

Frequency of Occult Nipple Involvement in Early Stage Carcinoma Breast

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ABSTRACT

Aim: To determine the frequency of occult nipple involvement in early stage carcinoma breast.

Study design: Descriptive cross sectional.

Place and duration of study: General Surgery department and Pathology department Multan medical and dental college, Akhtar Saeed Medical and Dental College Lahore, CMH medical college Lahore and Nishtar Medical College & Hospital, Multan.

Methods: 147 patients admitted fulfilling the inclusion criteria through outdoor. After thorough counseling of the patient and her relatives, informed consent taken for surgical management. Patients undergone modified radical mastectomy by a consultant surgeon of assistant professor level or above. Specimens sent to pathology department where serial section analysis of nipple specimens carried out and presence or absence of occult nipple involvement in early stage carcinoma breast noted.

Results: In this study there were 147 patients which were undergone modified radical mastectomy. Histopathological report shows nipple involvement was present in 22(14.96%) patients

Conclusion: This randomized controlled trial concludes that occult nipple involvement was present in later age group with tumors of large size.

Keywords: Occult nipple involvement, early stage carcinoma breast

INTRODUCTION

Women of all age group have high incidence of carcinoma breast¹. All over the world incidence is 22% of which developing countries constitute the 42%¹. The risk of having breast cancer are high in North America, Europe and Australia. The treatment is being affected by type of tumor, stage and hormone receptors status^{2,3}. According to tumor registry in different institutions of Pakistan carcinoma breast is the commonest cancer in female^{4,5}. Shaukat Khanum Memorial Cancer Hospital treated upto 42% cases of breast cancer case among all malignancies for past ten years⁶.

Breast conservation is an established treatment option in standard of care. In the UK, 51 per cent of symptomatic breast cancer patients and 73 per cent of screen-detected breast cancers patients undergo breast-conserving surgery⁷. However, many women require mastectomy for extensive or multicentric disease being not suitable for breast conservation. There have been drastic developments in study of genetics leading to an increased timely awareness of other risk factors. This allows the identification of women with high risk of breast cancer ultimately resulting in a group of females opting mastectomy for risk reduction.

The nipple is cosmetically and functionally an essential part of the breast therefore, its

reconstruction is often viewed by women of supreme importance. They regard it as making their breast reconstruction complete⁸. Nahabedian and Tsangaris⁹ reported a case series in which 80 per cent of women having reconstruction breast surgery accepted the offer of nipple reconstruction. There several issues still to be addressed with reconstructed nipples, the foremost is the loss of projection over time, the need for repeated tattoos to provide pigmentation of both nipple and areola which fades eventually.

The attempts to graft the nipple-areola complex for some time on the thigh and then grafting it on the reconstructed breast was tried in few patients. The published case reports that these women latter developed recurrent disease as a consequence of this practice¹⁰.

Breast conservation is the standard surgical procedure for several patients of breast malignancy.¹¹ Sometimes mastectomy is inevitable due to size, location, or type of tumor, patient's choice, or opted as a prophylactic procedure by patients of high risk group. However, latest treatment options now also includes nipple-sparing mastectomy. This procedure is a modification of a widely practiced skin-sparing mastectomy technique (the skin is preserved and nipple areola complex is sacrificed). In this modified approach the nipple-areolar complex is left intact resulting in a superior cosmetic result. This technique is based on the low rate of nipple involvement by breast cancer in some of the studies, and the lower

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frequency of local recurrence after nipple-sparing surgery^{12,13,14}.

In a similar study performed in China, nipple areola complex involvement was found to be 13.4%¹⁵. Another study performed in china indicated nipple involvement at 14.2% and occult nipple involvement 10.7%¹⁶.

As no such study has been conducted in our local setup. The results of this study will help in establishing Nipple areola sparing mastectomy a valuable option for early stage breast cancers in local population. This will help surgeons in better reconstruction of breast after surgery and forego problems with artificial nipple and areola reconstruction

METHODOLOGY

One hundred and forty seven patients admitted fulfilling the inclusion criteria through outdoor departments of study institutions. After thorough counseling of the patient and her relatives, informed consent taken for surgical management. Patients undergone modified radical mastectomy by a consultant surgeon of assistant professor level or above. Specimens sent to pathology department where serial section analysis of nipple specimens carried out and presence or absence of occult nipple involvement in early stage carcinoma breast noted. Data of each patient entered in predesigned proforma (attached). Data entered and analyzed using SPSS-10. Descriptive statistics applied to calculate mean and standard deviation for the age. Frequencies and percentages calculated for the outcome variable that is nipple involvement. Confounding variables like age, size of tumor controlled by making stratified tables.

RESULTS

In this study there were 147 patients which were undergone modified radical mastectomy. The average age of patients was 50.80 ± 7.055 years and the average size of tumor was 2.69±1.502cms. The minimum and maximum ages and tumor size were 30-60 years and 1-5cms respectively (Table 1). According to table 2; there were 10 patients in between 30-40years, 47 patients in between 41-50years and 90 patients between 51-60years (Table 2). According to table 3; there were 86 patients in between 1-2cms while 61 patients in between 3-5cms of tumor size (Table 3). During follow up the Histopathological report shown nipple involvement was present in 22(14.96%) patients as shown in Table 4. When Stratification was done on age it was found that Nipple Involvement was found in

14(9.52%) patients of age Group of 51-60years, 8(5.44%) patients in age Group of 40-50years while 0 patients in age group of 30-40 years shown in table 5. While Stratification for Tumor Size regarding Nipple Involvement was found in 4(2.72%) patients of Tumor size of 1-2cms and 18(12.22%) patients in Tumor size of 3-5cms (Table 6).

