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Clinical profile of patients who underwent elective modified radical mastectomy

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Abstract

The development of breast cancer in many women appears to be related to female reproductive hormones, particularly endogenous estrogens. Early age at menarche, nulliparity or late age at first full-term pregnancy, and late age at menopause increase the risk of developing breast cancer. In postmenopausal women, obesity and postmenopausal hormone replacement therapy (HRT), both of which are positively correlated with plasma estrogen levels and plasma estradiol levels, are associated with increased breast cancer risk. Most hormonal risk factors have a relative risk (RR) of ≤2 for breast cancer development. The elective Modified Radical Mastectomy procedure was done in standard fashion. Patients in group A (Study group) received intraoperatively instillation of 0.5% bupivacaine into operative bed at the end of surgery. Patients in group B (Placebo group) received intraoperative instillation of normal saline into the operative bed at the end of surgery position. Approval from the ethical committee of the institution was obtained. All the patients were explained about the basis of the study and informed consent were obtained. Patients who received bupivacaine had longer postoperative analgesia when compared with normal saline group.

Keywords: Bupivacaine, modified radical mastectomy, mammography

Introduction

The adult female breast lies between the second and sixth ribs and between the sternal edge and the midaxillary line. The glands of the breast are located within the superficial fascial compartment of the anterior chest wall. This organ consists of 15 to 20 lobes of tubuloalveolar glandular tissue, fibrous connective stroma that supports the lobules and the adipose tissue that resides within parenchyma that intercalates between the lobules [1].
The deep layers of the superficial fascia that lie upon the posterior surface of the breast fuse with the deep (pectoral) fascia of the chest wall. A distinct space, the *Retromammary bursa,* can be identified anatomically on the posterior aspect of the breast and resides between the deep layer of the superficial fascia and the deep investing fascia of the pectoralis major and

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the contiguous muscles of the thoracic wall [2].

Fibrous thickenings of supportive connective tissue interdigitate between the parenchymal tissue of the breast and extend from the deep layer of the superficial fascia to attach to the dermis of the skin. These dense fibrous suspensory structures, known as *Cooper ligaments*, are located perpendicular to the delicate superficial fascial layers of the dermis. These ligaments allow remarkable mobility of the gland while providing structural support and breast contour.

Multiple factors are associated with an increased risk of developing breast cancer, but the majority of these factors convey a small to moderate increase in risk for any individual woman. At least half of women who develop breast cancer have no identifiable risk factor beyond increasing age and female sex. The importance of age as a breast cancer risk factor is sometimes overlooked [3].

Although an accurate history and clinical examination are important methods of detecting breast disease, there are a number of investigations that can assist in the diagnosis.

Examination precedes palpation and requires careful observation of the patient both with the arms at rest and also elevated to lift the breast. Small lesions may betray their presence by dimpling or minor distortions when the patient moves [4].

Specific mammographic features that suggest a diagnosis of breast cancer include a solid mass with or without stellate features, asymmetric thickening of breast tissues and clustered microcalcifications. The presence of fine, stippled calcium in and around a suspicious lesion is suggestive of breast cancer and occurs in as many as 50% of non-palpable cancers.

These microcalcifications are an especially important sign of cancer in younger women, in whom it may be the only mammographic abnormality.

The clinical impetus for screening mammography came from the Health Insurance Plan study and the Breast Cancer Detection Demonstration Project, which demonstrated a 33% reduction in mortality for women after 72 screening mammography.

Mammography was more accurate than clinical examination for the detection of early breast cancers, providing a true-positive rate of 90%. Only 20% of women with non-palpable cancers had axillary lymph node metastases, compared with 50% of women with palpable cancers.

Soft tissue radiographs are taken by placing the breast in direct contact with ultrasensitive film and exposing it to low voltage, high amperage x-rays.

The dose of radiation is approximately 0.1 cGy and therefore, mammography is a very safe investigation. The sensitivity of this investigation increases with age as the breast becomes less dense.

In total, 5 per cent of breast cancers are missed by population-based mammographic screening programmes; even in retrospect, such carcinomas are not apparent. Thus, a normal mammogram does not exclude the presence of carcinoma. Digital mammography is being introduced, which allows manipulation of the images and computer-aided diagnosis. Tomo-mammography is also being assessed as a more sensitive diagnostic modality [5].

