



Histological Characteristics of Lymph Epithelial Carcinoma and its Morphology

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Description

Lymph Epithelial Carcinoma (LEC) is an uncommon malignancy that most frequently arises in the nasopharynx, although it can also occur in other sites, such as the salivary glands and thymus. This distinct type of carcinoma is characterized by its unique morphology, which sets it apart from more common forms of cancer. Understanding the morphological features of lymph epithelial carcinoma is crucial for accurate diagnosis, prognosis, and treatment planning.

Histological characteristics

The hallmark histological feature of lymph epithelial carcinoma is the presence of undifferentiated epithelial cells intimately associated with dense lymphoid infiltrates. This close intermingling of epithelial and lymphoid components gives the tumor its distinctive appearance. Under the microscope, LEC often exhibits a non-keratinizing, undifferentiated pattern, and the tumor cells are large with vesicular nuclei and prominent nucleoli.

The lymphoid component typically consists of a mixture of T lymphocytes, B lymphocytes, and plasma cells, forming a characteristic lymph epithelial lesion. This histological feature is a key diagnostic criterion and is not commonly seen in other types of carcinomas.

Nasopharyngeal lymph epithelial carcinoma morphology

In nasopharyngeal LEC, the tumor is often found in close association with the surface epithelium of the nasopharynx. The tumor cells infiltrate the stroma, forming sheets or nests. The stroma is densely infiltrated by lymphocytes, giving the tumor a syncytial appearance. The tumor cells can also invade blood vessels, nerves, and adjacent structures.

Nasopharyngeal LEC is further classified into three types based on its histological appearance: The non-keratinizing, the differentiated, and the basaloid types. The non-keratinizing type is the most common and is characterized by large, undifferentiated tumor cells with prominent lymphoid infiltrates. The differentiated type exhibits more prominent squamous differentiation, while the basaloid type is characterized by small, basal-like tumor cells.

Salivary gland lymph epithelial carcinoma morphology

Lymph epithelial carcinoma in the salivary glands, particularly the parotid gland, has distinctive morphological features. The tumor cells in salivary gland LEC are often arranged in nests or sheets within a desmoplastic stroma. The lymphoid infiltrates in this context can vary in density.

One of the challenges in diagnosing salivary gland LEC lies in distinguishing it from other malignancies, such as undifferentiated carcinoma and lymphoma. The characteristic lymph epithelial lesion, with intimate association between tumor cells and lymphocytes, aids in the differential diagnosis.

Thymic lymph epithelial carcinoma morphology

Lymph epithelial carcinoma of the thymus is an exceedingly rare entity. Histologically, it shares some similarities with its nasopharyngeal counterpart. The tumor cells in thymic LEC are often undifferentiated, with vesicular nuclei and prominent nucleoli. The tumor is infiltrated by lymphocytes, creating the characteristic lymph epithelial lesion.

Thymic LEC can be challenging to differentiate from other thymic malignancies, and immunohistochemistry plays a crucial role in confirming the diagnosis.

The expression of epithelial markers, such as cytokeratin's, supports the epithelial nature of the tumor cells.

Immunohistochemistry

Immunohistochemistry is an essential tool in confirming the diagnosis of lymph epithelial carcinoma and distinguishing it from other malignancies. The tumor cells typically express epithelial markers such as cytokeratin's (e.g., CK7, CK19) and epithelial membrane antigen (EMA). The lymphoid infiltrates are positive for various lymphoid markers, including CD3, CD20, and CD45.

Additionally, the Epstein-Barr virus (EBV) is often associated with lymph epithelial carcinoma, especially in the nasopharynx. Immunohistochemical staining for EBV-encoded RNA (EBER) can be utilized to demonstrate the presence of the virus within the tumor cells.

Prognostic implications

Understanding the morphology of lymph epithelial car-

cinoma has implications for prognosis and treatment. In general, LECs tend to have a more favorable prognosis compared to other types of carcinomas in the same anatomical sites. The dense lymphoid infiltrates and immune response associated with LEC may contribute to a better response to treatment.

In conclusion, lymph epithelial carcinoma is a unique malignancy defined by its distinctive morphological features. The close association of undifferentiated epithelial cells with a rich lymphoid infiltrate is a key diagnostic criterion, allowing pathologists to differentiate it from other tumors. This understanding not only aids in accurate diagnosis but also has implications for prognosis and treatment planning, emphasizing the importance of considering morphology in the comprehensive management of patients with lymph epithelial carcinoma.