



ANESTHETIC MANAGEMENT IN A PATIENT WITH ISCHEMIC HEART DISEASE AND BUNDLE BRANCH BLOCK POSTED FOR INGUINAL HERNIOPLASTY - A CASE REPORT.

Anaesthesiology

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KEYWORDS

inguinal hernia, triple nerve block, iliohypo-gastric, ilioinguinal, genitofemoral nerve block.

INTRODUCTION:

Ilioinguinal and iliohypogastric nerve blocks, along with a genitofemoral nerve block, can be used for anesthesia during hernia surgery and post-operative pain relief. These nerve blocks help provide localized pain relief by blocking nerve signals in the affected area, allowing the patient to undergo the procedure without feeling pain. This type of anesthesia can be an effective alternative to general anesthesia and may have fewer side effects for certain patients. It is important for the anesthesiologist to carefully administer these nerve blocks to ensure the patient's comfort and safety during the surgical procedure.

Case Report:

A 67 years old male weighing 50kg presented to surgery OPD with the chief complaint of swelling over left inguinal region. Patient had a history of Ischemic heart Disease, dilated cardiomyopathy, hypertension, diabetes and benign prostatic hyperplasia since 15 years. Patient had a history of undergoing CABG before 15 years and hospital admission for orthopnoea and left ventricular failure. Patient was on Tablet Aspirin 75mg, clopidogrel 75 mg, rosuvastatin 10mg, carvediol 12.5mg, torsemide 100mg, dapagliflozin 10mg, tamsulosin 0.4mg, finasteride 5mg, febuxostat 40mg, digoxin 0.25mg, alprazolam 0.25mg.

On examinations, Pulse rate was 72/min, irregular in rhythm with a blood pressure of 118/76 mm/Hg and oxygen saturation was 98% on 3L/min of O₂ flow on Hudson mask, respiratory rate was 20/min. Respiratory system examination was normal with no foreign sounds or crepitations were present. Airway and spine was normal. All routine blood investigation were within normal limits.

ECG was showing irregular heart rate with W pattern QRS complex in lead V2 V3 V4, Inverted P wave in lead V1 V2 V3 and left bundle branch block.

2D ECHO was showing ejection fraction of 25-30% with severe LV dysfunction. Chest X ray was showing cardiomegaly.

Anesthetic Management

The patient was transferred to operation theatre, peripheral IV access was secured with 20G IV cannula in right forearm and a normal saline solution was started. Injection ondansetron 4 mg was given intravenously. Preoperative evaluation led to the decision for surgery under ASA grade IV. NIBP, SpO₂, ECG, HR and RR was monitored throughout the surgery. Patient was received oxygen of 4L/min using face mask in pre and perioperative period.

Patient was placed in supine position and under all aseptic precautions using USG linear probe of sonosite left Ilioinguinal and iliohypogastric nerve was identified near ASIS figure 1(A). Once identified using simuplex 10 cm 25G needle, nerve is accessed and Inj Bupivacaine 0.5% of 10ml and Inj Lignocaine adrenaline 2% of 12 ml was given in left inguinal region. Using USG linear probe Genital branch of genitofemoral nerve of left side was identified and under all aseptic precautions Inj Bupivacaine 0.5% of 5cc was given visualising desired drug spread figure 1(B). Using 10ML of Injection lignoadrenaline 1% incision site was infiltrated in skin, subdermal, interadermal, deep subcutaneous, and underneath the

external oblique aponeurosis. After 15 minutes of the block surgery was started and ends after an hour. Throughout the surgery ECG was showing rhythm shown in Figure 2, blood pressure was maintained 101/72 mmHg. Patient was given Injection fentanyl 1ug/kg for sedation during the surgery. Post operative vitals were stable and shifted to surgical ward.

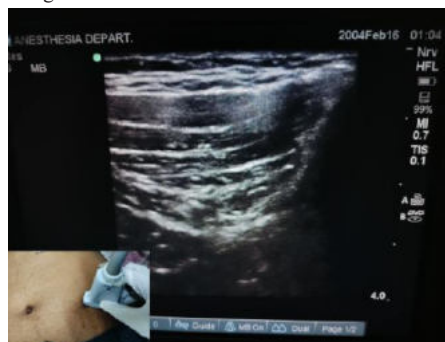


Figure 1(A) shows ilioinguinal and iliohypogastric nerve with ultrasonography probe placement.



Figure 1(B) Shows Needle with genitofemoral nerve location



Figure 2: intraoperatively ECG changes and vitals parameters

DISCUSSION

The ilioinguinal, iliohypogastric, and genitofemoral nerve blocks(triple nerve block)are commonly used in hernia repairs, particularly in elderly patients with heart conditions. This can be beneficial for elderly patients who may be at higher risk for complications from general anesthesia and spinal anesthesia.

Spinal anesthesia can have disadvantage for patients with a low ejection fraction and abnormal ECG patterns. These may include the potential for severe hypotension, which can be detrimental for patients with a compromised cardiac function. There is also a risk of bradycardia and arrhythmias, which can further impact cardiac function during the procedure.

General anesthesia can have disadvantages for patients with low ejection fraction and abnormal ECG patterns during hernia surgery. Concerns include cardiac depression, decreased heart function, and increased risk for patients with heart conditions. Respiratory depression and aspiration risks are also present, especially in patients with compromised lung function. Recovery from general anesthesia may be prolonged in patients with cardiac issues, leading to post-operative complications. It is crucial for to carefully assess the risks and benefits of general anesthesia and spinal anaesthesia in these patients before proceeding with hernia surgery.

The triple nerve block can have several advantages for cardiac patients with a low ejection fraction and abnormal ECG patterns undergoing hernia surgery. These nerve blocks provide effective anesthesia to the surgical site while minimizing the systemic effects seen with general anesthesia or spinal anesthesia. This can help reduce the risk of cardiac depression, hypotension and arrhythmias. Additionally, the triple nerve block is a regional anesthesia technique that offers targeted pain relief and may also lead to faster recovery times and decreased post-operative pain.

According to Kapadia et al, blocking the genital branch of the genitofemoral nerve near the pubic tubercle and along the line from the pubic tubercle to the umbilicus can effectively block the crossover fibers from the opposite side. This results in the reduction of pain during the handling of cord structures, a primary cause of intraoperative discomfort and pain for the patient.

In our case, there were no intraoperative or postoperative complications, and the patient did not report any discomfort. The patient experienced a pain-free period of 6 hours. Therefore, we can conclude that a triple nerve block with sedation proves to be an effective anesthesia technique for elderly cardiac patients undergoing hernia surgery.

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