The “modified radical” mastectomy was proposed in 1948, when Patey and Dyson of the Middlesex Hospital, London, provided a major technical and aesthetic advancement for the management of operable breast cancer.

The technique espoused by Patey and Dyson included removal of the breast and axillary lymph nodes with preservation of the pectoralis major muscle. These surgeons confirmed that removal of the pectoralis minor muscle allowed access to and the anatomical dissection of axillary lymph node levels I to III (Patey modification)...

The modified radical mastectomy consists of en bloc resection of the breast including the nipple/areola complex, the axillary lymphatics and the overlying skin near the tumor [6].

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Methodology

60 adult patients between age group 30 to 60 years undergoing elective Modified Radical Mastectomy were divided into two groups of 30 patients each randomly.
All patients underwent similar general anesthetic procedure.
Group (A)-Study Group: Patients received 20 ml of 0.5% bupivacaine instilled intra operatively into operative bed.
Group (B)-Placebo Group: Patients received 20 ml of normal saline intra operatively at the same location.

The elective Modified Radical Mastectomy procedure was done in standard fashion.
Patients in group A (Study group) received intraoperatively instillation of 0.5% bupivacaine into operative bed at the end of surgery.
Patients in group B (Placebo group) received intraoperative instillation of normal saline into the operative bed at the end of surgery position.
Approval from the ethical committee of the institution was obtained.
All the patients were explained about the basis of the study and informed consent were obtained.
Study design: Randomized clinical trial.
Sample size: 60 patients of either sex between age group 30 to 60 years undergoing elective Modified Radical Mastectomy were divided into two groups of 30 patients each randomly who fulfilled the inclusion and exclusion criteria.

Inclusion criteria

Patients of either sex between 30 and 60 years, with carcinoma of breast who is posted for elective Modified Radical Mastectomy and who give consent for the study.

Exclusion criteria

1) Patient below 30 and above 60 years.
2) Patient with underlying respiratory, renal, neurologic, pschistric and cardiac abnormalities.
3) Patient who do not understand the visual analogue score.
4) Patients who undergo any additional procedure.
5) Patients with a history of chronic analgesic drug usage.
6) Patients with major blood loss and unpredictable action of drugs such as continuos excessive blood collection.
7) Patient who do not give consent for the study.

Results

Table 1: Gender distribution

Gender	Group A	%	Group B	%
Male	0	0.00	0	0.00
Female	30	100.00	30	100.00
Total	30	100.00	30	100.00
Chi-square=0.0000 P = 1.0000 (Not significant)				

