



## A PROSPECTIVE RANDOMISED CONTROLLED TRIAL DEPICTING THE SINGLE SHOT PECTORAL PLANE(PECS I AND PECS II) BLOCK VERSUS GENERAL ANAESTHESIA FOR BREAST DISEASES.

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### ABSTRACT

**Aim of the study:** To compare the anaesthetic efficacy of single shot PECS block vs General anaesthesia in women undergoing breast surgery for benign breast diseases.

**Materials & methods:** This is a randomized prospective study of 100 participants comparing single shot pectoral plane block with general anaesthesia for benign breast disease

#### INCLUSION CRITERIA

- Women in the age group of 14-40 years.
- Proven benign breast disease.

#### EXCLUSION CRITERIA

- Women more than 40 years
- Malignant breast diseases

**RESULTS:** Out of 100 participants 74 were included according to exclusion criteria and 26 were excluded under the study and were divided into 2 groups. Group A(n=37) PECS BLOCK and Group B(n=37) GENERAL ANAESTHESIA and at the end of study, post operative complications like PONV, sedation, pain, Stay in hospital were lesser to PECS GROUP compared to GA GROUP

**CONCLUSION:** PEC I/II blocks are relatively comfortable technique done under USG guided is good choice for anesthesia in patients undergoing benign breast surgeries.

**KEYWORDS :** benign breast surgeries, PECS block, nerve block.

### INTRODUCTION

Breast surgeries for benign breast diseases are usually done under short general anaesthesia. It is usually associated with significant post operative pain and some anaesthetic complications in vulnerable patient group. Thoracic paravertebral blocks (TPVBS) and continuous local anaesthetic wound infusion (LA infusion) catheters are effective in reducing post operative pain and opioid consumption.

Pectoral plane blocks are recently described fascial plane blocks that can be used as an alternative to short GA for breast surgeries done for benign condition. PECS block involves deposition of local anaesthetic drug between muscle planes. PECS I block, between Pectoralis Major and Minor at third rib level and PECS II block, the drug is deposited between Pectoralis minor and Serratus anterior muscle.

Though single shot PECS blocks are effective and adopted in clinical practice, it is not yet known if they could provide adequate anaesthetic and analgesic effect as short GA.

### OBJECTIVE

we aimed to compare the anaesthetic efficacy of single shot PECS block vs General anaesthesia in women undergoing breast surgery for benign breast diseases.

### MATERIALS AND METHODS

**PLACE OF STUDY:** DHANALAKSHMI SRINIVASAN MEDICAL COLLEGE HOSPITAL

**TIME OF STUDY:** DECEMBER 2017 to FEBRUARY 2019.

Seventy four ASA I-III female patients aged 15 or older (15-40) undergoing breast surgery for benign breast diseases were included. All participants were provided informed and written consent.

Breast surgeries for benign diseases include wide local excision, lymph node resection.

Patients who are allergic to local anaesthetic drugs, coagulopathy, local infections, co-morbid conditions, attained menopause, chronic pain syndrome were excluded before getting informed and written consent. All patients were admitted day before surgery and anaesthetic assessment done pre operatively.

The patients were allocated in two groups using computer generated randomization. The two groups were isolated from each other.

For patients undergoing surgery under GA, pre medicated with 0.2mg of Glycopyrrolate, preoxygenated for 5 minutes induced with Propofol 100mg, Scoline 100mg, Fentanyl 100microgram, Veccuronium 6mg, Dexa 8mg was given to patients according to risk factors.

Anaesthesia was maintained with oxygen, nitrous oxide and isoflurane. Airway management and lung ventilation strategies by supervising anaesthetist. At the end of the surgery, Ondansetran 4mg IV and Myopyrolate 3mg were given for reversal. Perioperative events such as induction of anaesthesia, initial skin incision and end of surgery annotated on record.

PECS block performed on side of surgery using Ultrasound guided technique. Patient was placed in supine, head up position with arm in abduction. The skin was prepared with Chlorhexidine gluconate 2%, isopropyl alcohol 70%. IV sedation is given with Midazolam 1g IV and Fentanyl 100microgram IV. A high frequency ultrasound probe placed under clavicle in midclavicular line to locate axillary artery and vein under Pectoralis Major and minor muscles. The probe is moved laterally towards axilla to visualize ribs. At the level of 3rd and 4th ribs, Pectoralis major, Pectoralis minor and Serratus anterior muscles are seen.

The needle is inserted medial to lateral in oblique manner until the tip enters the plane.

