

Lymphoid Neoplasia & Hodgkin's Disease

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Lymphomas

- Are neoplasms of lymphoid cells.
- Classified as:
 - Hodgkin Disease (30%)
 - Non-Hodgkin lymphoma (70%).
- **There are no benign lymphomas!**

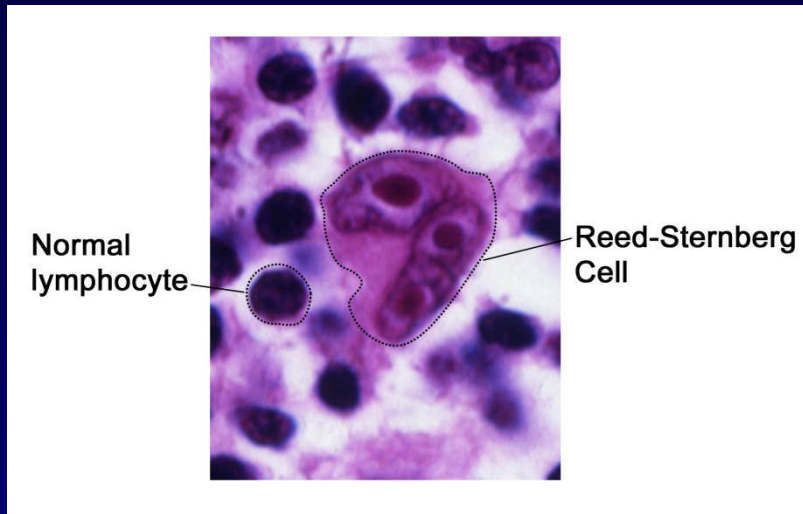
Hodgkin Disease

- Comprises several closely related lymph node disorders that resemble lymphoma.
- Areas of involvement: neoplastic process involves contiguous lymph nodes (suggest local spread).
- Usually neck & mediasternum.
- Waldeyer ring of nasopharynx & extra-nodal tissues rarely involved.

HD: pathological findings

- Affected nodes show:
- inflammatory response to tumour cells.
- Infiltrates of other cells – lymphocytes, plasma cells & eosinophils.
- Reed-Sternberg cells (large binucleated cells that resemble owl eyes) are basis of pathologic diagnosis. These cells are surrounded by other cells.
- These “other cells” follow 5 histological types.

Reed Sternberg Cell in HL



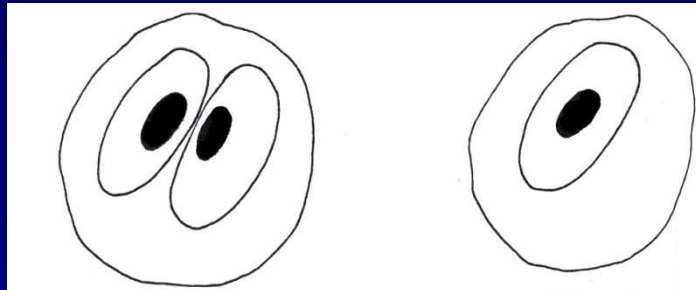
Ref: wikipedia



Ref:
www.studyblue.com

Source: Lichtman MA, Kipps TJ, Seligsohn U, Kaushansky K, Prchal JT:
Williams Hematology, 8th Edition: <http://www.accessmedicine.com>
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Reed-Sternberg cells (and variants) are large cells with very striking “inclusion-like” eosinophilic nucleoli. Try and identify them using the following diagram:



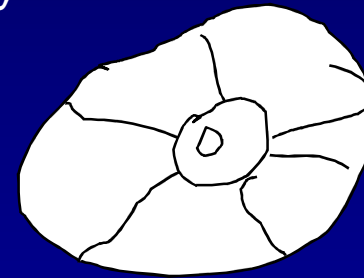
“Classic”
Reed-
Sternberg
cell



Hodgkin cell
(mononucle
ar variant)



The lacunar cell variant has a folded or multilobulated nucleus lying within a clear space with fine pink bands radiating outwards from the nucleus; the latter are artifacts caused by shrinkage of the cell during processing in the laboratory.



