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Anaesthetic Management Of A Case Of Palmar Abscess With CAD S/P PCI Under USG Guided Axillary Block

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Abstract

Anesthetic management of cardiac patients posted for non-cardiac surgeries are always challenging to the anaesthesiologists due to the reduced functional reserve along with multiple comorbidities and polypharmacy (Antiplatelets and Anticoagulants). Anaesthetic plan should be tailored considering all these factors without disconcerting the altered physiology in these patients. Regional anaesthesia techniques prove to be a better alternative in such patients, with least physiological insult. . Herewith discussing about anaesthetic management of a case of right palmar abscess with CAD s/p PCI, on anticoagulants, for incision and drainage under USG axillary block.

Keywords: Regional anaesthesia, axillary block,non-cardiac surgery,CAD

Introduction

In India, cardiovascular illnesses are more common, particularly coronary heart disease (CHD). According to the Registrar General of India, CHD caused 17% of all deaths and 26% of adult deaths between 2001 and 2003. This number rose to 23% of all deaths and 32% of adult deaths between 2010 and 2013.[1] These patients are more susceptible to myocardial ischemia, myocardial infarction (MI), conduction issues, morbidity, and mortality during the perioperative period when under anaesthesia.[2] . Patients who are taking various anticoagulation and antiplatelet medications pose higher risk for general anaesthesia along with their comorbidities.[3] The interruption of these drugs can increase the risk of thrombotic events during or after surgery.

Case Presentation

A 55-year-old woman complained of right hand swelling and pain for the past month after having her right radial artery cannulated for coronary angiography. She was non-compliant with her medication for hypertension and type II diabetes for a month before experiencing chest pain that required radial artery cannulation. She is also a known case of CAD who underwent PCI for Right Coronary Artery occlusion and was given Aspirin, Clopidogrel, Atenolol, and Atorvastatin for 6 months. Clopidogrel was discontinued two days before. There were no signs or symptoms of heart failure. Her vitals were stable, with a heart rate of 68bpm and a blood pressure of 150/90 mm Hg. Systemic examination within acceptable ranges; The airway was examined, which revealed Mallampatti Grade III, with mild neck extension restriction.

Investigations revealed a haemoglobin of 9.0 gm/dl, a total leucocyte count of 39480 cells/cu.mm, and platelets of 4.0 lakhs/cu.mm. Her urea and creatinine were 40 mg/dl and 2.07 mg/dl, while her random blood sugar reading was 400 mg/dl and her urine

ketones were negative. ST depression on leads II, III, aVF, V2 and V4 were visible on electrocardiography. Echocardiography showed hypokinesia of the left ventricular basal, inferoseptal, and inferolateral walls along with an EF of 35% and Grade 1 diastolic dysfunction. A CAG revealed a 50% partial distal occlusion of the lateral circumflex artery. An ultrasound of the upper limb was performed to rule out vessel thrombosis, and the results show colour flow and no sign of an echogenic thrombus.

The case was taken for an emergency incision and drainage under USG guided Axillary block. After obtaining consent, she was premedicated with Midazolam 1mg i.v. Baseline vitals were 85bpm heart rate, 156/90 mm Hg blood pressure, and 98% room air saturation. USG guided axillary block with 23G Quincke Spinal Needle, single attempt with 20 ml of 0.5% Bupivacaine and dexamethasone 4mg, and intercostobrachial Nerve block for tourniquet pain were performed under aseptic precautions. The procedure took 2 1/2 hours and was uneventful. The intra- and post-operative vitals, urine output, and blood sugars were all stable. With stable hemodynamics and a VAS of 2, the patient was moved to the PACU for observation. Cardiology, nephrology, and endocrinology specialists' recommendations were sought after and followed. She improved symptomatically, had a healthy wound, and was discharged from the hospital on post-operative day 7. She was advised to follow up with the relevant departments for further care.

Discussion:

Patients with CAD who undergo non-cardiac surgery are more likely to have perioperative complications and higher rates of morbidity and mortality, especially if the surgery is urgent or emergent.[2] In our case, the patient had PCI with DES and was put on dual antiplatelets. In scenarios involving elective surgery, antiplatelet discontinuation should be timed accordingly. Patients who are on DAPT and requiring emergency surgery have an additional risk of bleeding as compared to monotherapy, hence the technique of anaesthesia and necessary safety precautions plays a vital role in the management of such patients.[4] Antiplatelets have diverse pharmacological effects on coagulation and platelet function. If regional anaesthesia is indicated for these patients, normalisation of platelet function is required. The time between the discontinuation of the drug and performance of regional or neuraxial procedures should be noted in patients receiving antiplatelets and anticoagulants. Non-interruption of these medications can increase the risk of bleeding during surgery and trigger undesirable outcomes in the form of mild to severe bleeding. Even though clopidogrel was not stopped for 7 days in our case, considering the emergency nature of the procedure, the patient was taken up for the surgery with due risk explained.

