Original Research Paper

Volume - 7 | Issue - 8 | August - 2017 | ISSN - 2249-555X | IF : 4.894 | IC Value : 79.96

General Surgery

STUDY OF MODIFIED RADICAL MASTECTOMY (MRM) – SCANLON PROCEDURE WITH LEVEL III AXILLARY LYMPH NODE CLEARANCE IN OPERABLE CARCINOMA BREAST

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ABSTRACT

Introduction: Breast cancer is now becoming the most common cancer throughout the world. Earlier it was more common in affluent society, now it is the low socio-economic status women who are showing the increasing incidence. The purpose of this study is to identify the indications of Scanlon's technique by evaluating the benefit of complete axillary dissection and the cosmetic results of chest walls in patients who had undergone a modified radical mastectomy (MRM) for breast cancer.

Materials & Methods: The study was conducted in the Department of General Surgery at IMS AND SUM HOSPITAL. After a thorough clinical examination and investigations, the staging was done according to TNM Staging.

Results: All patients were given Radiotherapy and Chemotherapy along with Tamoxifen in positive hormone receptor subjects. Only 22 (55%) cases were subjected to MRM out of 40 patients. Rest 18 (45%) were subjected to SM due to advanced nature of the disease.

Conclusion: The study concluded that in the MRM for patients with resectable breast cancer, Scanlon's technique are superior to Auchincloss or Patey in preventing axillary recurrence and atrophies of Pectoralis muscles by successful complete.

KEYWORDS : Breast cancer; metastasis, MRM; lymph node

INTRODUCTION

Breast cancer is now becoming the most common cancer throughout the world. Earlier it was more common in affluent society, now it is the low socio-economic status women who are showing the increasing incidence. Probably only about 10% of human breast cancer can be linked directly to gene like mutations. The first to be identified was the tumour suppressor gene p53. In this disorder called the Li-Fraumeni syndrome, there is an increased risk of carcinoma breast, osteogenic sarcoma and other malignancies. Another tumour suppressor gene has been identified at chromosome 17q21 is BRCA1. Women who inherit a mutated allele of this gene from either parent have an approximately 85 to 90% lifetime chance of developing breast cancer as well as 33% chance of developing ovarian cancer. A third, termed BRCA2, at chromosome 13, is associated with an increased incidence of breast cancer in men and women [1, 2, 5, 6, 7]. Breast cancer is a hormone dependent cancer. Amount of oestrogen exposure is directly proportional to the chance of developing breast cancer in a woman throughout her lifetime [5, 6].

Much has been changed in the treatment of breast cancer since William Halsted (1852-1922) in the early 1900's first described the procedure for radical mastectomy. At that time, surgery included the removal of whole breast gland together with draining lymph nodes and pectoral muscles. The procedure was highly mutilating and patients often suffered from severe post-operative morbidity [3]. Moreover, breast cancer very often recurred, causing a majority of patients to eventually die from their disease. As the time progressed, better surgical procedures, adjuvant chemotherapy, radiotherapy and hormonal therapy leads to prolonged survival rates [4].

Patey, in 1967, first reported the concept of modified radical mastectomy developed over a period of many years. He removed the pectoralis minor muscle leaving the pectoralis major muscle intact. Over the last several years, numerous articles have discussed the issue of modified radical mastectomy as an operative procedure. Madden, Yonenroto, Delarie, Dunphy, Lesieur, Verhaeghe, Bussman, Cady, Byrd, Pickren, Fleming, Chretien, Auchincloss, Scanlon all reviewed the subject thoroughly [8].

Modified radical mastectomy is the most widely used surgical procedure to treat operable carcinoma breast. This procedure removes the breast, surrounding tissues, and nearby lymph nodes that are affected by cancer. This procedure leaves the chest muscle pectoralis major intact. Leaving this muscle provides a soft tissue covering over the chest wall and a normal appearing junction of the shoulder with the anterior chest wall. This avoids a disfiguring hollow defect below the clavicle. Additionally, the purpose of modified radical mastectomy is to allow for the option of breast reconstruction, if desired, due to intact muscles around the shoulder of the affected side [3].

Various modifications of this operation have been described, including resection of the pectoralis minor, preservation of the pectoralis minor, and division of the origin of the pectoral minor. The purpose of this study is to identify the indications of Scanlon's technique by evaluating the benefit of complete axillary dissection and the cosmetic results of chest walls in patients who had undergone a modified radical mastectomy (MRM) for breast cancer. Scanlon modified Patey's procedure by dividing but not removing pectoralis minor muscle and doing level III Axillary clearance.

