Histological examination of the sentinel node showed reactive follicular hyperplasia of the lymphoid tissue and an epithelial inclusion, located immediately beneath the nodal capsule (Figure 1a). The inclusion consisted mainly of aggregates of tubular glands of variable size, lined by luminal cuboidal cells and a distinct outer layer of clear cells, consistent with myoepithelial cells (Figure 1b). Some glands were lined by apocrine epithelium consisting of cuboidal cells with eosinophilic granular cytoplasm, round nuclei and prominent nucleoli. Rare glands were appreciably enlarged and their lumina appeared almost entirely filled with cells showing abundant cytoplasm with indistinct borders and round to ovoid nuclei with uniform cromatin and inconspicuous nucleoli (Figure 1c). No mitoses, necrosis or cells with atypical features were detected. Finally, small cystic structures lined by squamous epithelium were also present. Immunostaining for actin revealed an intact layer of myoepithelial cells around all the glandular structures (Figure 1d), but not in the wall of the squamous microcysts.

On the basis of cytological and architectural criteria and the immunohistochemical highlighting of the myoepithelial cells, the present case was interpreted as a nodal inclusion of ectopic breast tissue with focal florid ductal hyperplasia.

To the best of our knowledge, there are only a few reports of proliferative lesions in nodal breast tissue inclusions. In most cases the authors described apocrine metaplasia of breast epithelium and proliferative changes with features resembling florid adenosis and sclerosing adenosis.[2–4] In one case the ectopic breast tissue had features of a benign papilloma.[5]

The only previously reported example of axillary ectopic breast tissue with features of ductal hyperplasia, similar to the present one, is the case described by Maiorano *et al.*[4] In this report, the authors describe ectopic breast tissue, consisting of duct-like structures with foci of intraductal hyperplasia showing complete obliteration of the lumen and formation of pseudo-cribriform spaces, similar to florid duct hyperplasia commonly encountered in proliferative fibrocystic disease of the breast. These cases support the accumulating evidence that ectopic breast tissue can undergo proliferative intraductal changes and consequently it appears reasonable to speculate on the possibility of a primary breast carcinoma of the axillary nodes.

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Interfollicular Hodgkin's lymphoma and Castleman's disease

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Sir: Interfollicular Hodgkin's lymphoma (IHL) is a rare pattern of Hodgkin's lymphoma (HL), characterized by a paucity of diagnostic Reed–Sternberg (RS) cells, usually located in the interfollicular and paracortical tissue.[1] Castleman's disease (CD)[2] is a heterogeneous clinicopathological entity with two histological variants: hyaline-vascular type, and plasma cell type (CDPC). Clinically, there are primary and secondary cases, the term 'secondary' referring to a CD occurring in association with another well-recognized disease.[1] We describe a case in which both CDPC and IHL coexisted in the same biopsy, emphasizing the paucity of diagnostic RS cells as a potential source of misdiagnosis (failure to recognize HL).

An otherwise asymptomatic 21-year-old woman presented with a growing painless right supraclavicular mass, 60×40 mm. She had no other lymphadenopathy; the liver and spleen could not be palpated. A chest computed tomographic (CT) scan showed pre-tracheal and retro-caval nodules, both lungs were normal, as was an abdominal CT scan. Haematological studies revealed haemoglobin of 103.0/l, a white blood cell count of 15.2×10^9/l with 78% neutrophils and platelets of 243×10^9/l. HIV (ELISA) was negative. C-reactive protein was positive. β_2-Microglobulin was 1512 IU/l (normal up to 1350). A direct Coombs test was negative. Renal and liver function tests, lactate dehydrogenase and proteinogram were all normal. HHV-8 assays by polymerase chain reaction and indirect immunofluorescence were negative.

