

Mesh hernioplasty for inguinal hernia in Eisenmenger syndrome: local anesthesia approach

¹Dr. Priyanka Thakur, MD, Department of Anaesthesia, Indira Gandhi Medical College, Shimla HP India

²Dr. Prteet Negi, MS, Department of General Surgery, Dr. Rajender Prasad Medical College Kangra, Tanda H.P India

³Prof. Dr Ajay Sood, MD, Department of Anaesthesia, Indira Gandhi Medical College, Shimla HP India

⁴Dr. Aparna Sharma, MD, Department of Anaesthesia, Indira Gandhi Medical College, Shimla HP India

Corresponding Author: Dr. Prteet Negi, MS, Department of General Surgery, Dr. Rajender Prasad Medical College Kangra, Tanda H.P India

Citation this Article: Dr. Priyanka Thakur, Dr. Prteet Negi, Prof. Dr Ajay Sood, Dr. Aparna Sharma, “Mesh hernioplasty for inguinal hernia in Eisenmenger syndrome: local anesthesia approach”, IJMSIR- July -2021, Vol – 6, Issue - 4, P. No. 185 – 187.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

A 26 year old male was scheduled for mesh hernioplasty for right inguinal hernia. During pre-anesthetic checkup patient gave history of shortness of breath on exertion and blue discoloration of lips and fingertips since childhood .Patient underwent angiography one year before for which he was diagnosed with aorto pulmonary window with irreversible severe PAVC(Eisenmenger Syndrome) for which he was these medications: tab bosentas 62.5 mg BD, tab sildenafil 20 mg TDS, tab aptas –t 25 (was not taking for 2 months). Infiltration of local anesthesia is arguably the least invasive and safest of all anesthetics for hernia repair. Combined with appropriate intravenous sedation to remove any unpleasant memories, it has no equal for inguinal hernia repairs . And in eisenmenger syndrome- main anesthetic goal remains the avoidance of fall in arterial blood pressure by maintaining both the cardiac output and systemic vascular resistance (SVR) which can be achieved only in local anaesthesia.

Keywords: Eisenmenger syndrome (ES), Mesh hernioplasty, Repair

Introduction

Eisenmenger syndrome (ES) represents the most advanced form of pulmonary arterial hypertension (PAH) associated with congenital heart defects (CHD). Although patients with ES frequently survive into their third or fourth decades of life, the symptoms of this disease, which included dyspnea, cyanosis, fatigue, dizziness, and syncope, reduce life expectancy. In addition, cardiac arrhythmias, an important late complication of ES, are a frequent cause of sudden death in patients with ES. ¹⁻²

During the past 50 years, the prevalence of ES in the Western world has reduced by an estimated 50%, resulting from advances in surgery and pediatric cardiology. Clinical management of patients with ES has traditionally focused on palliative and supportive treatment; however, an increased understanding of the pathophysiology of ES and the success of disease-

specific treatment for PAH has offered new hope for patients with ES. This review provides an overview of the pathophysiology and natural history of ES, an evaluation of similarities and differences between ES and PAH, and a summary of key data on emerging treatments.³⁻⁴

Mesh hernioplasty is one of the most commonly performed operations worldwide by local anesthesia approach or spinal anesthesia. Patient with Eisenmenger syndrome undergoing mesh hernioplasty special concern regarding hemodynamic stability and adequate pain relief should be given.

Case report

A 26 year old male was scheduled for mesh hernioplasty for right inguinal hernia. During pre-anesthetic checkup patient gave history of shortness of breath on exertion and blue discoloration of lips and fingertips since childhood. Patient underwent angiography one year before for which he was diagnosed with aorto pulmonary window with irreversible severe PAH (Eisenmenger Syndrome) for which he was on these medications: tab bosentas 62.5 mg BD, tab sildenafil 20 mg TDS, tab aptas -t 25 (was not taking for 2 months). He had pneumonia at age of two and half years and also underwent one episode of seizure when he was six year old.

