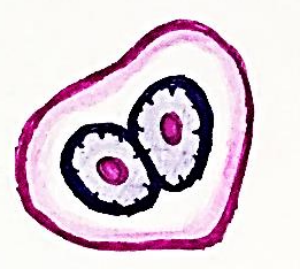


REED –STERNBERG CELL

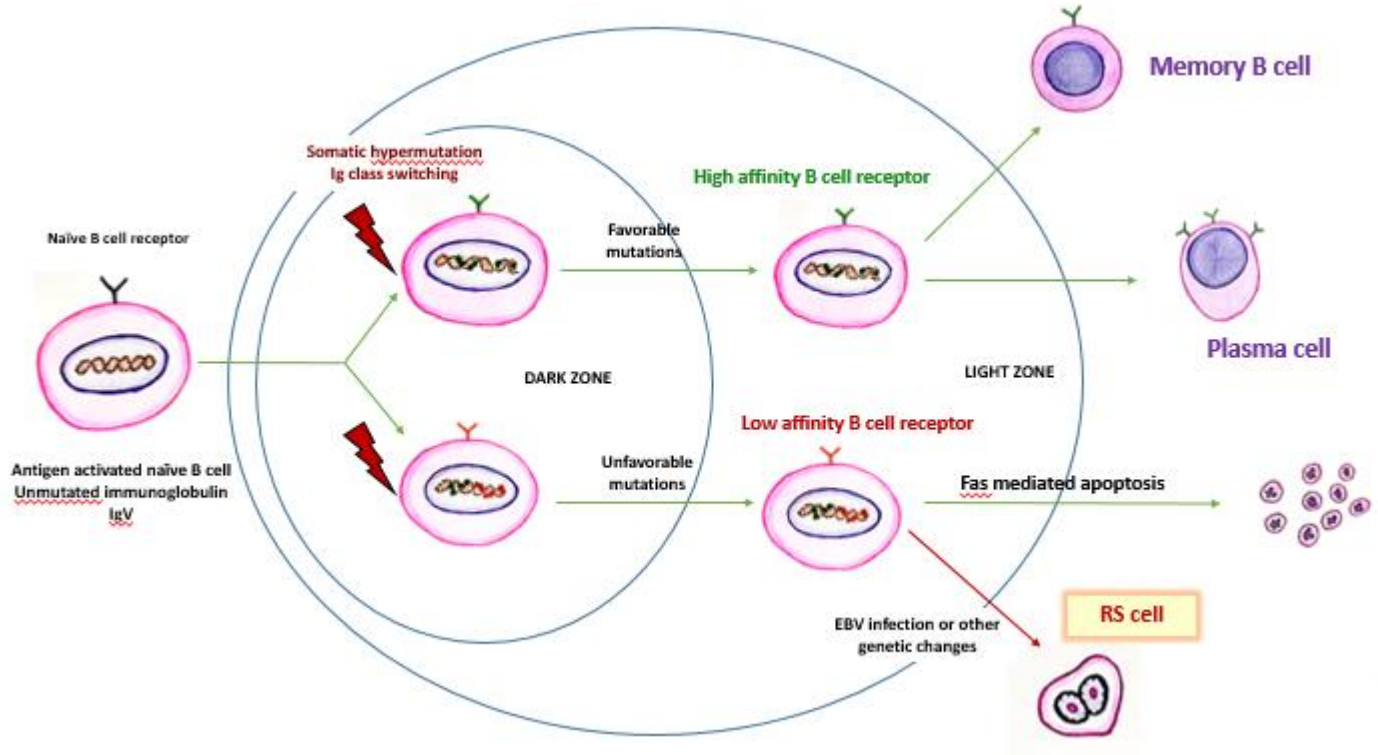
DR.V.SHANTHI

ASSOCIATE PROFESSOR, PATHOLOGY

SRI VENKATESWARA INSTITUTE OF MEDICAL SCIENCES, TIRUPATHI

REED –STERNBERG CELL

- RS cell is the neoplastic cell in Hodgkin lymphoma
- Derived from crippled Germinal centre B cells that cannot express immunoglobulins
-



REED –STERNBERG CELL

Reed Sternberg cell was named after two physicians who described the RS cell

- **Dorothy Reed Mendenhall – pediatric physician from Johns Hopkins School of Medicine, specialized on cellular pathology.**

