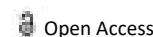




PERSPECTIVE



Reed-Sternberg Cell: Types and Diagnosis

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Description

Reed-Sternberg cells (also known as lacunar histiocytes for certain types) are distinctive, giant cells found with light microscopy in biopsies from individuals with Hodgkin lymphoma. They are usually derived from B lymphocytes, classically considered crippled germinal center B-cells. In the vast majority of cases, the immunoglobulin genes of Reed-Sternberg cells have undergone both V(D)J recombination and somatic hypermutation, establishing an origin from a germinal center or postgerminal center B-cell. Despite having the genetic signature of a B-cell, the Reed-Sternberg cells of classical Hodgkin lymphoma fail to express most B-cell specific genes, including the immunoglobulin genes. The cause of this wholesale reprogramming of gene expression has yet to be fully explained. This is believed to be the result of widespread epigenetic changes of unknown origin, but is part of the result of so-called “non-free” mutations acquired during somatic hypermutation. In contrast to the sea of B-cells, they give the tissue a moth-like appearance.

Reed-sternberg cell

Hodgkin lymphoma is a primary malignant tumor of the lymph nodes and rarely affects extralymph node lymphoid tissue. Diagnostic criteria are tumor components (typical Reed-Sternberg cells and variants) and reactive components (normal mature lymphocytes, eosinophils, plasma cells, neutrophils, fibrosis and capillaries). Histological classification of Hodgkin lymphoma (based on lymph node structure, tumor-to-non-tumor component ratio, Reed-Sternberg cell morphology and composition of reactive infiltrates):

- (Non-classical) Nodular lymphocyte predominant Hodgkin's lymphoma (5%)
- Classical Hodgkin's lymphoma
- Nodular sclerosing (60%-80%)
- Lymphocyte-rich (5%)
- Mixed cellularity (15%-30%)

- Lymphocyte depleted (<1%)

Variants of Reed-Sternberg Cell (RSC):

- Hodgkin's cell (atypical mononuclear Reed-Sternberg Cell (RSC))
- Lacunar Reed-Sternberg Cell (RSC)
- Pleomorphic Reed-Sternberg Cell (RSC)
- Limfo-histiocytic (“pop-corn”) variant
- “Mummy” Reed-Sternberg Cell (RSC)

Hodgkin's lymphoma. Variants of Reed-Sternberg cell (H&E, ob.x20):

Hodgkin cells (Atypical mononuclear Reed-Sternberg cells are variants of Reed-Sternberg cells that have the same properties but are mononuclear.

Lacunar Reed-Sternberg cells are large, with a single hyperlobular nucleus, multiple small nucleoli, and an eosinophilic cytoplasm that contracts around the nucleus, creating an empty space (“lacunae”).

Pleomorphic Reed-Sternberg cells have multiple irregular nuclei “Popcorn” Reed-Sternberg cells (lymphoid histiocyte variants) are small cells with very lobular nuclei and small nucleoli. “Mummy” Reed-Sternberg cells have a compact nucleus, no nucleoli or basophilic cytoplasm

Hodgkin lymphoma

A special type of Reed-Sternberg Cell (RSC) is lacunar histiocyte, when fixed with formalin, recedes the cytoplasm and looks like a cell with an empty space (called lacunar) between the nuclei. These are characteristic of the tuberculous sclerosis subtype of Hodgkin lymphoma.

Emulsified RSCs (compact nuclei, basal cytoplasm, no nuclei) are also associated with classical Hodgkin lymphoma, and popcorn cells (small cells with hyperlobular nuclei and micronucleus) are the lymphoid tissues of Reed-sternberg cells. A predominant Hodgkin lymphoma (NLPHL) that is a bulb (LH) variant and is associated with nodular lymphocytes.

RSCs and one RSC mobileular line (L1236 cells) however,

now no longer different RSC molecular traces explicit very excessive tiers of ALOX15 (i.e., 15-lipoxygenase-1) or probably ALOX15B (i.e. 15-lipoxygenase-2), enzymes that metabolize arachidonic acid and numerous different polyunsaturated fatty acids to a big range of bioactive merchandise together with mainly the ones of the 15-Hydroperoxyeicosatetraenoic acid own circle of relatives of arachidonic acid me-

tabolites. This is uncommon in that lymphocytes generally explicit very little ALOX15. It is recommended that ALOX15 and/or ALOX15B, possibly running thru one in all its arachidonic acid-derived merchandise, the eoxins, contributes to the improvement and/or morphology of Hodgkin lymphoma.