Section: Anaesthesiology

Original Research Article

# TO STUDY THE OUTCOME OF THORACIC EPIDURAL BLOCK VERSUS GENERAL ANESTHESIA IN FEMALE PATIENTS UNDERGOING BREAST CANCER SURGERIES

*Received* : 10/11/2023
*Received in revised form* : 18/12/2023
*Accepted* : 02/01/2024

*Keywords: thoracic epidural anaesthesia, general anesthesia, breast surgery*

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DOI: 10.47009/jamp.2024.6.1.76

Source of Support: Nil,
Conflict of Interest: None declared

*Int J Acad Med Pharm*
2024; 6 (1); 397-399

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## Abstract

**Background:** To assess the intraoperative hemodynamic parameters, postoperative analgesia and other side effects like nausea, vomiting, sedation in patients with general versus thoracic epidural anesthesia. **Objective:** Comparison of hemodynamic changes and complications between general versus thoracic epidural anesthesia. **Material & Methods:** This hospital based observational study was conducted on 70 patients. Patients receiving Thoracic epidural Anesthesia are grouped as Group TEB (n=35) and GROUP GA(n=35) are the patients receiving General Anesthesia. Patient satisfaction, the need of supplementary sedation, hemodynamic variability, need of analgesia supplementation and others side effect like nausea vomiting during and in postoperative period were recorded. **Results:** Hypertension, bradycardia and tachycardia were recorded intraoperatively in Group GA. Post operative complications such as nausea, vomiting and shivering were recorded more in Group GA.**Conclusion:** Thoracic epidural block for breast surgery is better alternative than general anesthesia in terms of better intraoperative hemodynamic stability without any major side effects

## INTRODUCTION

Breast cancer is one of the commonly occurring cancers in women. In India it accounts for 15-32% of all female cancers.[1] The incidence of breast cancer as well as need of surgical treatment has been increasing probably due increased awareness and improved diagnostic tools resulting early diagnosis and favorable surgical outcome.

Routinely breast surgeries have been performed under general anesthesia. However, it does not eliminate the surgical stress response and requires drug for eliminating undesirable side effects like nausea, vomiting, respiratory depression etc.

Recently, there has been growing interest amongst Anesthesiologists towards regional Anesthesia for various breast surgeries for overcoming those problems as well as better post-operative pain management.[1]

With regional anesthesia better management is expected for patient with co morbid condition like diabetes, COAD, hypertension etc during postoperative period.

The present study compared thoracic epidural block and general anesthesia in female patient undergoing breast cancer surgeries.

## MATERIALS AND METHODS

After getting the approval from institutional ethics committee(H)and after obtaining informed consent, adult women from age 25 to 80 years and from ASA I, II. III & IV were enrolled for the study. Before surgery, all patients were explained regarding benefits of thoracic epidural anesthesia over general anesthesia. Patients receiving Thoracic epidural Anesthesia are grouped as Group TEB (n=35) and GROUP GA are the patients receiving General Anesthesia.

All patient, after arrival at operating room, cannulated with 18 G IV canula and pre-loaded with Ringer lactate solution 15-20 ml /kg body weight. Noninvasive blood pressure, pulse oxymeter (SpO2) and ECG monitored throughout the operation. The Group TEB received thoracic epidural Anesthesia. Here at sitting position, after aseptic care, the T1-T2space identified and a 18G touhy needle was inserted in midline. The needle placed with the loss of resistance technique. An epidural catheter was introduced 3-5 cm into epidural space Touhy needle. After negative aspiration a 3ml test dose 2% lignocaine with adrenaline was administered and looked for any adverse reaction. After confirming


ISSN (O): 2687-5365; ISSN (P): 2753-6556

negative reaction, 10 ml of 0.25% plain bupivacaine was injected through the catheter. After confirming the adequate analgesia surgery was started. Top up dose of bupivacaine of 0.25% 8ml was given after 90 mines according to requirement. Patient was sedated with iv midazolam and oxygenated with oxygen through face mask. The Group GA used to get conventional anesthesia. Premedication with injection glycopyrolate 0.004 mg /kg, ondansteron0.008 mg/kg, pantoprazole 40 mg iv, midazolam 0.2mg/kg and fentanyl 2mcg/kg. Preoxygenated with 100% oxygen for 3mins. Propofol injection 2-2.5 mg/kg and succinylcholine 1.5mg/kg. Intubated. Maintenance done with oxygen and nitrous oxide. Atracurium 0.5 mg/kg administered iv. Neostigmine0.05mg and glycopyrolate 0.01mg/kg was injected iv for reversal. Post-operative analgesia was assessed.