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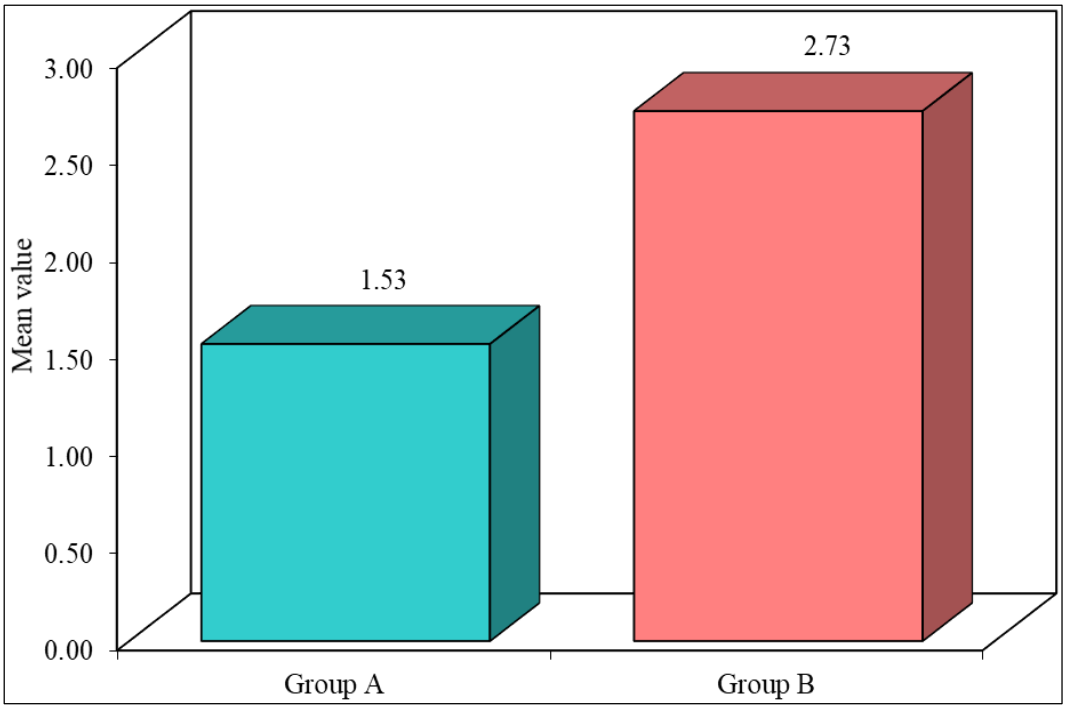
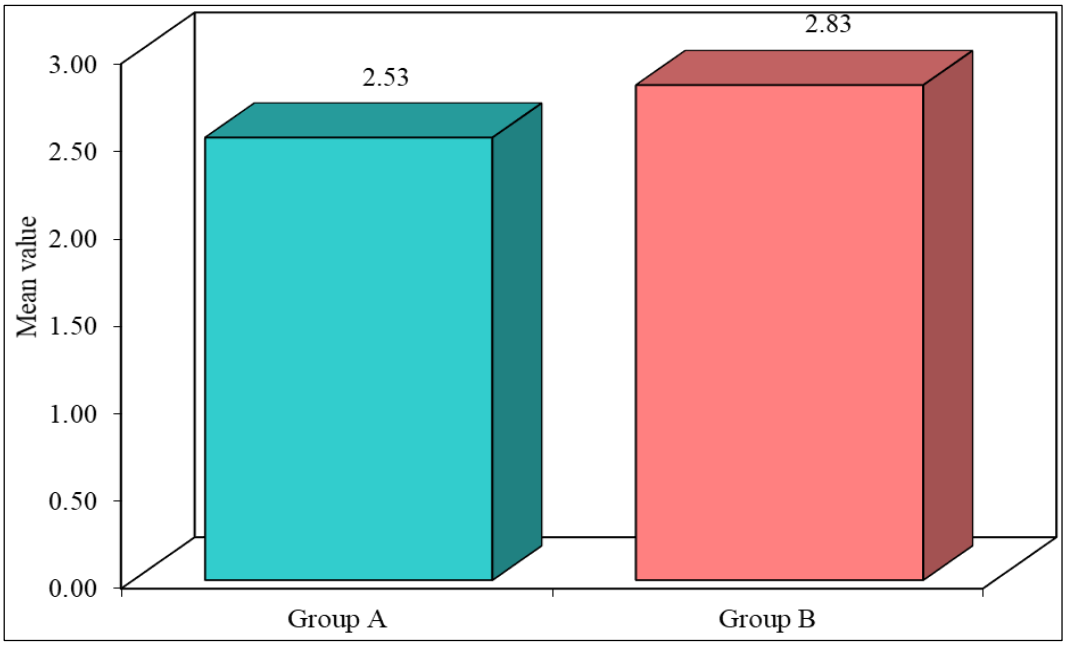