MATERIALS & METHODS

The Study was carried out in the Department of General Surgery at IMS AND SUM HOSPITAL, Bhubaneswar, Odisha from 2016 to 2017. The study was conducted to all patients having carcinoma breast at various stages, admitted to in all surgical wards at IMS AND SUM HOSPITAL, Bhubaneswar. A thorough history, clinical examination and investigation was undertaken in every patient admitted to the hospital with features suggestive of carcinoma breast and was recorded. After a thorough clinical examination and investigations, the staging was done according to TNM Staging. Within the period of study the cases were followed up with periodic examinations. Symptoms of metastatic involvement of recurrence were enquired; examination of operation field for nodules, lymph node for recurrence, and other breast for involvement, hand and arm for post operative oedema was done. Abdomen, chest, spine, skull, ribs, long bones were examined for evidence of metastasis.

RESULTS

Total 40 patients of different stages of carcinoma breast were studied during this period. These patients were subjected to either Modified

Radical Mastectomy or Simple Mastectomy depending upon their stage of presentation. All patients were given Radiotherapy and Chemotherapy along with Tamoxifen in positive hormone receptor subjects. Out of 40 patients, 27 (67.5%) are in between 31 to 50 yr. Next is 8 (20) between 51 to 60 yrs. It was found that stage II cancer was 22.5% and stage III cancer was 77.5% during this study period (Table-1).

TABLE 1-stage of presentation of patients

STAGE	NO. OF PATIENTS	PERCENTAGE (%)
I	0	0
IIA	5	12.5
IIB	4	10
IIIA	13	32.5
IIIB	**18**	**45**
IIIC	0	0
IV	0	0

In our study, 28 out of 40 patients (70%) presented with N1 Axillary lymph node metastasis. 3 patients (7.5%) showing N2 Axillary lymph node metastasis. Only 9 patients (22.5) did not show clinical signs of Axillary lymph node metastasis (Table-2).

TABLE 2-nodal status of patients

NODAL STATUS	NUMBERS	PERCENTAGE (%)
N0	9	22.5
N1	28	70
N2	3	7.5
N3	0	0

Thus, 22 (55%) cases were subjected to MRM out of 40 patients. Rest 18 (45%) were subjected to SM due to advanced nature of the disease (Table-3).

TABLE 3-surgical procedure

Procedure	No. of cases	Percentage (%)
MRM, S	22	55
SM+AC	17	42.5
SM	1	2.5

MRM, S: Modified Radical Mastectomy, Scanlon procedure; SM+AC: Simple Mastectomy + Axillary Clearance; SM: Simple Mastectomy.

1(4.1%) out of 22 patients undergoing MRM, Scanlon procedure had local recurrence at operating site. Whereas 4(23.5%) out of 17 patients undergoing Simple Mastectomy and Axillary Clearance had local site recurrence. 1 patient undergoing Simple Mastectomy only fortunately had no recurrence during this study period (Table-4). Most of the patients are from rural areas, 37(92.5%) out of 40. Most of the patients, 24(60%) are from low socio-economic status. Only 16(40%) are from average socio-economic status. 11 out of 40 were found to be post menopausal. In this study all patients had attained menarche in between 13 to 15 years of age. In this study 82.5% were multiparous, 15% had <2 children and only 1 was nulliparous. None of the patients in this study had family history of breast cancer in either the 1st or 2nd order relatives.

TABLE 4- recurrence (loco-regional or distance metastasis)

PROCEDURE	NUMBERS	PERCENTAGE (%)
MRM	**1 (22)**	**4.1**
SM+AC	4 (17)	23.5
SM	0(1)	0

In this study 100% of the patients presented with lump, either lump with Axillary lymph node (77.5%), lump with pain (7.5%), 12.5% presented lump with skin ulcer and 2.5% presented lump with nipple areola pathology (Table 5). 52.5% presented with left side, 45% right side and 1 patient (2.5%) had bilateral breast cancer. Most of the patients presented with breast cancer in the upper outer quadrant (72.5%), followed by upper inner (8%), lower outer (5%).only 1 patient (2.5%) had cancer in nipple areola complex. Most of the patients present late, 45% in >6 months duration and 90% in >4 months duration.

TABLE 5-presenting symptoms

SYMPTOMS	NUMBERS	PERCENTAGE (%)
LUMP+AX.LN	**31**	**77.5**
LUMP+PAIN	3	7.5
LUMP+SK.ULCER	5	12.5
LUMP+NIPPLE AREOLA PATHOLOGY	1	2.5

60% Patients did not have any post-op complications. 35% developed seroma. Only 1 case developed wound dehiscence and 1 case had arm stiffness (Table-6). In histopathological study of specimen, 85% Shows IDC and 15% shows Adenocarcinoma.

