Hodgkin Lymphoma

- Lymphoid neoplasm derived from germinal center B cells.
- Neoplastic cells (i.e. Hodgkin/Reed-Sternberg/LP cells) comprise the *minority* of the infiltrate.
- Non-neoplastic background inflammatory cells comprise the *majority* of infiltrate.
- Two biologically distinct types:
  1. Classical Hodgkin Lymphoma (CHL)
  2. Nodular Lymphocyte Predominant Hodgkin Lymphoma (NLPHL)
Classical Hodgkin Lymphoma

• Neoplastic B (Hodgkin) cells are often take the form of Reed-Sternberg cells or variants
  – Classic RS, mummified and lacunar cells.
• The majority of background, non-neoplastic small lymphocytes are T cells.
• Unique immunophenotype that differs from most B cell lymphomas.
• Divided into 4 histologic subtypes according to the background milieu:
  – Nodular Sclerosis
  – Mixed Cellularity
  – Lymphocyte Rich
  – Lymphocyte Deplete
CHL - RS Cell Variants

Classic RS Cell  Lacunar Cells  Mummified Cell

Hsi ED and Golblum JR. Foundations in Diagnostic Pathology: Hematopathology. 2nd Ed. 2012
CHL - Immunophenotype

CD45

CD3

CD20

Pax-5

CD30

CD15
CHL - Histologic Subtypes
Nodular Sclerosi

- Architecture is effaced by prominent nodules separated by **dense bands of collagen**.
- Mixed inflammatory infiltrate composed of T cells, granulocytes, and histiocytes.
- **Lacunar variants** are the predominant form of RS cells.
Mixed Cellularity

- Architecture is effaced by a more diffuse infiltrate without bands of fibrosis.
- Background of lymphocytes, plasma cells, histiocytes and eosinophils.
- Approximately 75% of cases are positive for EBV-encoded RNA or protein (LMP1)
Lymphocyte Rich

- Architecture is effaced by a nodular to vaguely nodular *infiltrate of lymphocytes*.
- Nodules may contain regressed germinal centers.
- The *majority of background, non-neoplastic lymphocytes are B cells*; T cells form rosettes around neoplastic cells.
- Granulocytes and histiocytes are rare.
Lymphocyte Deplete

• Architecture is effaced by disordered fibrosis and necrosis.

• Paucity of background inflammatory cells.

• RS cells are characteristically pleomorphic and may be rare or abundant.
Nodular Lymphocyte Predominant Hodgkin Lymphoma

• Nodal architecture is effaced by large nodules with residual germinal centers compressed toward the periphery.
• Neoplastic B cells take the form of LP or “popcorn” cells.
• The majority of background, non-neoplastic lymphocytes are B cells; T cells form rosettes around neoplastic cells.
• Immunophenotype reflects maintenance of the B cell repertoire.
Follicular dendritic meshwork is expanded imparting the nodular pattern.
NLPHL – LP Cells

"Popcorn" Cell
CD20

- Neoplastic cells are positive and rimmed by negative T cells
- Most of the background lymphocytes are B cells
- “Moth-eaten” appearance on low power
NLPHL - Immunophenotype

CD3

Pax-5

CD30

EMA