Concomitant lymphocyte-rich classical Hodgkin’s lymphoma and Warthin’s tumor

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Lymphomas associated with Warthin’s tumor (WT) are extremely rare. Here, we report the simultaneous occurrence of lymphocyte-rich classical Hodgkin’s lymphoma (LRCHL) and WT in a 78-year-old patient whose symptoms included an enlargement of the left parotid gland. Upon parotidectomy, the tissue specimen showed a WT with extensive replacement of the lymphoid stroma by small lymphocytes and some scattered Reed–Sternberg cells; however, the oncocytic epithelium was preserved. Further investigation revealed mediastinal and abdominal lymphadenopathy, consistent with stage IVB disease. To our knowledge, this is the first case report of LRCHL associated with WT. The lymphoid stroma in WT is part of the systemic lymphoid tissue and thus may be involved in the dissemination of the lymphoma. This case serves as a reminder that a careful evaluation of the histomorphological and immunohistological features of the lymphoid tissue is required for a WT biopsy.

CASE REPORT

A 78-year-old male presented with a 4-year history of an unapparent mass in his left parotid gland that began to change in size over a 4-month period. He sought care in April 2011 due to an enlarged left parotid mass, no pain, no fever, and no night sweats. His medical history included a 5-year history of podagra and a 50-year history of heavy smoking. Upon examination, a solitary, hard, non-tender mass measuring 6 × 5 cm in the tail of his left parotid gland was discovered, and some swollen lymph nodes in the upper left neck and left supraclavicular region were also present.

Several laboratory tests were performed, and the results were as follows: hematocrit 30.9%; hemoglobin 100 g/L; leukocyte count 19.43 × 10⁹/L (86.1% lymphocytes, 12.2% neutrophils, 1.6% monocytes, 0.1% basophils and 0.0% eosinophils); platelet count 142 × 10⁹/L; and blood chemistry Na⁺ 145.4 mM, K⁺ 4.67 mM, Ca²⁺ 2.34 mM, urea 8.7 mM, creatinine 140 μM, cholesterin 10.1 μM, serum glutamic-oxaloacetic transaminase (SGOT) 29 U/L, serum glutamic pyruvic transaminase (SGPT) 10 U/L, lactate dehydrogenase (LDH) 321 U/L and creatine kinase (CK) 158 U/L.

Contrast-enhanced computed tomography scans of the parotid gland and chest showed an apparent mass in the left parotid gland and the presence of hilar, mediastinal, and abdominal lymphadenopathy (Fig. 1). The patient was treated with a superficial parotidectomy, and the tissue was subjected to a series of pathological examinations. The patient had previously suffered a closed fracture of the clavicle and received surgery in October of 2011; however, his physical condition was aggravated, and he showed signs of general edema, dyspnea, and a light coma. The patient died of deterioration due to HL in November of 2011, and his overall survival time was 7 months from the date of diagnosis.

PATHOLOGICAL FINDINGS

The patient underwent surgical resection of the parotid mass and the surrounding peri-parotid lymph nodes. The excised specimen measured 6 × 4 × 3 cm and was well-circumscribed. It appeared as a multi-cystic mass in cross section, and grayish lymphoid tissue could be seen between the fluid-filled cystic spaces. Histological examination showed the presence of a WT, mainly...
composed of cystic spaces with the typical bilayered oxyphilic epithelium, which presented as an inner row of tall non-ciliated columnar cells with oncocytic granular cytoplasm and an outer layer of cuboidal or polygonal cells (Fig. 2A). Another histologic component coexisting with the oncocytic epithelium was abnormal lymphoid tissue, consisting of a large number of small lymphocytes without germinal center formation. In addition, the peri-parotid lymph node architecture was infiltrated by some scattered Reed–Sternberg (R–S) cells. Classic binucleated R–S cells and other types of R–S cells were observed. In addition, small lymphocytes without admixture of eosinophils and neutrophils were observed in the background (Fig. 2B and C). Meanwhile, the immunohistological study demonstrated that the R–S cells were positive for CD30, and negative for LCA, CD45RO, CD3, CD5, CD20, CD79a, Cyclin D1, CD56, granzyme B, Perforin, CD68, CD15, and ALK (Fig. 2D-F). Epstein–Barr virus DNA was also detected. A diagnosis of LRCHL with coexistent WT was made based on the findings described above.
DISCUSSION