The right supraclavicular mass was excised. Histology showed medium-sized follicles with evenly distributed reactive germinal centres. The interfollicular tissue was composed of a plasma cell-rich lymphoid infiltrate. Immunohistochemically, the plasma cells

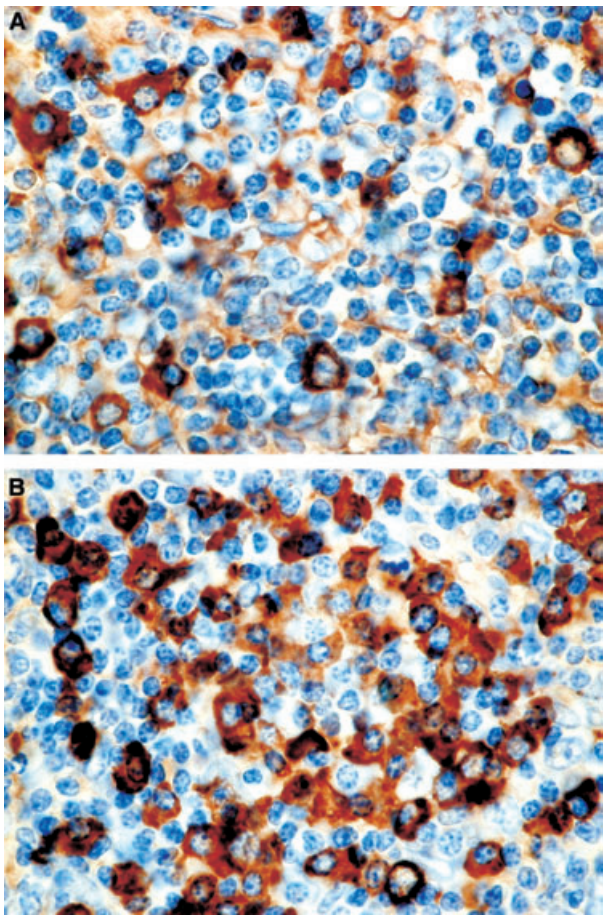

Figure 1. A, Kappa light chain. **B,** Lambda light chain.

showed a Lambda (HP6054 BioGenex, San Ramon, CA, USA)/Kappa (K88 BioGenex) ratio of 10 : 1 (Figure 1). Only two of the many slides available showed isolated large atypical mononuclear cells and RS cells located in the interfollicular tissue. These were strongly positive for CD15 (C3D1; Dako, Glostrup, Denmark) (Figure 2), and CD30 (BerH2; BioGenex). CD20 (L26; BioGenex), CD3 (PS1; Novocastra, Newcastle, UK) and CD45 (PD7/26; Dako) were all negative. A bone marrow trephine biopsy showed normal histology, the plasma cells accounting for 2% of the overall cellularity.

The coexistence of CD with HL and non-Hodgkin's lymphoma is a well-documented event and a hypothetical causal relationship is a matter of debate. In such cases, the clinical manifestations of CD have been reported to disappear after the resection of affected lymph nodes, suggesting that products of those lymph nodes may be implicated. Secondary CD occurs in association with other diseases, such as HIV and other

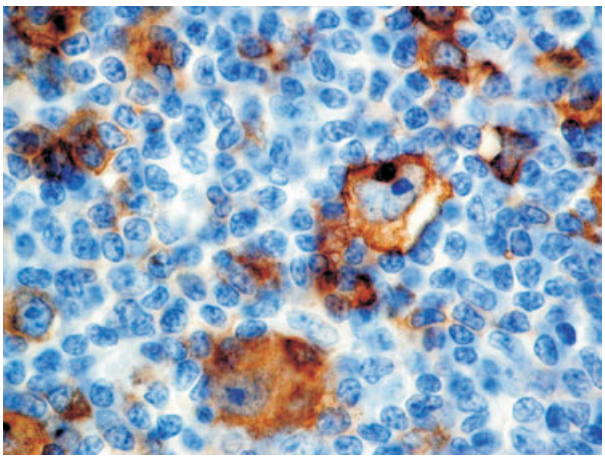

Figure 2. High-power view of Reed–Sternberg cells, immunostained with anti-CD15 (C3D1) antibody.

infections, autoimmune disorders and plasma cell dyscrasias. In this setting, some investigators believe that the condition should not be named CD, because it represents a reaction to the IL-6-rich environment.[1] IL-6 is a cytokine that induces B-cell differentiation in immunoglobulin-producing cells.[3] It is mainly synthesized in the germinal centres, but RS and mononuclear-variant cells in HL have also been shown to produce IL-6.[4]

A λ light chain restricted phenotype is an interesting finding in this case. In different reports of CDPC the percentage of λ light chain restriction has varied between 38 and 60%.[5] The occurrence of such a phenomenon in CD is partially explained by the mantle cells' aberrant phenotype.[6]

Finally, it needs to be emphasized that this type of HL has been a classic diagnostic pitfall for pathologists, who can easily miss the diagnostic RS cells because of their scarcity and the unusual CD background in which they are set. General histopathologists should be alerted and should thoroughly sample CDPC cases in order to search for isolated SR cells. Immunohistochemistry is then helpful to highlight these cells.