- **Carl Sternberg - an Austrian pathologist**

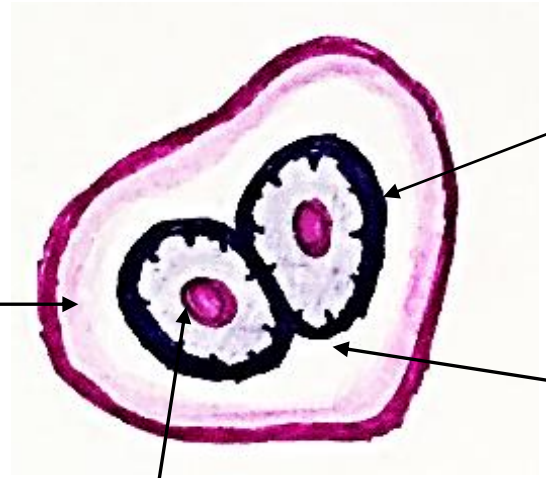
REED –STERNBERG CELL

Morphology (classic RS Cell)

Size – 20 to 60 µ

Nuclei are large with thick nuclear membrane and may be multiple or single with multiple

Cytoplasm - variable amount of eosinophilic to amphophilic cytoplasm



Two nuclei appearing as **'mirror images'** may be present

Each nuclei or nuclear lobe has **single prominent eosinophilic nucleolus (5µ -7µ)** (some times called **'owl eye'** nucleoli)

REED –STERNBERG CELL

Immunohistochemistry

- **Classic RS cell exhibit CD 15 and CD 30 markers which indicate that these are of B cell origin (but are negative for CD 20 and CD 45)**
- **Lympho histiocytic variant – CD 20 positive (but CD15 and CD30 negative)**
- **They also exhibit EBV RNA, suggesting the possible role of EBV in development of HL**

REED –STERNBERGS CELLS

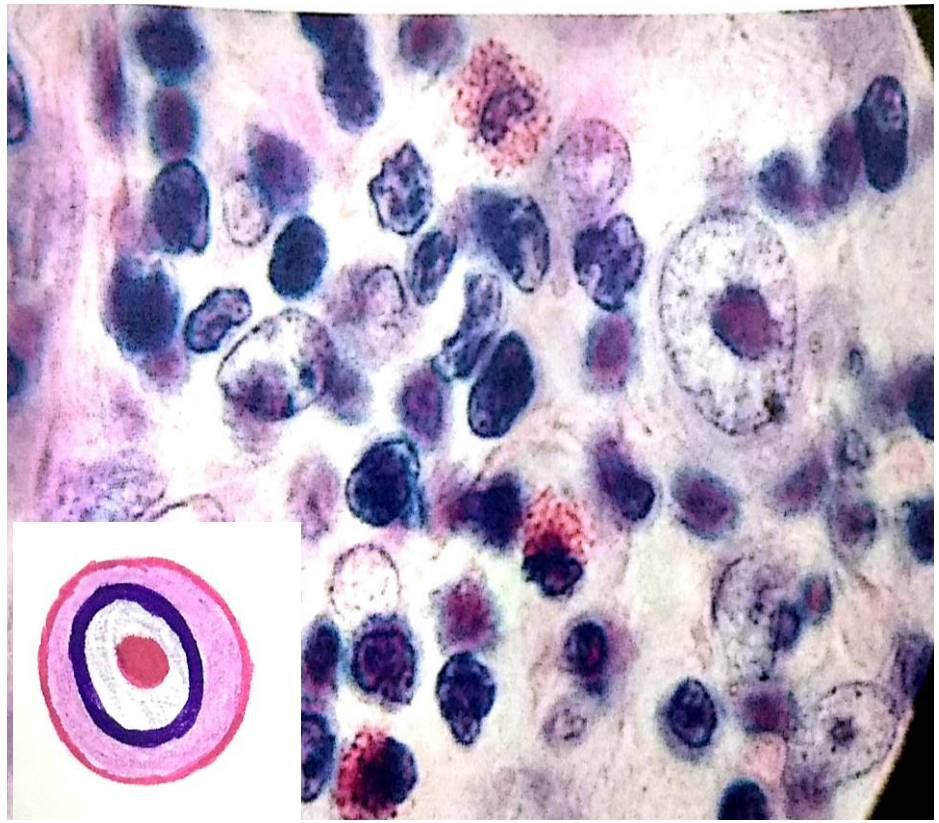
Variants of R-S cells are

- Mononuclear R-S cell/ Hodgkin cell
- Lacunar variant
- Lympho histiocytic variant (L and H cells or popcorn cells)
- Pleomorphic and Anaplastic variant
- Mummified cell variant

