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EFFICACY OF LYMPH NODE GROSSING BY ONCO SURGEON IN AXILLARY DISSECTION SPECIMEN

Oncology

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ABSTRACT

Background : Nodal grossing was routinely done by pathologist.This study was done to assess the efficacy of nodal grossing done in unfixed specimen by surgeon following axillary dissection in carcinoma breast.

Methodology : After completion of axillary dissection done for carcinoma breast the unfixed specimen was grossed by the surgeon with in a period of one hour. Grossed lymph nodes were categorised into significant nodes and insignificant nodes .Total number of nodes grossed and nodal positivity was compared between study group and control group.Number of additional nodes grossed from residual fibro fatty tissues and their nodal positivity were analysed.In addition,nodal positivity among significant nodes was analysed.

Results : In axillary dissection done for carcinoma breast the mean number of nodes grossed by surgeon and nodal positivity had increased though it was not statistically significant. The specificity and negative predictive value of significant nodes was high. Total of nodes number grossed from residual fibrofatty tissue was negligible.

Conclusion : Grossing of node by surgeon can improve the accuracy of staging which in turn improves prognostication and choice of adjuvant therapy. Grossing of fibrofatty tissue can be avoided.

KEYWORDS

Nodal grossing by surgeon, Significant node , Histopathological analysis.

INTRODUCTION:

Lymph node was the most important factor in predicting prognosis and in deciding about adjuvant treatment in carcinoma.The variation in the number of lymph nodes found was the result of various factors such as anatomical difference,extend of surgical dissection and diligence of pathologists search.However controversy arises when the standard minimum number of nodes required for pathological reporting were not adequately grossed.This could be due to inadequate grossing of node by pathologist or an inadequate lymph node dissection by surgeon.In countries like Japan grossing of lymph node for gastrointestinal tumours was done by surgeon himself leading to better yeild.This study was to apply the same yardstick for axillary nodal dissection done for carcinoma breast..Moreover surgeon can identify the significant node better at various stations leading to improved accuracy in pathological reporting.The above described factors form the rationale of this study.

AIM :

To study the effectiveness of lymph node grossing by surgeon from unfixed specimen ,to study the correlation between clinically significant node and pathological positivity and to assess whether additional retrieval of nodes from fibrofatty tissue was needed or not .

METHODOLOGY :

A total of 42 patients, who had undergone axillary nodal dissection(Level I & II) for carcinoma breast at Department of Surgical Oncology, Government Royapettah Hospital since March,2015 to Feb,2016 had been included in the study.

After lymphadenectomy the unfixed specimen was grossed by the surgeon with in a period of one hour.Each and every node was assessed for clinical significance (size >1cm/hard in consistency/extracapsular spread/matted nodes). Grossed lymph nodes were categorised into significant nodes and insignificant nodes based on the above mentioned feautures and then sent for histopathological analysis after fixation with 10% formalin.The remaining fibrofatty tissue was fixed with 10% formalin .After 24 hours of fixation fat solvent (absolute Isopropyl alcohol) was added to the residual fibrofatty tissue. After 48 hours the fibrofatty tissue was grossed for any additional nodes and sent for histopathological analysis.

Subcategorisation of cases done based on the site of lymph node dissection which includes neck node dissection, axillary node dissection, pelvic node dissection, ingunal node dissection. Number of significant nodes, insignificant nodes, nodes grossed from residual fat and nodal positivity in each group was recorded. Additional variable including age, sex, bodymass index,site and stage of tumour, chemoradiotherapy status and extend of nodal dissection were also noted.

For each case a control was selected from the axillary nodal dissection (level I &II) cases done for carcinoma breast in our department of Surgical Oncology prior to March, 2015. Control got matched for site, stage, chemoradiotherapy status and extend of nodal dissection inorder to avoid bias in comparision.

Total number of nodes grossed and nodal positivity was compared between study group and control group. Number of additional nodes grossed from residual fibro fatty tissues and their nodal positivity were analysed. In addition, nodal positivity among significant nodes was analysed.