Our primary goal in these patients is to provide adequate plane of anaesthesia with the least amount of physiological insult. General anaesthesia and regional anaesthesia are two different options in performing such cases. Although general anaesthesia has the advantage of better hemodynamic control, the use of polypharmacy and hemodynamic changes during laryngoscopy will have impact over perioperative myocardial demands. Regional anaesthesia ought to be the preferred form of anaesthesia in these patients after considering multiple factors.

Ultrasound-guided axillary block was considered in this patient to maintain hemodynamic stability and avoid postoperative ventilation if General anaesthesia was considered. Axillary blocks appear to be safe and effective regional technique suitable for multiple procedures in the perioperative care of the patient. Axillary approach provides good surgical anaesthesia for elbow and hand. Among various Brachial Plexus blocks, Axillary block is considered as safe due to the safe anatomical location which avoids the risk of phrenic nerve injury or pneumothorax/ hemothorax. Ultrasound guidance increases the efficacy with lesser volume of local anaesthetic being used, but the risk of intravascular injection still persist which can be avoided by hydro dissection before administering the drug, for proper separation of the plane and fractioned administration of drugs.[5-8] Hussein et al, who compared USG guided axillary versus supraclavicular block in emergency crushed hand patients, concluded that axillary block makes a good alternative for supraclavicular block due to its ease to perform, high success rate under imaging, less complications and easier identification of structures, even in case of obese individuals.[9,10] Thus the plan of ultrasound guided Axillary Block in this patient is justified in multiple grounds.

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Conclusion:

The advent of ultrasound has brought many benefits to peripheral nerve blocks including safety and effectiveness, possibility of visualising the neurovascular structures and the needle during the procedure. It has been documented in case studies and series in the literature that skilled anaesthesiologists can safely administer superficial perivascular blocks to patients receiving dual antiplatelet therapy.[11] In anaesthesiology societies and guidelines, there is no clear consensus on the use of peripheral nerve blocks. To demonstrate the technique's safety for these patients, larger series should be carried out, though. Due to safety concerns of bleeding risk on patients with antiplatelets / anticoagulants, guidelines and recommendation needs to be formulated for appropriate anaesthesia technique for decreasing morbidity and mortality. Patient specific factors (co-morbid illness and drugs) and surgery related issues (type of procedure) must also be taken into consideration while panning the anaesthetic technique for better patient outcome.

References:

1. Gupta R, Mohan I, Narula J. Trends in Coronary Heart Disease Epidemiology in India. Ann Glob Health. 2016 Mar-Apr;82(2):307-15
2. Hedge J, Balajibabu PR, Sivaraman T. The patient with ischaemic heart disease undergoing non cardiac surgery. Indian J Anaesth. 2017 Sep; 61(9):705-711.
3. *Barker R, Kelkar A, Searle A, Niraj G. Upper limb regional anaesthesia and altered coagulation function. Br J Anaesth 2013; 110: 486-487*
4. Song JW, Soh S, Shim JK. Dual antiplatelet therapy and non-cardiac surgery: evolving issues and anesthetic implications. Korean J Anesthesiol [Internet]. 2017 Jan 26 [cited 2023 Mar 11]; 70(1):13–21.
5. Working Party: Association of Anaesthetists of Great Britain & Ireland, Obstetric Anaesthetists' Association, & Regional Anaesthesia UK (2013). Regional anaesthesia and patients with abnormalities of coagulation: the Association of Anaesthetists of Great Britain & Ireland The Obstetric Anaesthetists' Association Regional Anaesthesia UK. Anaesthesia, 68(9), 966–972.
6. Trunfio, G., Yaguda, B., Saunders, P. and Feierman, D. (2014) Ultrasound-Guided Axillary Block in an Anticoagulated Patient after Heartmate II Implantation. Open Journal of Anesthesiology, 4, 159-162
7. Faccenda, K. A., & Finucane, B. T. (2001). Complications of regional anaesthesia Incidence and prevention. Drug safety, 24(6), 413–442.
8. Satapathy AR, Coventry DM. Axillary brachial plexus block. Anesthesiol Res Pract. 2011; 2011:173796. doi: 10.1155/2011/173796
9. Hussien RM, Ibrahim DA. Ultrasound Guided Axillary Brachial Plexus Block Versus Supraclavicular Block In Emergency Crushed Hand Patients : A Comparative Study. The Open Anaesthesia Journal [Internet]. 2018 Aug 29 [cited 2023 Mar 11]; 12(1).
10. Roshid MH, Sharif M, Uddin MN, et al. Brachial plexus anaesthesia: A comparative study on supraclavicular subclavian perivascular technique with the axillary transarterial technique with a tourniquet. Chattagram Maa-O-Shishu Hospital Medical College Journal 2015; 14(2): 21-6.
11. Martins LE, Ferraro LH, Takeda A, Munechika M, Tardelli MA. Ultrasound-guided peripheral nerve blocks in anticoagulated patients - case series. Braz J Anesthesiol. 2017; 67(1):100-106.

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