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Original Research Article

Lymphedema following axillary lymphnode sampling versus axillary lymphnode dissection for patients with breast carcinoma in Al-Karama Teaching Hospital, Iraq

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ABSTRACT

Background: Lymphedema is a collection of fluid in some parts of the body. It is common after surgical intervention. Different approaches of dealing with lymphnode involvement in axilla have been describe. The main objective of present study is to determine the prevalence of lymphedema after different methods of axillary lymphadenectomy and axillary sampling techniques in Iraq.
Methods: This was a cross-sectional study in which post-operative lymphedema of the operated arm was compared in 25 patients with breast cancer after axillary ALND (the excised node more than 4 lymph node up to 18 node) and 25 patients following axillary ALNS of only enlarged hard lymphnode.
Results: The results of post-operative follow up from three months to three years following ALND patients showed significant increase in the arm circumference over those exposed to ALNS of the axilla.
Conclusions: It can be concluded that axillary lymphnode sampling of axilla associated with negligible lymphedema compared with ALND the routine performance of axillary dissection should be considered with caution.

Keywords: Axillary, Dissection, Iraq, Lymphnode, Lymphedema, Sampling

INTRODUCTION

Lymphedema is a collection of fluid in some parts of the body especially legs and arms. It is common after radical mastectomy. It was first described by Halsted.[1] Axillary sampling (ALNS) is the removal of lymphnode posterior and lateral to pectoralis minor muscle, which is felt hard, enlarged,and fixed. Whereas axillary lymphadenectomy (ALND) which is done in breast cancer is the removal of level I and II lymphnodes from axilla axillary lymphnode dissection (ALND) for staging of breast carcinoma associated with considerable edema of the arm.[2-5]

The role of axillary surgery in breast cancer is to stage and treat the disease, the treatment of axilla does not affect long term survival suggesting that axillary nodes act not (reservoir) of the disease but amarker for metastatic potential assessment of lymphedema based on circumference of the arm on the side of dissected axilla compare to other side.[6-8] Post-operative lymphedema in axillary lymphnode dissection frequently are seen and affect quality of life adversely.

The main objective of present study was to know the prevalence of lymphedema after variable method of axillary lymphadenectomy and ALNS in Iraq.

Axillary lymphnode sampling of axilla associated with negligible lymphedema compared with ALND the routine performance of axillary dissection in patient with breast

carcinoma has been questioned due to relatively high post-operative morbidity resulting from procedure because all patient treated with adjuvant therapy irrespective of lymphnode status.[9-11]

The morbidity associated with (ALND) has led to search for new method to stage axilla accurately but associated with minor post-operative sequel.

METHODS

A cross-sectional comparative study of 25 patients with breast carcinoma diagnosed by lumpectomy or truecut breast biopsy treated by simple mastectomywith ALND compared to 25 patients with breast carcinoma treated by simple mastectomy and ALNS. Post-operative lymphedema of the operated arm was carried out in 25 patients with breast cancer after axillary ALND (the excised node more than 4 lymph node up to 18 node). On the other hand, 25 patients following axillary ALNS of only enlarged hard lymphnode. Post-operative follows up from three months to three years following ALND patient showed significant increase in the arm and circumference over those exposed to ALNS of the axilla.

Group A: 25 patients treated by mastectomy with lymphnode sampling.

Group B: 25 patients underwent mastectomy with axillary lymphnode dissection level I and II carried out below axillary vein without skeletenision of the vein.

The severity of lymphedema

Mild: periods of arm swelling but no constant increase in dimension

Moderate: constant arm swelling and arm heaviness and physical discomfort

Severe: constant heaviness disability and huge swelling.

Post-operative follow-up

None of the patient had preexisting problem in the arm such as edema and postoperative patients were not given any restrictions in their everyday habit and advice to do arm exercise early (3 days after surgery). Follow-up every 3 month in the outpatient clinic up to 3 years).

Measurement of the arm swelling, the circumference was done with measuring tape in cm of the arm was noted 15cm above lateral epicondyle of the humerus. The measurement was done prior to surgery and post-operative follow-up using untreated limp as control arm. The extent of edema was evaluated in relation to the arm circumference where the postoperative circumference minus preoperative circumference of the limb was taken.

Most of lymphnode sampling is from level 1 in the axilla after axilla dissection was removed.[12,13]

RESULTS

Post-operative circumference of the arm

The pre-operative circumference of the upper arm was comparable between the operated and non-operated arm in both groups (Table 1). There was no significant difference in pre-operated measurement compared to post operated measurement of upper arm in those underwent axillary sampling group whereas a significant increase was found in dimension of upper arm in patient after axillary lymphnode dissection.

The prevalence of post-operative lymphedema was 0.04 among those underwent Axillary lymphnode sampling while it was 0.32 among those operated with Axillary lymphnode dissection (Table 2).

Table 1: pre-operative and post-operative circumference of the operated and non-operated arm after axillary sampling and axillary lymphnode dissection.

Arm	ALNS 25		ALND 25	
	Preoperative	Postoperative	Preoperative	Postoperative
Mean upper arm circumference	30.5	30.6	30.6	32.8

ALNS: axillary lymphnode sampling. ALND: axillary lymphnode dissection.

Table 2: distribution of post-operative arm lymphedema by type of surgery.

Upper limb lymphedema	Axillary lymphnode sampling	Axillary lymphnode dissection
None	24	17
Mild	1	4
Moderate	0	3
sever	0	1

There was a significant difference in the prevalence of lymphedema in favor of ALNS as a better technique (p=0.01), (Table 3).

Table 3: Comparison of prevalence of post-operative arm lymphedema.

	Lymphedema	
Surgery	**Yes**	**No**
ALNS	1	24
ALND	8	17

DISCUSSION

lymphedema is serious unpleasant complication of axillary lymphnode dissection in breast surgery and add physical and psychologicalburden on the patient and interfere with limp function which influenced by extent of surgery in the axilla and the number of dissected lymphnode lymphedema result after lymphnode dissection although most is mild, they have impact on daily living lymphedema from axillary lymphnode dissection may be decrease by liming the extent and number of lymphnode dissected several authors have questioned the need for axillary lymphadenectomy in selected patient such as old patient with small tumor liming the axillary lymphadenectomy to lymphnode sampling or level 1 dissection decrease post-surgical lymphedema but also may decrease the chance to identify metastases in sampling.[9,10,14-20]

Electively remove the lymphnode which is felt cancerous from its size hardness and colour and adhesion to other axillary structure these providing the pathologist with lymphnode that carry high probability of containing metastases the sampled lymphnode examined more accurately and through multiple section which may increase the detection of metastatic lymphnode sampling associated with clear near zero lymphedema.[21,22]

Data from current study show that lymphedema beside other morbid sign (pain, numbness, reduced mobility of the effected limp largely reduced with sampling, and with sampling no increase in circumference of arm on treated side. Significant increase in upper arm circumference of the operated arm, although this increase was minor subjectively it was bothering the patient.

Limitations of this study was unfortunately we have no facility of sentinel lymphnode biopsy in our hospital. Other co-morbidities were not obtained from patient's records.

CONCLUSION

Sampling shown to stage the axilla accurately and spares the patient the lymphedema resulting from axillary lymphnode dissection. The larger the number of lymphnode dissected from axilla the more sever the lymphedema.

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