Because WT comprises lymphoid tissue and epithelial cells, lymphoma and carcinoma have been found in WT. Most of those malignancies are designated as malignant transformations and predominantly include malignant lymphomas and carcinomas. Malignant transformation of the epithelial component of Warthin’s tumor is extremely rare. Mucoepidermoid carcinoma is the most frequent carcinoma arising in WT.3,4 A review of the English literature resulted in the identification of 23 cases of WT related to malignant lymphoma; these cases involved many different subtypes of HLS and non-Hodgkin’s lymphomas (NHLs), including B-cell derivatives and T-cell derivatives.5,6 However, there were only 2 cases of HL, one of which contained a mixed-cellularity subtype.7 The other case was not further distinguished with regard to the lymphoma subtype and was present adjacent to, but not involving, the lymphoid stroma of WT8 (Table I). The case we have reported here illustrates a rare combination of WT with LRCHL. The patient suffered from an unapparent mass in his left parotid gland, but the imaging results showed that the mediastinum, spleen, liver, and lung were also involved. This condition might suggest a lymphoma and lead to a biopsy of the cervical node, which would render the WT undetectable. We suggest that the combination of WT and lymphoma may occur more often than is reported, especially in association with the disseminated form of malignant lymphoma.

The diagnosis of WT is not difficult due to its characteristic architecture. Similarly, the diagnosis of lymphoma is not routinely difficult. However, a simultaneous Hodgkin’s lymphoma may be overlooked in WT if the R–S cells are dominant and separated. In the differential diagnosis, some non-lymphoma lesions and lymphomas should be taken into account. Infectious mononucleosis (IM) can be confused with malignant lymphoma because of the effacement of the cellular architecture; the marked proliferation of immunoblasts is very similar to that of the R–S cells, especially the binucleated ones. IM predominantly comprises large lymphoid cells distributed throughout the sinus; however, the sinus pattern remains intact or even focally accentuated. Other viral (including post-vaccinial) lymphadenitis can be easily confused with Hodgkin’s lymphoma for the proliferation of immunoblasts, especially if the vaccination history is overlooked. The most important histologic feature of lymphadenitis is the presence of numerous immunoblasts scattered among the lymphocytes, giving the lymphoid tissue a mottled appearance. Immunohistochemistry is very helpful for this diagnosis because the R–S cells of classical Hodgkin’s lymphoma are positive for CD30 or CD15, making the differential diagnosis easier. The anaplastic large cell lymphoma architecture of the involved organs is often eroded by solid, cohesive sheets of neoplastic cells. These neoplastic cells are very similar to R–S cells, but they are reactive with CD30, T cell, and ALK antibodies and can be distinguished by immunohistochemistry. Anaplastic diffuse large B-cell lymphoma is composed of diffuse large immunoblast-like tumor cells, which may be very similar to R–S cells. Although the tumor cells are positive for CD30, they also show strong immunoreactivity with ALK antibodies in a granular cytoplasmic distribution and are only diffusely positive for LCA, CD20 and CD79a simultaneously.

Although a relationship between WT and lymphoma has been reported, the development of malignant lymphoma in WT is not well understood. It may arise from an intraparotid lymph node or in the gland itself. In the former instance, the histologic features and natural history of the disease are those of nodal lymphoma in general. When the salivary gland tissue is involved, it may represent either a route by which dissemination has occurred or, more commonly, a primary lesion of this organ.

REFERENCES


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