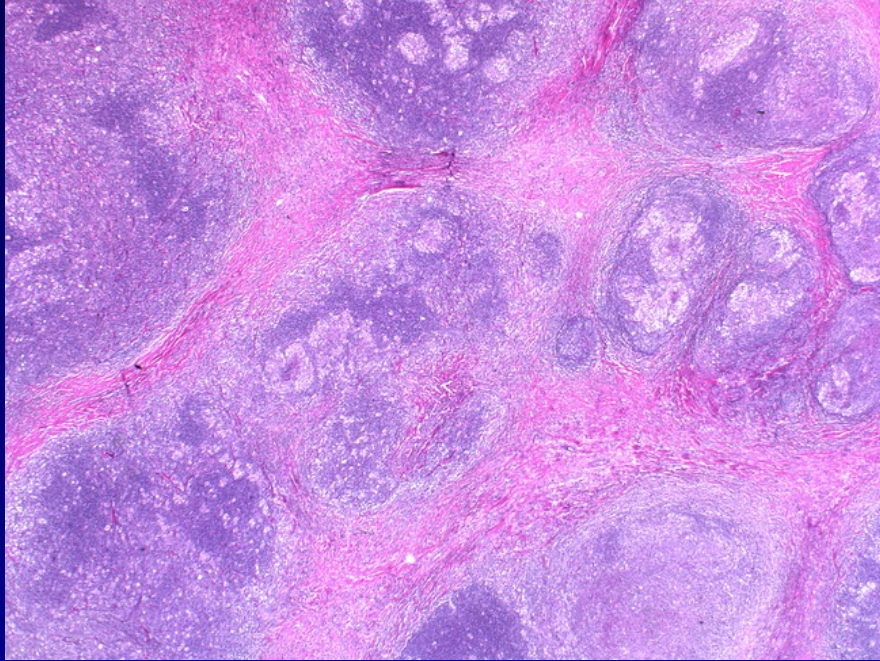
lacunar cell



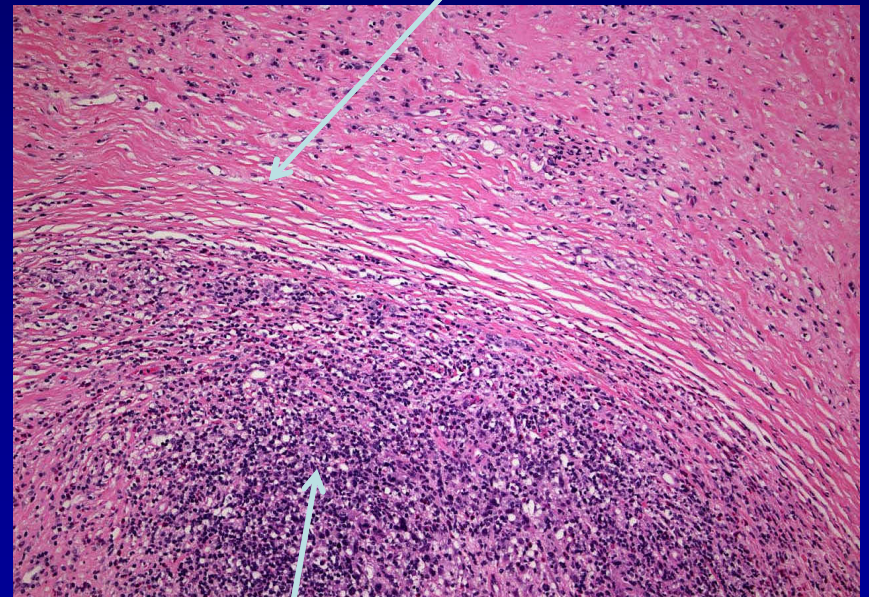
The 5 histological types of HD

- Nodular sclerosis – most common form.
- Lymphocyte predominance.
- Lymphocyte depletion.
- Mixed cellularity.
- Lymphocyte rich.

