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Case Report

Ilioinguinal and Iliohypogastric Nerve Blockade as an Adjunct for Inguinal Hernioplasty in a Patient with Aortic Valve Replacement: Case Report

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ABSTRACT

Choosing appropriate anesthetic modality in patients with compromised cardiac function with the administration of peripheral nerve block ensures hemodynamic stability. We present the case of a 63y, male patient with an operative history of aortic valvuloplasty, on anticoagulant warfarin. Patient was given general anesthesia and supraglottic airway device, LMA was inserted to prevent intubation response. This was supplemented with USG guided ilioinguinal and iliohypogastric nerve blocks with inj ropivacaine 0.325%, 15ml and inj dexamethasone 2mg as adjuvant. Addition of peripheral nerve blockade to general anesthesia provided perioperative analgesia, so quick emergence and recovery was possible.

Anesthetists have a variety of options to choose from, however, it certainly depends on the ability of the provider to choose and appropriately combine techniques from the wide array of available options. To put forth knowledge and expertise so as to save lives of those patients with compromised organ function, while they undergo elective or life-saving surgeries is what one should acquire. We discuss here, a case of inguinal hernioplasty in a patient with a history of aortic valvuloplasty, opereated under supraglottic airway device insertion and ilioinguinal and iliohypogastric nerve blocks.

Case Report

A 63/M, with aortic stenosis and surgical history of aortic valvuloplasty 4 years ago, currently on tab warfarin 20mg OD and left ventricular ejection fraction of 35%, was posted for elective right inguinal hernioplasty. Patient was advised to withhold tab warfarin for 5 days prior to surgery and PT/INR was ensured to be within reference range. There was ST depression in II, aVL, V4-V6 on ECG. Other preoperative investigations were normal. On examination, patient had adequate mouth opening with MPC II. On auscultation, a mid-systolic ejection murmur was heard. Considering history of chronic anticoagulation and aortic stenosis being an absolute contraindication to central neuraxial blockade, the commonly preferred SAB and EA were not feasible options. Hence, we planned for general anesthesia with LMA insertion, avoiding intubation response and supplemented it with ilioinguinal- iliohypogastric nerve blocks (IINB/IHNB).

On the day of surgery, after confirming adequate NBM hours, procedure consent and high risk consents were taken. Difficult intubation trolley and emergency cardiac drugs including vasopressors were kept ready in the OT. Once in the OT, all standard monitors were attached and patient was premedicated with intravenous (IV) inj midazolam 1mg, inj fentanyl 100mcg and inj dexamethasone 8mg. Inj glycopyrollate and inj ondansetron was avoided from the usual premedication cocktail so as to avoid precipitation of tachycardia and arrhythmia. Inj Etomidate 20mg IV was used for induction, being more cardiostable and LMA Supreme no

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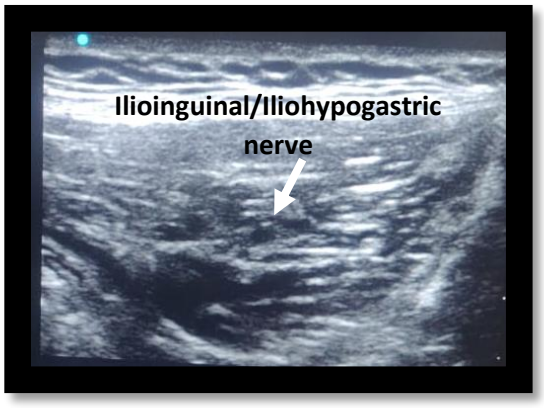
4 was inserted for intraoperative ventilation, avoiding endotracheal intubation. He was maintained using 50% O2 + 50% N2O + Sevoflurane with intermittent positive pressure ventilation on closed circuit. Under ultrasound guidance, right sided IINB/IHNB were given with inj ropivacaine 0.325%, 15ml with inj dexamethasone 2mg as adjuvant, while keeping the patient under deep plane of anesthesia, to prevent nociception induced surge in hemodynamics [Figure 1]. All throughout the surgery, patient vitals were well within the desired limits. No additional analgesic was given intraoperatively. Patient was shifted to the surgical ICU for post-operative monitoring and was ambulated on post-operative day 1 without any discomfort.

Figure 1- USG image of IIN/IHN



Discussion

Patients with aortic stenosis have an increased risk of perioperative cardiac events. However, anesthesia for safe and uneventful non-cardiac surgeries in these patients can be provided with appropriate monitoring and perioperative management. Early detection and treatment of hypotension and arrhythmias will prevent the cycle of complications.

Anesthetic goals in a patient with aortic stenosis should certainly include avoidance of tachycardia and hypotension, hence maintaining hemodynamics so as to eliminate the chances of any untoward events. The use of a supraglottic airway device to secure the airway played a key role in attenuation of the possible endotracheal intubation response. Central neuraxial blockade has been traditionally circumvented in patients with valvular heart diseases because it causes a sudden and profound drop in systemic vascular resistance and thereby a decrease in coronary perfusion [1]. This leads to myocardial ischemia and decreased cardiac contractility, further worsening ejection fraction and stroke volume. The use of real-time ultrasonography for regional block ensures higher success rate in the initial attempt avoiding multiple pricks, improves the quality of block and prevents inadvertent accidental vascular.

We preferred to use ropivacaine, a pure S (-) enantiomer and a long acting amide local anesthetic, over the commonly used bupivacaine for regional block owing to its better safety profile and greater degree of sensory-motor differentiation [2]. This helps in early ambulation of the patient. Our patient was ambulated on day 1 of surgery comfortably. This also indicates the quality of analgesia with IIN/IHN blocks which is of utmost importance for early recovery, particularly in high-risk cases.

Literature review suggests that regional anesthetic techniques have been used successfully for lower limb surgical procedures in high risk patients. Kamal K et al. in their study compared the effectiveness of transversus abdominis plane (TAP)block versus IIN/IHN block and concluded that USG guided IINB/IHNB decreased the post-operative analgesic requirement [3].

Similarly, Bang YS et al. conducted a study on 50 patients to compare effects of subarachnoid block (SAB) versus IHN block under MAC with remifentanil infusion in patients undergoing herniorrhaphy [4]. They reported that IHNB is an alternative to SAB especially in patients who are unfit for SAB or GA. It provides hemodynamic stability with lesser side effects and higher satisfaction

Dexamethasone has been used as an adjuvant in various peripheral nerve blocks. There have been numerous studies like that of Deshpande et al. studying the efficacy of dexamethasone as adjuvant with local anesthetics for peripheral nerve blocks [5].

In our case, the patient did not demand analgesia for 24hrs following surgery (VAS <3) and patient was comfortable.

Conclusion

From our case of aortic valve replacement, it can be concluded that supraglottic airway device supplemented with ultrasound guided regional block is a safer choice where central neuraxial block is contraindicated and endotracheal stress response is to be avoided. With the advent of ultrasonography, it is possible to provide safe regional anesthesia as well as perioperative analgesia which is essential for improvement in quality care of the patient.

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