THE INCIDENCE OF AXILLARY LYMPH NODE INVOLVEMENT AFTER POSITIVE SENTINEL LYMPH NODE BIOPSY IN BREAST CANCER SURGERY

Tarek Abdel-Halim El-Faiomy, Ahmed Abdel-latif Abdel Kader, Inass Ibrahem Ahamed Zaki, Ibtisam Ali Saed Alsuwaie

Department of Surgery, Faculty of medicine, Alexandria University

Introduction

Management of the axilla in breast cancer has undergone a paradigm shift in recent decades. Studies in recent years have found no significant difference in disease recurrence and overall survival in clinically node-negative breast cancer patients treated with SLNB alone Vs those treated with SLNB plus completion ALND.

Aim of the work

This study aimed to assess the incidence of metastatic disease beyond the SLN in patients with clinically node-negative breast cancer.

Patients and Method

This prospective single center study was conducted at the Surgical Oncology unit of the Alexandria Main University Hospital.Thirty-one female breast cancer patients with clinically node-negative axilla and had positive SLNB were included. Excluded from the study were patients post neoadjuvant chemotherapy,patients with previous axillary surgery and patients with negative SLNB. All patients had completion ALND after positive SLNB was detected by frozen section. Histopathologic assessment was done after completion ALND to detect metastasis beyond the SLNs. Univariate logistic regression analysis was done to identify clinicopathological features associated with non-SLNB metastasis.

Results

Atotal of 31 female patients were enrolled. The mean age of the study population was 48 years. Five patients (16.1%) had a family history of breast cancer. Theupper outer quadrant of the breast was the most frequent location of tumors (22/31, 70.9%). Most of the tumors (19/31) were T1 tumors. All the patients in our study had invasive ductal carcinoma. Macro-metastasis was identified in the SLN in 23 patients (74.2%) while 8 (25.8%) had micro-metastasis. No further disease was found on completion ALND in patients with micro-metastasis (Table 1). And overall, no metastasis was detected beyond the level I axillary nodes. The overall incidence of non-SLN metastasis was 58.1% (18/31) and incidence in macro-metastatic SLN was 78.3%. Patient age of ≥50 years was associated with higher likelihood of detecting non-SLN metastasis following completion ALND in our logistic regression analysis (p value=0.041, O.R=5.2, 95% C.I = 1.068 – 25.309) (Table 2)>

Presence of macro-metastasis (p value <0.001) and lympho-vascular invasion (p value = 0.001) showed significant association with metastasis to non-SLN compared to presence with micro-metastasis and no lympho-vascular metastasis respectively, on completion ALND (Table 1)

Table (1):Relation of non-SLN metastasis to clinicopathologic features in the study population

	Without non-sentinel metastasis (n=13)		With non-sentinel metastasis (n=18)		c^2	p
	No.	%	No.	%		
Age (years)						
<50	8	61.5	4	22.2	4.434*	0.035*
≥50	5	38.5	14	77.8		
Use of OCPs						
No	9	69.2	13	72.2	0.197	FEp= 0.698
Yes	4	30.8	5	27.8		
Family history						
Negative	10	76.9	15	83.3	0.679	FEp= 0.628
Positive	3	23.1	3	16.7		
Tumor size						
T1	9	69.2	10	55.6	0.344	FEp= 0.708
T2	4	30.8	8	44.4		
Grade						
I	1	7.7	0	0.0	1.353	FEp=0.433
II	7	53.8	15	82.4	2.851	FEp=0.123
III	5	38.5	3	16.7	1.632	FEp=0.242
Perinural invasion						
No	11	84.6	11	64.7	1.493	FEp= 0.407
Yes	2	15.4	7	38.9		
Lymph vascular invasion						
No	7	53.8	0	0.0	11.940*	FEp= 0.001*
Yes	6	46.2	18	100.0		
Molecular subtype						
Luminal A	8	61.5	6	33.3	2.039	0.153
Luminal B	4	30.8	8	44.4	0.344	FEp=0.708
HER2 enriched	1	7.7	4	22.2	1.330	FEp=0.355
Size of metastasis						
Micro metastasis	8	61.5	0	0.0	14.266*	FEp <0.001*
Macro metastasis	5	38.5	18	100.0		
No of positive SLN						
≤2	12	92.3	17	94.4	0.039	FEp= 1.000
>2	1	7.7	1	5.6		

Table (2) :Univariate logistic regression analysis to detect the most independent factors affecting for with non-sentinel metastasis.

	Univariate	
	p	OR (LL – UL 95%C.I)
Age (≥50 years)	0.041*	5.200 (1.068 – 25.309)
Use of OCPs	0.658	0.692 (0.136 – 3.518)
Family history	0.417	0.444 (0.063 – 3.155)
Tumor size (T2)	0.559	1.575 (0.343 – 7.224)
Grade		
I	1.000	–
II	0.101	4.000 (0.763 – 20.963)
III	0.210	0.343 (0.064 – 1.829)
Perinural invasion	0.233	3.000 (0.493 – 18.247)
Lymph vascular invasion	0.999	–
Molecular subtype		
Luminal A	0.159	0.341 (0.076 – 1.522)
Luminal B	0.559	1.575 (0.343 – 7.224)
HER2 enriched	0.271	3.692 (0.360 – 37.856)
Size of metastasis (Macro metastasis)	0.999	–
No of SLN (positive) (>2)	0.844	1.333 (0.076 – 23.542)

Conclusion

The incidence of metastasis beyond the SLN was 58.1% in clinically node negative breast cancer patients. Our study demonstrated no further disease in patients with only micro-metastasis in the SLN and the patients with metastasis beyond the SLN had disease limited to level I axillary nodes. Patients aged ≥ 50 years were found to be more likely to have non-SLN metastasis when macro-metastasis was detected in SLNB. Our findings suggests that, in patients with only micro-metastasis in SLN, completion ALND could be avoided and for patients with larger metastasis size, especially when aged ≥ 50 years, removal of level I axillary nodes alone may be adequate.