TABLE 6-post operative complications

COMPLICATIONS	NUMBERS	PERCENTAGE (%)
NIL	24	60
SEROMA	14	35
ARM STIFFNESS	1	2.5
WOUND DEHISENCE	1	2.5
WOUND INFECTION	0	0
HEMORRHAGE	0	0

Discussion

This present study consists of carcinoma breast patients, about their stage of presentation, nodal status, modes of treatment with special reference to Modified Radical Mastectomy, Scanlon procedure admitted to Surgery department, IMS & SUM Hospital, Bhubaneswar Bloom et al., study had 55% of cases in Stage I disease, which reflects early detection in western population, 36% of cases belonged to Stage II and 6.7% of cases stage III and Just 2.4% were metastatic disease.In my study, 22.5% patients presented with stage II disease and 77.5% presented with stage III carcinoma breast. None presented with stage I. This reflects the late presentation of cases in Indian population due to lack of awareness, poverty and illiteracy, particularly in this part of the State [9].

Velikova et al., in his study had 22% of patients had node negative and 78% of patients had node positive [10]. This shows early detection of cases in western population. In Sen and Das Gupta study 56% of cases were node positive and 44% of cases were node negative [11]. In this study, most of the patients presented with N1 (70%) Axillary lymph node metastasis. 7.5% patients presented with N2 nodal status. Only 22.5% presented with no clinical evidence of lymph node metastasis. Modified Radical Mastectomy, Scanlon procedure was done in 55% patients. Rest 45% cases Simple Mastectomy alone or along with Axillary Clearance was done, due to advanced nature of the disease.

1(4.1%) patient presented with loco-regional recurrence, who had previously undergone Modified Radical Mastectomy, Scanlon procedure. Whereas 4 (23.5%) patients presented with recurrence who had undergone simple mastectomy alone or along with Axillary Clearance.

87.5% patients presented were between 30 to 60 yrs. Only 10% were below 30 yrs and 2.5% are above 60 yrs. Maximum in the 41 to 50 yr age group. Similar findings were seen in Sen and Das Gupta series, who had 60.7% in the 30 to 60 yr age group. No case was reported below 20 yrs. 92.5% patients were from rural areas, only 7.5% were from urban areas. 60% patients were from poor socio-economic status, 40% from average socio-economic status [11]. This may also reflect the less affordable class of society using the government hospital facility, whereas the richer classes go for a private set up.

Raina V et al., study in 2005 had 49.7% of patients in pre menopausal group and rest was postmenopausal. In this study, 72.5% patients were pre-menopausal, where as 27.5% were post-menopausal [12]. The slightly higher incidence in pre menopausal group may be attributed for oestrogen exposure from functioning ovaries. All patients included in this study had attained menarche at 13-15 yrs of age. Early age at menarche has been consistently associated with an increased risk of breast cancer. Average age of menarche fell from around 16-17 years to 12-13 years today. Relative risk of premenopausal breast cancer is reduced by an estimated 7% for each year that menarche is delayed after 12 years. China has later average age at menarche (16-17 years) and hence the risk rates are low. It is reported that women with menarche age of 10 or 11 years showed a 2.2 times higher risk for

breast cancer compared to women who had their first menstrual period at 12 years and above according to Peeters PH et al. [13]. So in my study age at menarche has no relation to the breast cancer.

A family history of breast in first or second-degree relatives is associated with an increased risk of the disease. The risk is greatest in patients with first-degree relatives, especially if under the age of 50 when the disease develops. The relative risk is 1.7 to 2.5 in women with first-degree relatives compared to 1.5 with second-degree relatives. None of the patients in my study had family history of breast cancer in either 1st or 2nd order relatives.

Most breast cancers present as a hard lump. In this study most of the patients presented with either lump alone (87.5%) or lump plus Axillary lymph node (77.5%) and 12.5% presented with skin ulcer along with lump. This could be comparable to Ackerman and Regato series who noted lump in 78% of cases. 60% Patients did not have any post-op complications [14]. 35% developed seroma. Only 1 case developed wound dehiscence and 1 case had arm stiffness.

Conclusion

Carcinoma breast is common on low socioeconomic status (since we get most patients from low socio economic group) in contrast to western population. Most cases belonged to Stage II and Stage III, which reflected the negligence and innocence of patients. FNAC is an effective method of establishing a diagnosis of breast cancer as all cases had malignancy in histopathological examination post operatively. Early and locally advanced stage breast cancers are best treated with Modified Radical Mastectomy, Scanlon procedure as in this procedure level III Axillary clearance is done. We conclude that in the MRM for patients with resectable breast cancer, Scanlon's technique are superior to Auchincloss or Patey in preventing Axillary recurrence and atrophies of Pectoralis muscles by successful complete. Axillary dissection with preservation of Medial and Lateral pectoral nerve, in cases of more advanced stage with involved Axillary Lymph Nodes. Survival rates cannot be given based on our follow up as the duration of follow up is inadequate.

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