Graph 1: Bar graph depicting VAS at 1 hour



Graph 2: Bar graph depicting VAS score at 24 hours

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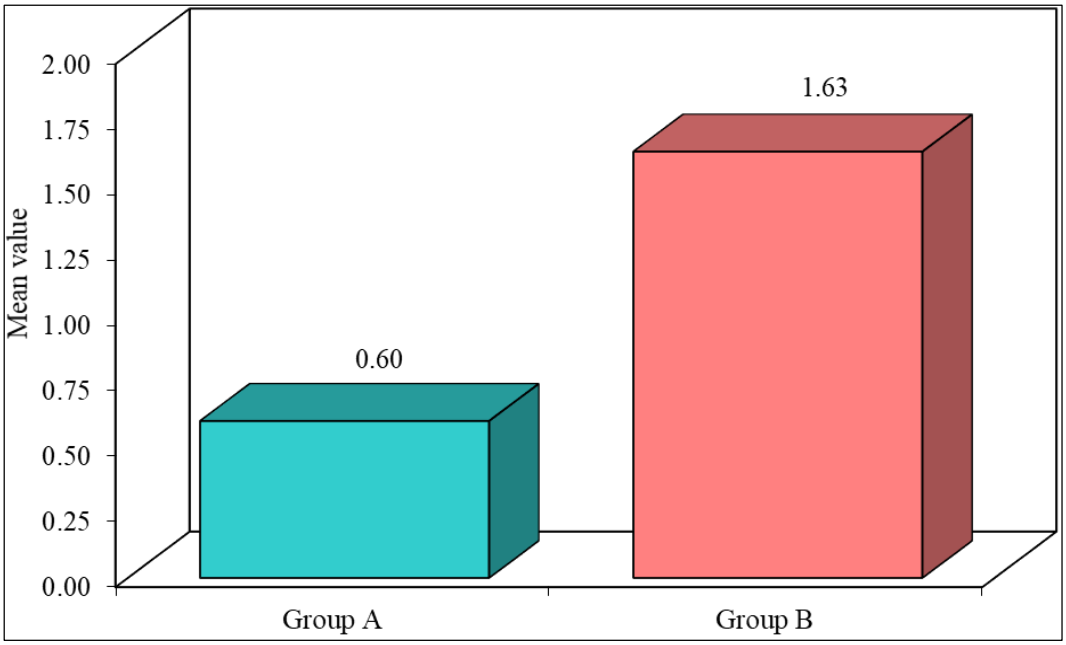
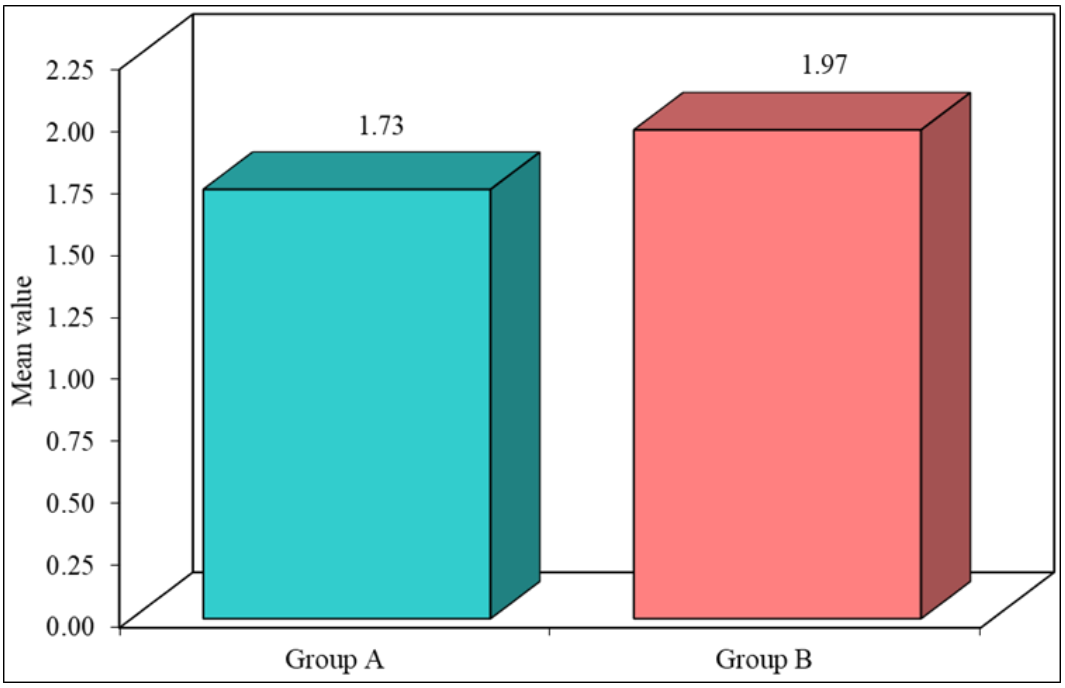


Graph 3: Bar graph depicting VRS score at 1 hour



Graph 4: Bar graph depicting VRS score at 24 hours

Discussion

Multiple factors are associated with an increased risk of developing breast cancer, but the majority of these factors convey a small to moderate increase in risk for any individual woman. At least half of women who develop breast cancer have no identifiable risk factor beyond increasing age and female sex. The importance of age as a breast cancer risk factor is sometimes overlooked.

