ORIGINAL RESEARCH

Evaluation of post-operative analgesia in modified radical mastectomy patients using surgical wound irrigation with 0.25% bupivacaine

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ABSTRACT

Background: A Modified Radical Mastectomy is a surgical procedure that involves the removal of breast tissue, along with some of the surrounding lymph nodes, in the treatment of breast cancer. The present study was conducted to evaluate post-operative analgesia in modified radical mastectomy patients using surgical wound irrigation with 0.25% bupivacaine. **Materials & Methods:** 50 women undergoing modified radical mastectomywere divided into 2 groups of 25 each. In group I, before closure of the wound, a 20G scalp vein set was used along the length of the incision with multiple punctures in it for continuous irrigation with 0.25% bupivacaine. In group II, the routine post-operative pain management was followed. Post-operatively, visual analogue scale was used to measure the pain sensation at every six hours for 24 hours. **Results:** The mean duration of surgery (min) was 152.4 and 158.4, fentanyl dose infused (µg) was 115.4 and 113.2 and the number of rescue analgesia doses needed in 24 hours was 0.51 and 2.18 in group I and II respectively. The difference was significant ($P< 0.05$). The mean VAS at 0 hours was 0.42 and 11.12, at 6 hours was 0.49 and 2.235, at 12 hours was 0.63 and 4.31, at 18 hours was 0.72 and 3.17 and at 24 hours was 0.40 and 1.74 in group I and II respectively. The difference was significant ($P< 0.05$). **Conclusion:** Irrigation of wound with 0.25% Bupivacaine is found to reduce the pain sensation in modified radical mastectomy cases.

Key words: Breast, Modified Radical Mastectomy, Women

INTRODUCTION

A Modified Radical Mastectomy is a surgical procedure that involves the removal of breast tissue, along with some of the surrounding lymph nodes, in the treatment of breast cancer.[1] It is called "modified" because it is a less extensive procedure compared to the traditional radical mastectomy.[2]In a Modified Radical Mastectomy, the entire breast tissue is removed, including the breast itself and some of the underlying muscles, such as the pectoralis major muscle. However, in contrast to a radical mastectomy, the removal of chest wall muscles is limited, which is why it's considered a "modified" procedure.Lymph nodes in the axillary (underarm) region are typically removed during the surgery.[3] These lymph nodes are examined to determine if the cancer has spread to the surrounding lymphatic system. The number of lymph nodes removed may vary based on the extent of the cancer and the surgeon's judgment.In most cases, the nipple and areola complex can be preserved during a Modified Radical Mastectomy.[4]

Emotional anguish must also be addressed in addition to physical suffering. As a result, there will be more pain felt. Pain following surgery is one of the primary causes of extended hospital stays.[5] A painless recovery period is necessary to ensure the patient's comfort. Several techniques, including peripheral nerve blocks, the administration of opioids, the use of local anesthetics, and the use of NSAIDS (non-steroidal anti-inflammatory medicines), can provide postoperative analgesia.[6]The present study was conducted to evaluate post-operative analgesia in modified radical mastectomy patients using surgical wound irrigation with 0.25% bupivacaine.

MATERIALS & METHODS

The present study consisted of 50 women undergoing modified radical mastectomy. All gave their written consent to participate in the study.

Data such as name, age, etc. was recorded. Patients were divided into 2 groups of 25 each. In group I, before closure of the wound, a 20G scalp vein set was used along the length of the incision with multiple punctures in it for continuous irrigation with 0.25% bupivacaine. In group II, the routine post-operative pain management was followed. Post-operatively,visual analogue scale was used to measure the pain sensation at every six hours for 24 hours. The adverse effects was noted on post-operative days.Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Comparison of parameters

Parameters	Group I	Group II	P value
Duration of surgery (min)	152.4	158.4	0.97
Fentanyl dose infused(µg)	115.4	113.2	0.85
Number of rescueanalgesia dosesneeded in 24 hours	0.51	2.18	0.01