Patient satisfaction, the need of supplementary sedation, hemodynamic variability, need of analgesia supplementation and others side effect like nausea vomiting during and in postoperative period were recorded and master chart was prepared. Statistical significance was tested by chi square test and student t test. The P value less than 0.5 was consider significant.

## RESULTS

**Table 1: Demographic data**

| | Group TEB | Group GA | P value |
|---|---|---|---|
| Age | 41.4+-14.17 | 46.51+-12.16 | 0.0933 (P >0.05) |
| Height | 152.96+-4.15 | 152.75+-3.85 | 0.8256(P >0.05) |
| Weight | 48.97+-4.75 | 50.91+-7.38 | 0.1948(P >0.05) |
| Bmi | 20.92+-1.75 | 21.85+-3.30 | 0.1434(P >0.05) |
| ASA I | 15 | 23 | 0.2541(P >0.05) |
| ASA II | 16 | 10 | 0.2541(P >0.05) |
| ASA III | 03 | 01 | 0.2541(P >0.05) |
| ASA IV | 01 | 01 | 0.2541(P >0.05) |

**Table 2: Intraoperative characteristics**

| | Group TEB | Group GA | P value |
|---|---|---|---|
| Duration of surgery | 89.60+-28.18 | 100.37+-15.11 | 0.0503 (p>0.05) |
| Hypotension | 4 | 3 | 0.69603( p>0.05) |
| Hypertension | 0 | 8 | 0.0027 (p<0.05) |
| Bradycardia | 3 | 2.86 | 0.0464 (p<0.05) |
| Tachycardia | 0 | 11 | 0.0003 (p<0.05) |
| Intraoperative analgesia | | | |
| No pain (0) | 35 | 35 | 0 |
| Slight pain (1) | 0 | 0 | 0 |
| Discomfort (2) | 0 | 0 | 0 |
| Unbearable (3) | 0 | 0 | 0 |
| Excruciating (4) | 0 | 0 | 0 |

**Table 3: Postoperative data**

| | Group TEB | Group GA | P value |
|---|---|---|---|
| Nausea and vomiting | 4 | 16 | 0.0015 (p <0.05) |
| Respiratory distress | 0 | 0 | 0 |
| Shivering | 0 | 10 | 0.0006(p <0.05) |
| Dural puncture | 0 | 0 | 0 |
| Hypotension | 6 | 5 | 0.7426(p >0.05) |
| Bradycardia | 2 | 3 | 0.6425(p >0.05) |
| Postoperative VAS score | | | |
| Immediate postoperatively | 2.40+-0.60 | 5.80+-2.21 | 0.00 |
| At 8 hours | 4.60+-1.22 | 4.51+-1.50 | 0.7939( p>0.05) |
| At 16 hours | 3.86+-1.12 | 4.11+-1.23 | 0.3630( p>0.05) |
| At 24 hours | 3.11+-0.83 | 2.94+-0.97 | 0.4298( p>0.05) |

**Table 4: Satisfaction**

| | Group TEB | Group GA | P value |
|---|---|---|---|
| Surgeon's | | | |
| Satisfied | 33 | 33 | 0.9761( p >0.05) |
| Not satisfied | 02 | 02 | |
| Patient's | | | |
| Satisfied | 32 | 27 | 0.1006 ( p>0.05) |
| Not satisfied | 03 | 08 | |


ISSN (O): 2687-5365; ISSN (P): 2753-6556

## DISCUSSION

In our study we have found that thoracic epidural has many advantages over general anesthesia for undergoing breast cancer surgeries. It is equally good alternative over conventional general anesthesia.

The incidence of breast cancer in female is increasing day by day. May be because of actual increase in incidence over and above to this there is increase in awareness and improvement in diagnostic tools. So we are searching better and simpler method for delivering anesthesia to complete surgical procedure. Regional anesthesia is found to be equally effective to complete the surgery comfortably and gives better comfort during post-operative period. Breast cancer patients are harboring many co morbid conditions like diabetes mellitus respiratory allergy, infective condition, cardiovascular and renal disorder etc. Regional epidural anesthesia seems to be better procedure to tackle all these co morbid conditions than conventional general anesthesia. Acceptance of regional anesthesia is increasing day by day due to the development of better operating tools.

## CONCLUSION

On the basis and findings of our study, we came to a conclusion that thoracic block for breast surgery is better alternative than general anesthesia in terms of better Intraoperative hemodynamics stability without any major side effects. Further larger and more studies are required to investigate the comparison between thoracic epidural block versus general anesthesia for breast oncologic surgery in terms of Intraoperative hemodynamics, post-operative analgesia and post-operative complications.

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ISSN (O): 2687-5365; ISSN (P): 2753-6556