Benign lymph node inclusions mimicking metastatic carcinoma

Although previously well recognised, Fisher et al have highlighted the importance of differentiating between metastatic carcinoma and benign intranodal epithelial inclusions. I describe three further cases encountered recently in which immunocytochemical analysis provided valuable evidence to help clarify the nature of intranodal inclusions. In each case the differentiation was clinically critical in that no other nodes were involved.

Case 1

A 66-year-old woman had a mass in the left breast detected by screening. A localisation biopsy specimen showed a grade I ductal carcinoma and a diffusely infiltrating lobular carcinoma. She underwent mastectomy: there was residual invasive lobular carcinoma and multiquadrant foci of invasive lobular carcinoma up to 7 mm diameter. The original tumour was estimated at 200 mm diameter and there was pagetoid spread of lobular carcinoma in ducts and extensive vascular invasion. Three of 12 axillary lymph nodes contained groups of small cells in the capsule. Initially thought to be metastatic lobular carcinoma, immunocytochemistry was performed to look for lesser degrees of spread to the lymph nodes in the same slide. Immunocytochemistry was performed on the breast tumour and the lymph nodes for HMFG-2, AE1/AE3, CAM 5·2, and S100. The lobular carcinoma stained strongly positively for AE1/AE3, CAM 5·2, and HMFG 2, and weakly for S100. Cells in the lymph node stained strongly for S100 but were otherwise negative, indicating that they were benign nesin cells. Interestingly, there were numerous S100 positive cells scattered through the lymph node parenchyma.

Case 2

A 65-year-old woman had a cytologically malignant lump detected by screening in the left breast. She underwent mastectomy and histological examination showed a 14 mm lobular carcinoma. One of 17 axillary lymph nodes contained a suspicious focus of sclerosis and scattered histiocyte-like cells with clear cytoplasm. Periodic acid Schiff stain showed intracytoplasmic mucin, and immunocytochemical staining showed positivity for HMFG-2 and CAM 5·2 and was negative for carcinoembryonic antigen (CEA) in both intranodal and the original carcinoma, confirming metastatic lobular carcinoma (fig 1).

Case 3

A 26-year-old woman had bilateral papillary serous cystadenomas of the ovaries of borderline malignancy existed. No unequivocal stromal invasion was seen, but tumour was present on the surface of the left ovary. The right external iliac lymph node was excised. Histological analysis showed a single large lymph node in which there were multiple subcapsular epithelial structures, some of which showed papillary structure with psammoma body formation. These were thought to be benign inclusions of multianullarian type epithelium (fig 2). In an attempt to demonstrate disparity in immunocytochemical profile to support this diagnosis immunocytochemistry was performed on both ovarian tumours and the lymph node for CEA, vimentin, HMFG-2, S100, CAM 5·2 and AE1/AE3. The immunocytochemical markers were similar in the ovarian tumours and inclusions except that CA125 showed delicate membrane staining in both ovarian tumours but the epithelial structures in the lymph node did not stain.

In each of the cases described the lymph node diagnosis made the difference between lymph node positive and lymph node negative, with subsequent implications for clinical management. The cases illustrate the use of immunocytochemistry to support or refute a morphologically based opinion. The first case showed that removal of cell inclusions can line up in a pseudo-Indian file looking remarkably like metastatic lobular...
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