For PECS I block, 10ml of 0.25% Levobupivacaine is injected between Pectoralis major and minor under Ultrasound guidance visualising the spread of LA in plane between muscular layers.

For PECS II block, 20ml of 0.25% levobupivacaine is injected between Pectoralis minor and Serratus muscles. The procedure is completed within 15minutes and onset of action will be after 3 minutes. PECS patient received 0.9% sodium chloride at same rate throughout the procedure.

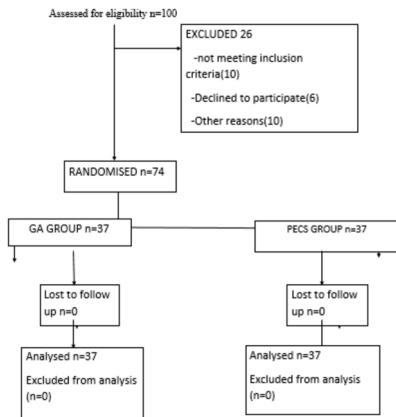
Patients were monitored for 24hours after surgery initially in Post anaesthetic care unit (PACU) and then at ward level once PACU discharge criteria is met .For PONV, Ondansetran 84-8mg was prescribed. As rescue analgesic, Tramadol was used for patients until verbal rating scale for pain becomes less than or equal to 2.

The primary outcome measure was measure of post operative pain by verbal rating scale for pain at rest and while moving. Patients were assessed at one time interval of 2 hours.

The secondary outcome measures were total opioid consumption over 24 hour period and presence of adverse events. An investigator recorded vital signs, pain scores, anti-emetic administration and opioid use after operation. Adverse effects such as sedation, respiratory depression, hypotension, pruritis and PONV also recorded.

**RESULTS**

The consolidated standards of reporting trials flow diagram for this trial.



Whilst n = 100 patients were screened as potentially suitable, n = 74 met inclusion criteria and were randomised. All randomised patients were followed up according to protocol. Baseline patient characteristic data collected including age, gender, weight, height, ASA status and type of surgery were comparable for both groups.

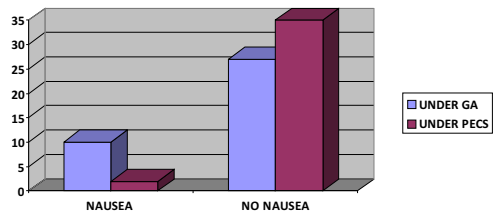
Most patients in each group underwent wide local excision. Remaining patients underwent WLE with Sentinel LN biopsy.

**Table 1 : Distribution of Post-Operative pain among the study subjects in each group**

POST OP PAIN	After 3 hour	After 6 hours	After 12 hours
UNDER GA	√	√	√
UNDER PECS	NIL	√	√

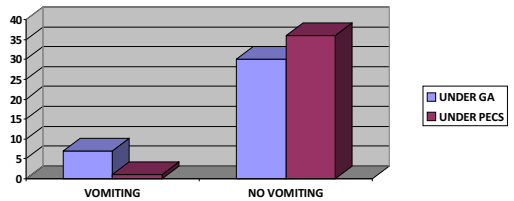
**Table 2 : Distribution of post operative pain complications - NAUSEA following each intervention (n = 74)**

Intervention	NAUSEA	NO NAUSEA
UNDER GA	10	27
UNDER PECS	2	35



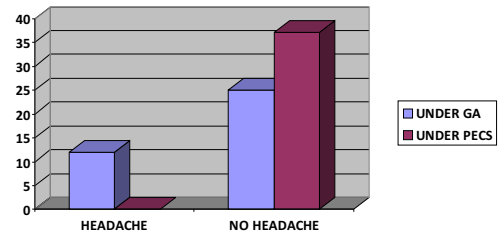
**Table 3 : Distribution of post-operative pain complications - VOMITING following each intervention (n = 74)**

Intervention	VOMITING	NO VOMITING
UNDER GA	7	30
UNDER PECS	1	36



**Table 4: Distribution of post-operative pain complications - HEADACHE following each intervention (n = 74)**

Intervention	HEADACHE	NO HEADACHE
UNDER GA	12	25
UNDER PECS	0	37



**CONCLUSION**

Post anaesthetic complications like PONV, sedation ,post operative pain and number of days in hospital are lesser for PECS Group compared to General anaesthesia Group. Hence, PECS Block is the better option for those who are undergoing breast surgeries for benign breast diseases.

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