On examination patient with E4V5M6 had cyanosis of lips, clubbing in fingers of hand and toe. Pulse rate was regular with loud prolonged S₁ with LA enlargement on chest X ray, with P mitrale pattern on lead 2, 3 and Avf on ECG. ECHO was showing left ejection fraction of 75% with severe PAH with mild TR with normal LV/RV function. Baseline investigation within normal range.



Figure 1: Chest x-ray PA view

After explaining anaesthetic procedure and risks involved, informed consent was taken.

In operating room standard ECG, NIBP and pulse oximeter were attached. 18 G intravenous cannula secured in left upper limb. Preoperative blood pressure was 110/70 mm hg, HR 96/min, spo₂ 89%, RR 16/min. Ventimask attached with oxygen flow @ 4l/min.

Under aseptic condition site cleaned and draped under ultrasound guidance TAP block given with 23 G quinckes needle, 10 cc bupivacaine 0.5% and 10 cc lingo adr 2% given with aspiration. 5 cc bupivacaine and 5cc lingo adr 2% given subcutaneously along linea nigra subcostal region.

Effect checked and Injection midazolam 2 mg iv to allay anxiety was given.

Patient - complaining discomfort 1 minute after incision, gradually increased along with pain as surgery proceeded.

Injection fentanyl 50 mcg given iv. When still pain not settled (VAS =8) Inj Ketamine 30 mg iv given. After 1 minutes pt underwent cataleptic posture (neck got rigid and turned to one side) followed by abnormal body movements (seizure). Patient shifted to closed circuit

although he was spontaneously breathing. 2 episodes of seizure activity were seen intraoperatively but patient was maintaining his spontaneous ventilation. Postoperative vitals were HR 88/min, BP 138/90 mmhg, spo2 91% at ventimask with o2 @ 4L/min. No episode of seizure in postop period. Patient shifted to icu for monitoring.

ABG at ICU

- PH 7.379 Na 126.3
- PCO2 28.7 K 3.4
- PO2 69 Cl 97
- HCO3 16.6 Glu 117
- BE -6.8 Lac 0.76
- SO2 93.6

Pt shifted toward after 24 hr monitoring

Discussion

Preffered choice for all reducible adult inguinal hernia- LOCAL ANAESTHESIA (safe, simple, effective and economical).

Offer long postoperative analgesia by inhibiting buildup of local nociceptive molecules.

Intravenous Sedation: Although complication of intravenous drugs like episode of seizure in present case may be there but they are proven to improve success rate of LA.

Disease like chronic obstructive emphysema, heart disease (here- eisenmenger syndrome), and renal failure can easily be handled with local anesthesia without increasing the risk to the patient.(maintenance of Haemodynamic stability).

For surgery point of view:-testing of the repair at the conclusion of the operation, by having the patient cough, cannot be obtained with any other anesthesia method.

Dissatisfaction of LA - intraoperative pain and pain during infiltration + unsatisfactory muscle relaxation

especially in incarcerated hernias + distortion of anatomy of surgical site

Conclusion

Infiltration of local anesthesia is arguably the least invasive and safest of all anesthetics for hernia repair. Combined with appropriate intravenous sedation to remove any unpleasant memories, it has no equal for inguinal hernia repairs . And in eisenmenger syndrome-main anesthetic goal remains the avoidance of fall in arterial blood pressure by maintaining both the cardiac output and systemic vascular resistance (SVR) which can be achieved only in local anaesthesia.

References

1. Eisenmenger V. Die angeborenen Defecte der Kammerscheidewanddes Herzens. Z Klin Med 1897;32:1–28.
2. Wood P. The Eisenmenger syndrome or pulmonary hypertension withreversed central shunt. Br Med J 1958;2:701–9.
3. Daliento L, Somerville J, Presbitero P, et al. Eisenmenger syn-drome. Factors relating to deterioration and death. Eur Heart J1998;19:1845–55.
4. Diller GP, Gatzoulis MA. Pulmonary vascular disease in adults withcongenital heart disease. Circulation 2007;115:1039 –50.