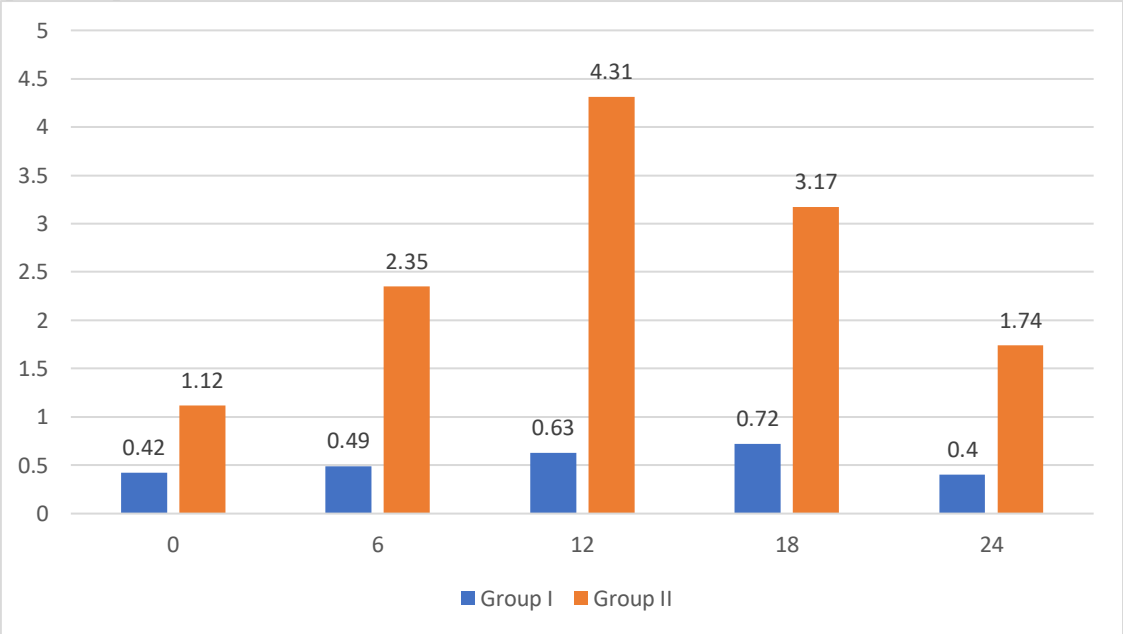
Table I shows that mean duration of surgery (min) was 152.4 and 158.4, fentanyl dose infused (µg) was 115.4 and 113.2 and number of rescue analgesia doses needed in 24 hours was 0.51 and 2.18 in group I and II respectively. The difference was significant (P< 0.05).

Table II Comparison of VAS

VAS (hours)	Group I	Group II	P value
0	0.42	1.12	0.05
6	0.49	2.35	0.01
12	0.63	4.31	0.01
18	0.72	3.17	0.01
24	0.40	1.74	0.04

Table II shows that mean VAS at 0 hours was 0.42 and 11.12, at 6 hours was 0.49 and 2.235, at 12 hours was 0.63 and 4.31, at 18 hours was 0.72 and 3.17 and at 24 hours was 0.40 and 1.74 in group I and II respectively. The difference was significant (P< 0.05).

Graph I Comparison of VAS



DISCUSSION

The main goal of a Modified Radical Mastectomy is to remove the cancerous tissue while preserving the breast's appearance as much as possible.[7,8] This procedure is often used when breast-conserving surgery (lumpectomy) is not feasible or when the cancer is more extensive.More breast tissue must be removed in order to spare the pectoralis major in MRM. Superior analgesia is achieved using perineural catheters and epidural analgesia.[9]However, they are labor-intensive, costly, time-consuming, and require additional medical attention. Local anesthetic irrigation is a reasonably easy and economical method that can be carried out with portable pumps.[10,11]The

present study was conducted to evaluate post-operative analgesia in modified radical mastectomy patients using surgical wound irrigation with 0.25% bupivacaine.

We found that the mean duration of surgery (min) was 152.4 and 158.4, fentanyl dose infused (µg) was 115.4 and 113.2 and number of rescue analgesia doses needed in 24 hours was 0.51 and 2.18 in group I and II respectively. Shafi et al[12]evaluated the role of local irrigation of 0.25% bupivacaine in alleviating the post-operative pain. Thirty (30) patients were randomly allotted to control group, where the routine post-operative pain management was followed. Another 30 were randomly allotted to study group where, before closure of the wound, a 20G scalp vein set was used along the length of the incision with multiple punctures in it for continuous irrigation with 0.25% Bupivacaine. Both the groups were similar with respect to basic parameters measured. There was a significant reduction in need for rescue analgesia in the study group. There was a significant difference in mean VAS score between both groups from 6th hour of surgery. Post-operative nausea and vomiting was significantly less in the study group.

We found that mean VAS at 0 hours was 0.42 and 11.12, at 6 hours was 0.49 and 2.235, at 12 hours was 0.63 and 4.31, at 18 hours was 0.72 and 3.17 and at 24 hours was 0.40 and 1.74 in group I and II respectively. Fayman et al[13]compared efficacy of bupivacaine and ropivacaine in a bilaterally symmetrical breast surgery They found that overall analgesia achieved with bupivacaine and ropivacaine infiltrations was not statistically different. The use of a higher dose of ropivacaine is likely to have removed the clinical advantage noted for the bupivacaine group. There was, however, a statistical and clinical difference in the efficacy of local anaesthetic infiltration of both agents in breast augmentation patients as compared to breast reduction patients, local anaesthetic being less effective in patients who had submuscular breast augmentation than in patients who had breast reduction.

The limitation of the study is small sample size.

CONCLUSION

Authors found that irrigation of wound with 0.25% Bupivacaine is found to reduce the pain sensation in modified radical mastectomy cases.

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