REED –STERNBERG CELL

Mononuclear R-S cell/ Hodgkin cell

- Characterized by large size, ovoid shape, indistinct cell borders
- **Nucleus** - Single vesicular nucleus with parachromatin clearing
- **Nucleoli** - Large eosinophilic nucleoli (>1/3rd diameter of nuclei)
- **Cytoplasm** - Moderate amount of eosinophilic cytoplasm
- **Seen mostly in classic Hodgkin lymphoma**



REED –STERNBERG CELL

Lacunar variant of R-S cell

- **Nuclei - Single to multilobated nuclei**
- **Nucleoli - small nucleoli which is <1/3rd diameter of nuclei and shows parachromatin clearing**
- **Cytoplasm – abundant pale or water clear**
- **Lacunar affect is produced when formalin fixation causing the cytoplasm to collapse, creating and artefactual space between retracted cytoplasm and cell margin**
- **Shrinkage of the cytoplasm gives appearance of nucleus lying within a clear space or lacuna**
- **Characteristic of Nodular Sclerosis type of HL**

REED –STERNBERGS CELLS

Lymphohistiocytic variant (Popcorn cell variant)

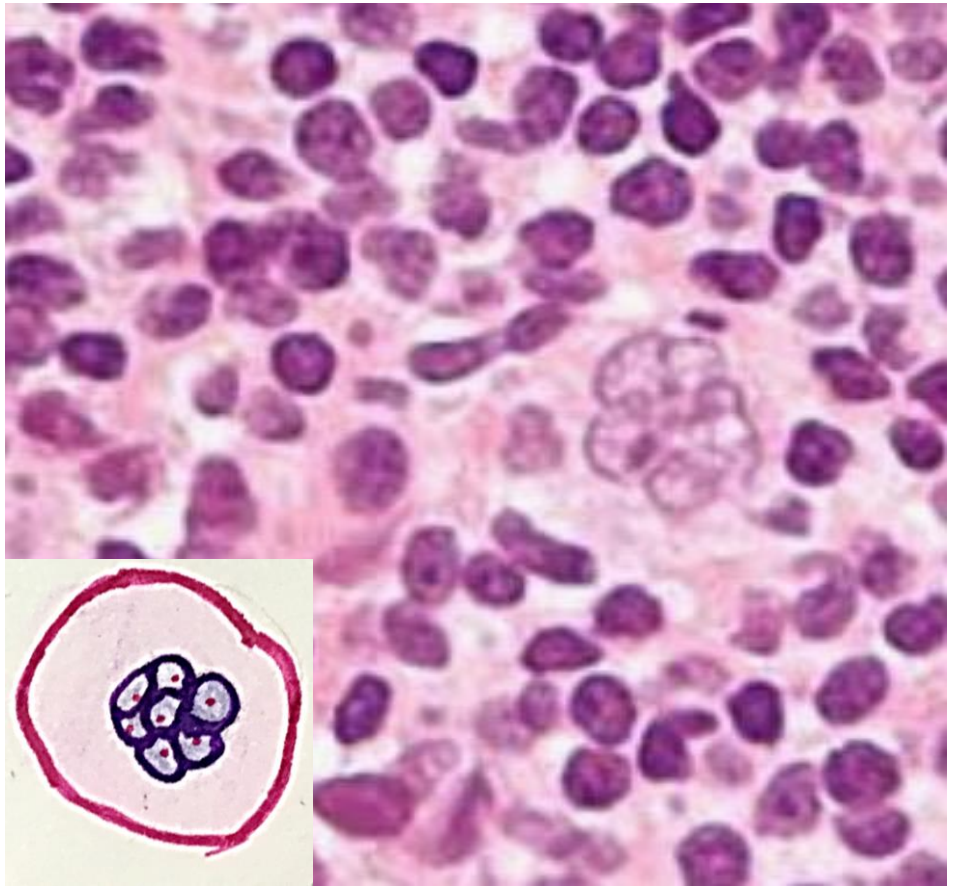
Nuclei - polypoid lobulated nuclei resembling popcorn kernels