RESULTS

AXILLARY DISSECTION :
Number of cases : 42
Number of nodes grossed

Total number of nodes retrieved in 42 study cases of axillary dissection was 726.Mean was 17.28. Range varied from 10- 27.Nodal positivity was seen in 20 cases.Total number of positive nodes was 104 with a mean of 2.47.

Total number of nodes retrieved in 42 control cases of axillary dissection was 409.Mean was 9.70.Range varied from 5 to 17. Nodal positivity was seen in 13 cases.Total number of positive nodes was 37 with a mean of 0.88 .

Table :1:
Axillary Dissection: Paired Sample Correlation for total number of nodes

	N	'p' Value
Pair 1 Total node(study & control group)	42	0.677
Pair 2 Nodal positivity(study & control group)	42	0.899

There exist no significant correlation between between the study group and control cases both in terms of number of nodes retrieved and in nodal positivity among retrieved nodes.

Nodal positivity in significant nodes :
Total number of significant nodes grossed in 42 cases of axillary dissection was 151 with a mean of 3.6. Among these 151 nodes,76 nodes were pathologically positive for malignancy (50%).
Sensitivity : 78.60%

Specificity: 97.42%
Positive predictive value : 62%
Negative predictive value : 97.36%.

As per this study since the sensitivity and positive predictive value for nodal positivity among significant nodes grossed during axillary dissection was low,hence both the significant and insignificant nodes grossed should be subjected to complete pathological examination.

Since the specificity and negative predictive value were high, more slices (2mm or less) from the significant nodes was recommended.

Nodes retrieved from residual fat :
Number of nodes retrieved from residual fat in 42 cases of axillary dissection was 50 constituiting 6.8% of the total number of nodes grossed.Out of 50 nodes only 4 node was pathologically positive accounting for 3.8% of total node positivity.

Table :2: Paired sample correlation for residual fat in neck dissection

	N	'p' Value
Pair 1 Total node(study & residualfat group)	42	0.743
Pair 2 Nodal positivity(study & residualfat group)	42	0.747

As per this study, additional retrieval of nodes from residual fat following axillary dissection was not recommended.

DISCUSSION

Grossing of nodes was routinely done by pathologist in our country and in most parts of the world. Controversy arises when adequate number of nodes were not retrieved. Decision making regarding adjuvant therapy was hampered in such situations.Not many studies had been reported regarding nodal grossing by surgeon himself. This study was undertaken to find out the efficacy of nodal grossing by surgeon and to find whether additional retrieval of nodes from the remaining fibrofatty tissue was needed or not . Moreover surgeon was in a better position to decide significant nodes which were likely to be pathologically positive.This study also intend to analyse the pathological positivity in such significant nodes.

In all the 42 cases the required minimum number of nodes(10 nodes) as needed by the TNM staging system had been grossed by surgeon. Moreover the completeness of nodal dissection can be decided by the surgeon ontable itself and additional dissection needed if any can be performed.

The mean number of nodes grossed by oncosurgeon had increasd compared to control group. Nodal positivity had also increased , but it was not statistically significant.Fisher et al had made similar observation in which they found out that increase in the number of nodes grossed during axillary dissection did not increase the nodal positivity however nodal positivity was increased in cases where more slices of node were examined.

The specificity and negative predictive value of significant nodes were high.Our study result suggest that more slicing of significant nodes could result in improved accuracy of staging.

Total of nodes number grossed from residual fibrofatty tissue was meager to nil Our study result suggest that by avoiding grossing in residual fibrofatty tissue lot of time and resources could be saved in pathological lab.

CONCLUSION

Grossing of node by surgeon can improve the accuracy of staging which in turn improves prognostication and choice of adjuvant therapy. Thorough pathological evaluation of significant nodes(>1 cm, hard, round node, matted node) with more slices(2mm or less) is advocated based on our study result.

Grossing of residual fibro fatty tissue can be avoided in cases of axillary nodal dissection which in turn can save time and resources at pathological labarotary

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