was to continue Inj. Amiodarone infusion 300mg over 6 hrs and to do serial ECGs. ECG 12 hrs later showed sinus bradycardia. 24 hrs later and thereafter ECG was normal.

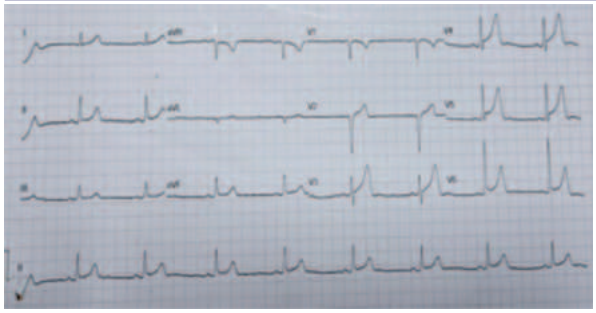

Figure 3: ECG taken 12hrs later showing sinus bradycardia.

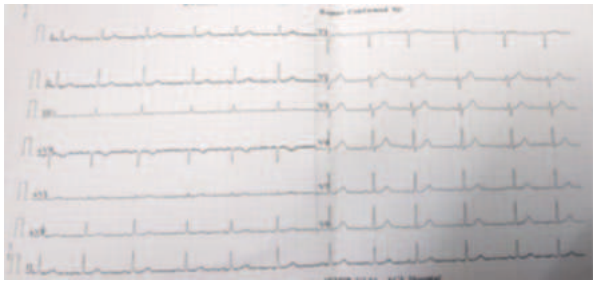

Figure 4: ECG taken 24hrs later showing normal sinus rhythm.

DISCUSSION

Arrhythmias can be triggered by various factors such as induction of anaesthesia, surgical stress, dyselectrolytemia, hypoxia, or adverse reactions to medications administered perioperatively. Prompt recognition through continuous ECG monitoring is crucial. Management strategies include correcting dyselectrolytemia, titrating anesthesia or medications, providing oxygenation support and considering cardioversion or other interventions as needed. It often involves a collaborative effort among anaesthesiologists, surgeons, and cardiologists. After stabilization, it is important to thoroughly review the event to understand the cause and assess the impact on the patient's overall condition.

CONCLUSION

Unanticipated arrhythmia was meticulously managed intraoperatively and postoperatively with Inj. Amiodarone, which has proven to be the effective antiarrhythmic drug in such scenarios.

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Conflict of Interest: None

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