Residual breast tissue in the skin flaps after Patey mastectomy

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**Background & objectives**: Patey mastectomy implies complete removal of breast tissue. Likely area where residual breast tissue may be left is under the skin flaps. There is no study examining left over breast tissue under the Patey mastectomy skin flap. The present study was undertaken to study the presence of residual breast tissue in skin flaps after Patey mastectomy in patients with breast cancer.

**Methods**: In 37 patients of breast cancer undergoing Patey mastectomy, biopsy from under the skin flap at central point of 4 quadrants (upper outer, upper inner, lower inner and lower outer), 3 cm from cut margin of skin was taken to examine for residual breast tissue.

**Results**: In 8 of 37 (21.6%) cases residual breast tissue and in 3 of these (37.5%) tumour tissue was found under the skin flap.

**Interpretation & conclusion**: Overall in 21.6 per cent biopsies from under the skin flap revealed information of probable therapeutic importance. This information may in future serve as an additional prognostic factor to consider irradiation to reduce the incidence of local recurrence in flap positive patients.

**Key words** Carcinoma breast - residual breast tissue - skin flap

Patey mastectomy (modified radical mastectomy) implies complete removal of breast tissue from the subclavicular region to rectus-sheath and from middle of the sternum to mid-axillary line. The pectoral fascia and fascia over serratus anterior define deeper boundaries of breast dissection. The demarcation between breast tissue and subcutaneous fat is blurred. Therefore, dissection of breast tissue from subcutaneous tissue requires operative dexterity, skill and experience of the surgeon. A review of the data suggests that flap recurrences are due to residual cancer tissue or lymphatic containing tumour cells in the flap1-3. The aim of the present study was therefore to investigate the presence of residual breast tissue in skin flaps after Patey mastectomy in the patients of breast cancer in a tertiary care hospital in north India.

**Material & Methods**

The study was carried out in the Division of Surgical Oncology, Institute of Medical Sciences, Banaras Hindu University, Varanasi from January 1998 to March 2002. Consecutively selected female patients with breast cancer treated by Patey mastectomy were included in this study. Patients receiving neo-adjuvant treatment in the form of chemotherapy, radiotherapy, hormone treatment or patients with previous conservative surgical treatment or lumpectomy for diagnosis were excluded from this study. After completion of mastectomy a 1 cm x 1 cm disc of subcutaneous tissue from under the skin flap was excised for histological examination. This biopsy was taken from middle of each - upper outer, upper inner, lower outer and lower inner quadrants of the flap at fixed site of 3 cm from the cut margin of skin.
Ten sections of the biopsy from each site were examined by haematoxylin & eosin (HE) stain. The results were analyzed for the presence or absence of breast tissue in the biopsy specimens.

Results & Discussion

A total of 37 patients (age range: 30-60 yr, mean ±SD 42.14 yr) were operated by Patey mastectomy by one surgeon. Biopsy from the four quadrants under the skin flaps was taken (148 biopsies) from all patients. The patients had pathological tumour stage of T1N1 in 1, T2N0 in 10, T2N1 in 6, T3N0 in 9, T3N1 in 8, T4aN1 in 2 and T4bN1 in 1 case. Of these 37 patients, residual breast tissue was found in 8 (21.6%) (Table). In three of these 8 patients (37.5%) carcinoma cells were also found.

In 1995 Arriagada et al compared the results of treatment with simple, modified and radical mastectomy followed by radiotherapy or observation in 960 patients with clinical stage 1 or stage 2 breast cancer and found that radiotherapy produced 5-fold decrease in the risk of local recurrence.

Skin flap recurrences are the most frequent type of local recurrences following radical mastectomy that might result from implantation in the wound of carcinoma emboli that have escaped from blood vessels or lymphatic cut during the operation, or the implantation of carcinoma cells, or from small unrecognized foci of carcinoma left by the operating surgeon on the thick skin flaps which accompany residual breast tissue5. Local flap recurrence is frequent when a total of 8 or more axillary nodes are involved6, implying that in larger tumours residual breast tissue is more prone to contain tumour foci. A meticulous removal of all breast tissue from the skin flap will lead to diminution of the incidence of flap recurrence. Radical approach of Patey mastectomy also implies removal of all breast tissue therefore leaving behind any breast tissue in the skin flaps will imply Patey mastectomy to be a very wide lumpectomy.

At present the local management of breast cancer evolves around lumpectomy i.e., excision of tumour with a healthy rim of breast tissue all around the tumour, and administration of adjuvant radiotherapy. The axilla is treated on its own merit on the basis of axillary lymph node involvement. Malik et al7 found that by adopting a policy of tumour bed assessment for left over tumour cells after lumpectomy, and doing re-excision if tumour cells are positive results in decreased incidence of local recurrence. If medial, lateral, anterior and posterior margin biopsies are taken into account, the chances of recurrence increase when margins are positive5 and re-excision done.

For tumour size < T1 negative margin after lumpectomy is the aim but removal of the entire breast tissue is important for T3-T4 lesion. In the present study residual breast tissue was found in 21.6 per cent cases after Patey mastectomy and in three of these tumour cells were also present. Patients with positive breast tissue in the flaps may require irradiation of the chest wall on the same principle as irradiation of breast after lumpectomy for T1 lesion. However, a well-conducted randomized clinical trial comparing local recurrence rates in patients who receive radiotherapy and those who do not is required before a conclusion can be drawn.

Thus the results of the present study showed that the examination of residual breast tissue in skin flaps may serve as an additional prognostic factor of therapeutic significance.

References


<table>
<thead>
<tr>
<th>Tumour stage (No.)</th>
<th>Residual breast tissue found</th>
<th>Carcinoma cells found</th>
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</thead>
<tbody>
<tr>
<td>T1N1 (1)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>T2N0 (10)</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>T2N1 (6)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>T3N0 (9)</td>
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<td>-</td>
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<tr>
<td>T3N1 (8)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>T4aN1 (2)</td>
<td>1</td>
<td>-</td>
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<tr>
<td>T4bN1 (1)</td>
<td>1</td>
<td>-</td>
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<tr>
<td>Total 37</td>
<td>8 (21.6%)</td>
<td>3 (8.1%)</td>
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