Nucleoli - inconspicuous or small punctate nucleoli

Cytoplasm - moderate to abundant cytoplasm

IHC – express CD 20 marker and are negative for CD15 and CD30 which are positive in classic RS cell

Characteristic of Lymphocyte predominant type of HL

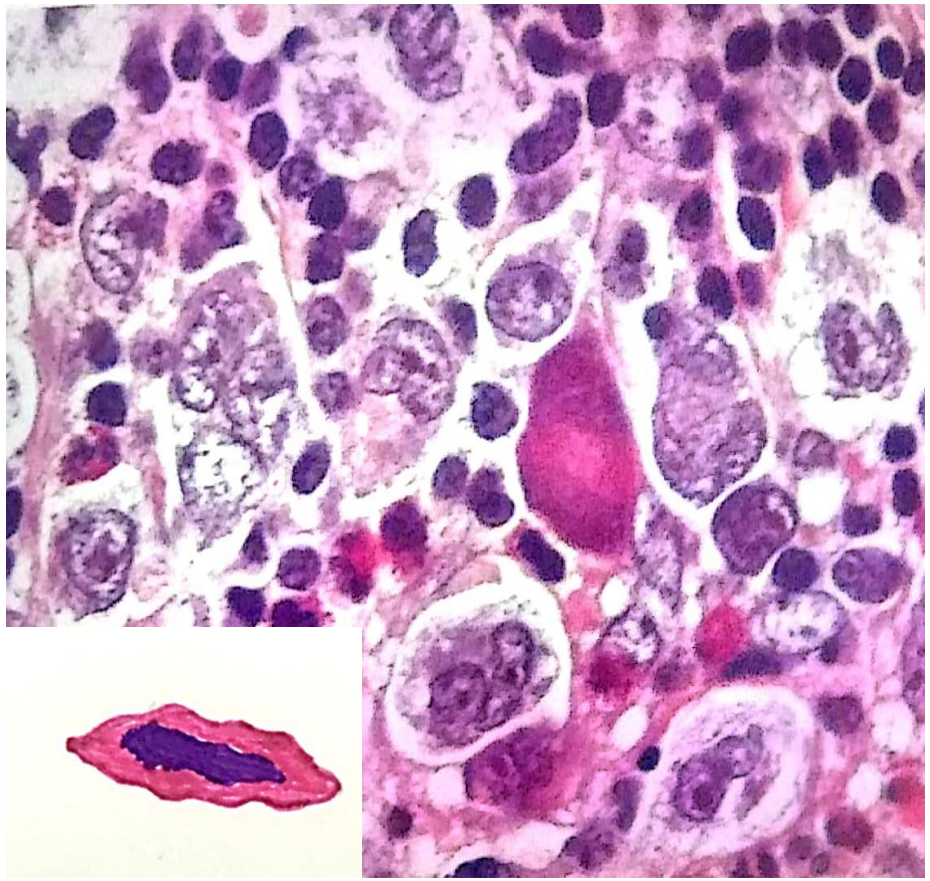


REED –STERNBERG CELL
Pleomorphic or anaplastic variant

- Commonly seen in Lymphocyte depleted HL
- Cells are large and highly pleomorphic having coarse chromatin and hyperchromatic, bizarre, polypoid nuclei with prominent nucleoli

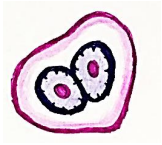
REED –STERNBERG CELL
Mummified cell variant

- It is degenerated or apoptotic R-S cell that may occur singly or in clusters
- These cells are large, with darkly staining eosinophilic cytoplasm and a dense pyknotic nucleus that sometimes has nucleolus
- Not diagnostic of any specific type of Hodgkins lymphoma



SUMMARY

REED –STERNBERG CELL VARIANTS



Classic RS cell

Mononuclear R-S cell
(classic Hodgkin lymphoma)

Mummified cell variant

Lacunar variant
(Nodular Sclerosis)

Pleomorphic or anaplastic variant
(Lymphocyte depleted)

Lymphohistiocytic variant
(Lymphocyte predominant)

RS cell – CD15 & CD30 +ve (CD20 & CD45 –ve)
Lympho histiocytic variant – CD20 +ve (CD15 & CD30 –ve)


Thank you