Table 1: Descriptive Statistics of Age (years) and Size Of tumor in study group.

Descriptive Statistics	Study Group	
	Age Group	Size of tumor
Mean	50.80	2.69
Std. Deviation	7.055	1.502
Minimum	30	1
Maximum	60	5

Table 2: Distribution Of Patients According to Age Groups (n=147)

Age Groups(years)	Frequency	%age
30-40	10	6.8
41-50	47	31.97
51-60	90	61.22

Table 3: Distribution Of Patients According to Size of Tumor Groups (n=147)

Size of Tumor in cms	Frequency	%age
1-2	86	58.50
3-5	61	41.49

Table 4: Occult Nipple involvement (n=147)

Occult Nipple Involvement	Frequency	%age
Yes	22	14.96
No	125	85.03
Total	147	100%

Table 5: Stratification Of Age Groups According to Nipple Involvement (n=147)

Age Groups(years)	Frequency	%age
30-40	0	0
41-50	8	5.44
51-60	14	9.52

Table 6: Distribution Of Patients According to Size of Tumor Groups (n=147)

Size of Tumor in cms	Frequency	%age
1-2	4	2.72
3-5	18	12.22

DISCUSSION

Pakistan belong to third world country the incidence is of breast carcinoma is higher in all age groups .Poverty and poor literacy perhaps the main factors of delayed presentation and at advance stage.¹⁷ Although the risk factors leading to carcinoma breast in Pakistan are similar to other Asian countries but prevalence is still high in Pakistan^{20,21}.

Breast cancer surgery evolved from radical procedure to breast conserving procedures. Breast cancer treatment has continued to evolve in order to include more conservative and cosmetic approaches. New developments in plastic surgery approaches have made it possible to offer immediate breast reconstruction to the majority of patients undergoing mastectomy. These developments and patient concerns about cosmetic appearance have made surgical oncologists and plastic surgeons to ponder over and explore further approaches which can offer both oncologic safety and aesthetic results.

The need for the removal of the nipple-areola complex (NAC) as part of mastectomy is yet an area to study and explore. Nipple-sparing mastectomy (NSM), that combines skin-sparing mastectomy (SSM) with preservation of the NAC, is a controversial approach lacking general consensus among clinicians. Physicians who are involved in the management of breast cancer should be taken on board if there is a possible indications for the use of this procedure.

In our study we evaluate the involvement of nipple in Carcinoma Breast in our setup and found the average age of patients in was 50.80 ± 7.055 years. Our study shown that that average age of presentation is around menopause. While in other studies it is in postmenopausal age group.¹⁸ In west the age of presentation is around 61 years while in Pakistan younger females are suffering from carcinoma breast²² other studies showing the younger age of presentation as well.²³⁻²⁵

Size of tumor at presentation in one of the prognostic factor in Carcinoma breast²⁶. Larger the size of tumor greater will be the stage. In our study the average size of tumor was 2.69 ± 1.502 cms. In a study by Malik 52% cases presented with tumor size of < 5 cm. It is seen that with better diagnostic facilities the carcinoma will present with smaller size.¹⁹ Data from local by Siddiqui et al shows that only 7% case presented with tumor size of less than 2cm.²⁷ The difference in the our study and above studies was due to the fact that we select the patients whose tumor size was less than 5cms.

Studies analyzing the rate of NAC (nipple areola complex) involvement by breast carcinomas were done in a period of premammogram screening, therefore the true incidence of NAC involvement today is not depicted. In our study we found 22(14.96%) patients showed nipple involvement out of 147 cases which is compatible with previous studies of 12–23% NAC involvement^{28,32,33}. Laronga et al. reported that 5.6% of their 326 cases had involvement of the NAC, but they removed cases that had clinical NAC involvement.³⁴ Likewise, many studies conducted before mammographic screening

and the use of BCT (breast conserving therapy) would have included smaller and peripheral tumors in their mastectomy series, which would likely lower the rate of NAC involvement^{30,34}.

Sampling technique is yet another factor which affects the rate of reported nipple involvement. The traditional one sagittal section of the nipple is most likely to understate the occult NAC involvement in comparison to the microscopic examination of multiple coronal or vertical sections of the nipple used in our study and in several others^{29,31,35}.

The three pathologic factors consistently associated with NAC involvement are Tumor size, tumor location, and lymph node status.^{34,36,37} This confirmed in our study that size of tumor directly affects the involvement of nipple areola complex as shown by 22(14.96%) patients. We did not have the information on the distance between tumor and nipple in our study, distance seems to be an important factor in involvement of NAC as shown in different.^{30,34,38} Lagios et al. emphasized on this association with invasive carcinomas only.³⁸ Routine gross measurement of the distance from tumor mass to nipple is not a reliable criteria, especially in cases that involve DCIS, which is often present microscopically only.

CONCLUSION

This randomized controlled trial concludes that occult nipple involvement was present in later age group with tumors of large size. So our recommendations are that Nipple sparing mastectomy can be done in patients who present with breast cancer at early age with small size tumor.

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