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The expression of immunologically relevant surface molecules in the human tracheal mucosa is unaffected post mortem

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Sir: Immunological investigations of the human trachea as part of the conducting airways are of clinical relevance.[1] However, tracheal samples are rarely taken as biopsies and surgical samples due to technical/ethical difficulties and low availability. Although tissues obtained post mortem are regularly used in pathological studies, formalin fixation and paraffin embedding limit the use of specific markers for leucocytes. For example, CD209 (DC-SIGN) seems to be unsuitable for *in situ* staining, whereas few data have been reported for immunohistochemistry with CD80, CD86 and CD11c on paraffin sections.[2,3]

Since numerous factors influence morphology post mortem,[4] we selected only tissues with a continuous epithelial layer connected to the basement membrane (BM). We collected 47 tracheal samples with post mortem interval (PMI) up to 80 h, of which 19 matched the above selection criterion. These samples were divided into two groups with PMI of 1–24 h ($n = 10$) and PMI > 24 h ($n = 9$). This group consisted of eight patients with non-natural causes of death (trauma, accident, homicide) and 11 patients with natural causes of death (coronary circulation failure, $n = 8$; cerebral paralysis, $n = 2$; tuberculosis, $n = 1$). In addition, eight surgical specimens (tracheal injury, $n = 4$; different non-tracheal tumour entities, $n = 4$) served as controls. Sections (6 μm) were stained immunohistochemically with a large panel of leucocyte markers as demonstrated in Figure 1: CD11a (clone MHM24), CD11c (HL3), CD40 (LOB7/6), CD54 (HA58), CD80 (DAL-1), CD86 (BU63), CD209 (120507) and HLA-DR (C3/43). The epithelium, lamina propria (defined as the area 100 μm perpendicular to the BM) and submucosa (100–500 μm from the BM) were studied separately. Three sections of the lower trachea each 600 μm apart were analysed over a length of BM of at least 10 mm. The data were pooled since no differences in cell densities were found between the three different levels.

As expected, increasing morphological degradation was observed with longer PMI, especially for the epithelium (Figure 1). Because of luminal defects quantitative comparison of the cell densities in the epithelial layer was not possible. The densities for HLA-DR-expressing cells in the epithelial layer of the controls were 370 ± 120 cells/mm^2. Although changes in cell distribution from the tracheal to the bronchial level remain to be investigated, our data are in concordance with published data on bronchial biopsy specimens.[5]

Total cell densities in cells/mm^2 of the subepithelial mucosa (500 μm from the BM) for both PMI groups did not differ from the controls: CD11a (282 ± 23), CD11c (137 ± 17), CD40 (47 ± 9), CD54 (149 ± 9), CD80 (37 ± 4), CD86 (93 ± 13), CD209 (45 ± 4), HLA-DR (229 ± 12). Only CD54 showed a significant decrease: 149 ± 9 (controls) to 104 ± 6 (PMI > 24 h, $P = 0.03$). Similar results were reflected in the cell densities of the submucosa; however, the cell densities in the lamina propria were much higher (Figure 2). This is obvious, since the submucosa accounts for 80% of the subepithelial mucosa area in this study. It has to be noted that an increase in the number of cells in allergic patients might be most pronounced in the lamina propria, as indicated in studies of bronchial biopsy specimens.[6] Therefore, it is important to distinguish the different mucosal layers.

For every marker at least one extremely high value belonging to a small group of samples was observed independent of the cause of death. Although the medical history of the patients was unknown, this could well be related to a local infection or allergy. It would be advantageous to increase the number of samples and have more background information to confirm or refute this hypothesis.

Thus, by setting a single inclusion criterion, it is possible to use cryopreserved autopsy material even