INTRODUCTION
A benign epithelial inclusion in axillary lymph nodes is an extremely uncommon condition but may mimic micrometastasis histopathologically. So far, three types of benign epithelial inclusions are described. Cystic inclusions with mostly squamous or apocrine lining, tubules or duct like structures and admixture of these. History of previous breast biopsy, pre-sentinel lymph node message and their presence in subcapsular area of lymph node suggest mechanical carriage of inclusions. Other contemplations are embryological dislodgment or squamous metaplasia of already present glandular epithelium. Some of inclusions are found incidentally but others may present clinically with enlarged lymph nodes.

Histology may identify bland nature of heterotopic tissue present in lymph nodes, however, in equivocal cases immunohistochemistry (SMA/CD10 for myoepithelial cell layer) may be done to identify benign nature of these inclusions and to avoid mismanagement.

This case report describes the presence of benign squamous inclusion cyst in sentinel node recovered on mastectomy.

CASE REPORT
A 52 years old female patient reported to breast OPD of Liaquat National Hospital, Karachi, in July 2007 with the history of painless lump in her left breast for past one and a half month. The comorbid conditions included hypertension and diabetes mellitus. She was multiparous with 5 children; all of them were breast-fed. Her gynaecological history was unremarkable and she was still menstruating.

On physical examination, a non-tender lump measuring 4 x 4 cms, firm in consistency was present at 6 O’clock in the left breast. It was not associated with any skin changes, nipple inversion or nipple discharge. Examination of the right breast was unremarkable. No axillary lymph nodes were palpable on either side.

Ultrasonography showed a hypoechoic mass measuring 2.6 x 1.9 cms in central part of left breast. Mammogram reported this lesion as being suspicious of malignancy. Fine needle aspiration cytology followed by trucut biopsy of the lump revealed atypical proliferative breast lesion. Left breast lumpectomy was performed in August 2007. The biopsy of the lump reported the lesion to be an infiltrating ductal carcinoma grade-II (intermediate prognosis) according to the modified Bloom Richardson classification system. This tumour showed 60% of tumour cells forming tubules, 12 mitotic figures/ 10 high power field and moderate nuclear pleomorphism.

In September 2007, her sentinel lymph node biopsy and modified radical mastectomy was performed. On frozen section of the four sentinel lymph nodes received, one of the lymph nodes exhibited multiple cystic inclusions lined by stratified squamous epithelium, which was bland in character and there were no dysplastic changes (Figure 1). At many foci, the lining epithelium of the cyst showed a prominent granular cell layer while at few other places epithelium was flattened. Eosinophilic debris referring to keratin was present in cyst cavities (Figure 2). The mastectomy specimen was found to have residual tumour at cavity margins of previous lumpectomy site. The cystic lesion in lymph node failed...
to show any histological correlation with the tumour in breast, having bland lining of stratified squamous epithelium, while the breast carcinoma demonstrated sheets of tumour cells mostly forming tubules and having moderate nuclear pleomorphism and frequent mitosis. No areas of squamous differentiation or metaplasia were identified on multiple sections of breast tumour examined. Frozen section diagnosis was reported as benign squamous inclusion cyst which was later confirmed on paraffin sections of lymph nodes. A total of nineteen lymph nodes were recovered from the mastectomy specimen; all of those were benign reactive lymph nodes. No metastasis or any other pathology was found in the remaining specimen.

**DISCUSSION**

Benign heterotopic epithelial inclusions within a lymph node are well documented but rare histopathologic findings. Benign epithelial lymph node inclusions are infrequent, although well recognized at other body sites but these are very rare in axillary lymph nodes. If present, close observation is needed especially in women with breast diseases.\(^1\)\(^-\)\(^5\) It is important for accurate staging and comparison of the primary tumour with the appearance of the intranodal inclusions as an important aspect of their evaluation. Their misinterpretation can lead to inappropriate treatment.\(^7\)

Epithelial inclusions in axillary lymph nodes are present in several forms such as nevus cell aggregates, tubules or duct-like structures or cysts. Nevus cells may readily be misinterpreted as metastatic lobular carcinoma. Heterotopic epithelial elements, in the form of tubules, can easily be mistaken for metastasis from an infiltrating ductal carcinoma or infiltrating tubular carcinoma.\(^3\) Squamous epithelial inclusions are common in lymph nodes of cervical and peripancreatic region but very rare in the lymph nodes of axillary area.\(^8\) In axillary lymph nodes epithelial inclusions can be cystic with lining of stratified squamous epithelium or show apocrine change. The presence of epithelial hyperplasia of inclusion cyst lining and even papillomas have also been reported in literature.\(^9\)

In literature very few cases have so far been described in sentinel lymph nodes and even fewer have cysts with pure squamous lining without glandular foci such as mammary glands and ducts.\(^1\)\(^,\)\(^6\)\(^,\)\(^10\) The first time benign squamous inclusion cyst without duct like component in axillary lymph node was reported by Fraggetta and Vasquez but, in the case reported by them, the primary breast carcinoma had foci of squamous differentiation. Diagnostic problem in their case was to rule out well-differentiated squamous carcinoma metastasis despite benign histology of lesion.\(^10\) In this case no squamous differentiation was seen in primary breast carcinoma and morphological characteristics of epithelial inclusion cysts did not show any correlation with the primary carcinoma where the tumour cells were arranged in sheet like and tubular fashion and not revealing stratification or squamous differentiation.

Prior breast disease with diagnostic invasive procedures done has been implied in pathogenesis of these aberrant epithelial tissues. But they have been found with or without previous breast disease or biopsy.\(^1\)\(^,\)\(^2\)\(^,\)\(^6\) Carter et al. described the presence of benign epithelial cells in peripheral sinuses of axillary lymph node; the phenomenon being termed as benign transport.\(^5\) Likewise, this patient had previous biopsy procedures done for the diagnosis of breast lump. The subcapsular location of epithelial rests and history of prior breast biopsy procedures suggest benign implantation through lymphatics. A more central location points towards an alternate mechanism e.g. embryological displacement or squamous metaplasia of the already present glandular epithelium.\(^2\)

Ancillary studies like immunohistochemical confirmation of the diagnosis are recommended in histologically
equivocal cases. Judicious use of immunohistochemical markers is needed to elucidate the true and benign nature of aberrant tissue in lymph nodes, such as S-100 antibody can detect nevus cells. A myoepithelial cell layer which is absent in metastasis can be demonstrated around the intranodal benign ducts by immunohistochemical stains (smooth muscle myosin heavy chain, smooth muscle actin [SMA], or CD10). Basement membrane antigen reactivity (Collagen IV or Laminin) can be found around benign ducts.

Awareness of the occasional occurrence of non-neoplastic nodal inclusions help avoid misdiagnosis. Epithelial inclusions may co-exist with breast micrometastases and the danger of mistaking benign inclusions in lymph nodes for metastatic malignancy, particularly in tissue examined by cryostat section, is emphasized.

REFERENCES