A family history of breast cancer has long been recognized as a risk factor for the disease, but only 5% to 10% of women who develop breast cancer have a true hereditary predisposition. Women with a family history may overestimate their risk of developing breast cancer or harboring a predisposing genetic mutation.

Overall, the risk of developing breast cancer is increased 1.5-to 3-fold if a woman has a mother or sister with breast cancer.

Mutations in the breast cancer susceptibility genes *BRCA1* and *BRCA2* are associated with a significant increase in the risk of breast and ovarian carcinoma and account for 5% to 10% of all breast cancers.

These mutations are inherited in an autosomal dominant fashion with varying degrees of penetrance. As a result, the estimated lifetime risk of breast cancer development in mutation carriers ranges from 26% to 85% and the risk of ovarian cancer ranges from 16% to 63% and 10% to 27% in carriers of *BRCA1* and *BRCA2*, respectively [4].

The development of breast cancer in many women appears to be related to female reproductive hormones, particularly endogenous estrogens. Early age at menarche, nulliparity or late age at first full-term pregnancy, and late age at menopause increase the risk of developing breast cancer.

In postmenopausal women, obesity and postmenopausal hormone replacement therapy (HRT), both of which are positively correlated with plasma estrogen levels and plasma estradiol levels, are associated with increased breast cancer risk. Most hormonal risk factors have a relative risk (RR) of ≤2 for breast cancer development [7].

Observational studies suggested that high-fat diets were associated with higher rates of breast cancer than low-fat diets. However, a meta-analysis of eight prospective epidemiologic studies failed to identify an association between fat intake and breast cancer risk in adult women in developed countries [8].

Breast cancer risk increases linearly with the amount of alcohol consumed. 28 Decreased intake of nutrients such as vitamin C, folate, and β-carotene may enhance the risk related to alcohol consumption [9].

Obesity is associated with both an increased risk of breast cancer development in postmenopausal women and increased breast cancer mortality.

Women with a body mass index of ≥31.1 have a 2.5-fold greater risk of developing breast cancer than those with a body mass index of ≤22.6.24 Weight and weight gain appear to play an important but complex role in breast cancer risk [10].

Conclusion

There are many options available for treating pain in postoperative period, including systemic analgesia, regional analgesia, local infiltration technique or a combination of all theses. It is important to assess the risks and benefits of each modality and patient's preference should be taken care of.

References

1. Manfe AZ, Marchesini M, Bortolato A, Feltracco P, Lumachi F. Ropivacaine versus levobupivacaine for minor breast surgery in outpatients: inversion of postoperative pain relief efficacy. *In vivo*. 2012 Nov;26(6):1075-7.
2. Standring S, editor. Gray's Anatomy International Edition: The Anatomical Basis of Clinical Practice. Elsevier Health Sciences, 2015 Aug.
3. Sinnatamby CS. Last's Anatomy, International Edition: Regional and Applied. Elsevier Health Sciences, 2011 Apr.
4. Bland KI, Copeland EM, Klimberg VS, Gradishar WJ. The breast: comprehensive management of benign and malignant diseases. Elsevier Inc., 2017 Aug.
5. Lanser P, Gesell S. Pain management: the fifth vital sign. Healthcare benchmarks. 2001 Jun;8(6):68-70.
6. Bruce J, Quinlan J. Chronic postsurgical pain. Reviews in pain. 2011 Sep;5(3):23-9.

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7. ICMR-national centre for disease informatics and research. Ncdirindia.org.209 [cited 14 June 2019].available from http://www.ncdirindia.org/
8. Iglehart JD, Smith BL. Breast: diseases of the breast, chapter 35. In: Sabiston Textbook of Surgery: The biologic basis of modern surgical practice. Townsend CM, Beauchamp RD, Evers BM. Mattox KL (editors) 18th edition. Philadelphia: WB Saunders, 2007, 868.
9. Bland KI, Beenken SW, Copeland, Breast EM. Chapter 16. In: Schwartz's principles of surgery, F Charles Brunicardi (editor). 8th edition. New York: McGraw Hill Medical, 2004, 470.
10. Saisbury R. The breast, chapter 50. In: Bailey & Love's short practice of surgery Williams NS, Bulstrode CJK, O'Connell PR. 25th ed. New York: CRC Press Taylor & Francis group. 2008;842:827-850.