Nodular sclerosing HL



Ref: www.webpathology.com



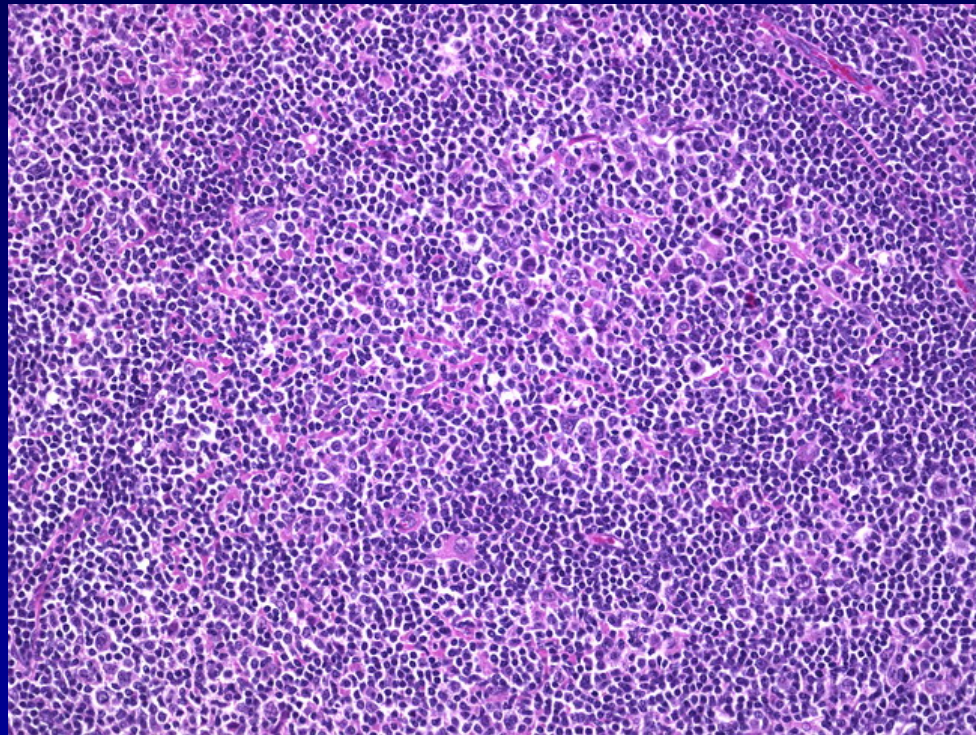
collagenous fibrous
issue

mixed ... non-neoplastic
inflammatory cells

Ref: UTAS

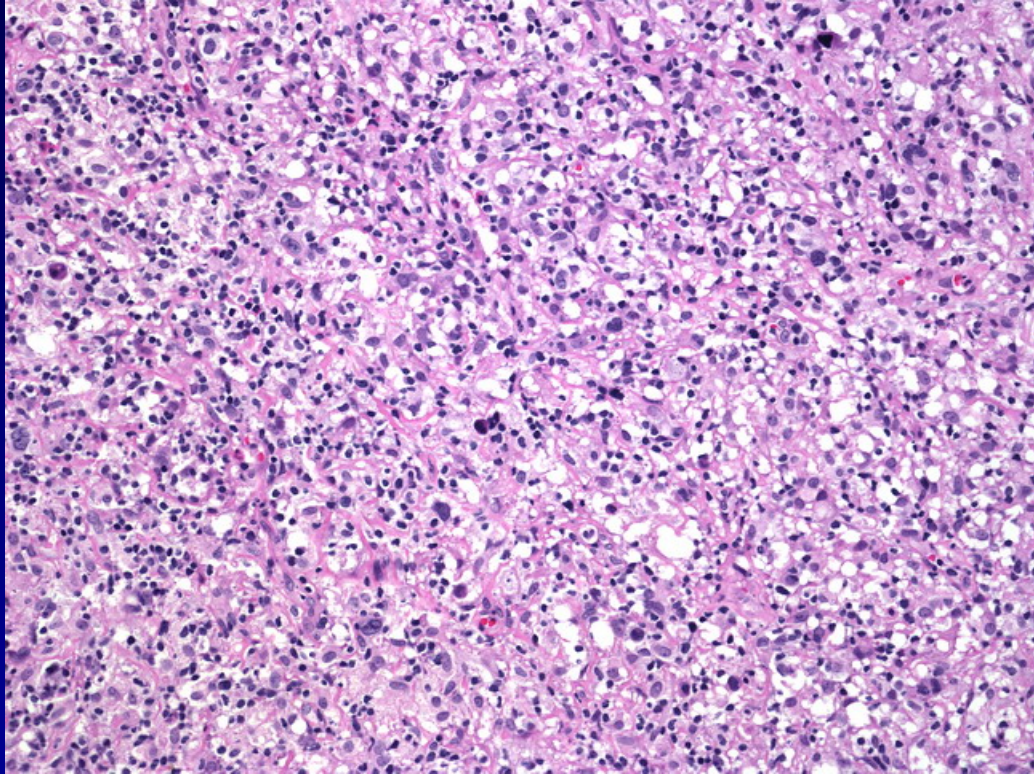
Lymphocyte Predominant HL

Few RS cell, eosinophils, plasma cells few. Increased lymphocytes.



Ref: www.webpathology.com

Lymphocyte Depletion HL



Many RS cells,
few lymphocytes

Ref: www.webpathology.com

Mixed Cellularity HL

Clinical Features HL

-

Hodgkin's Disease/Lymphoma

Clinical Presentation

SIGNS & SYMPTOMS

% OF PATIENTS

Lymphadenopathy

90

Mediastinal mass

60

“B” symptoms

30

Fever, weight loss, night sweats

Hepatosplenomegaly

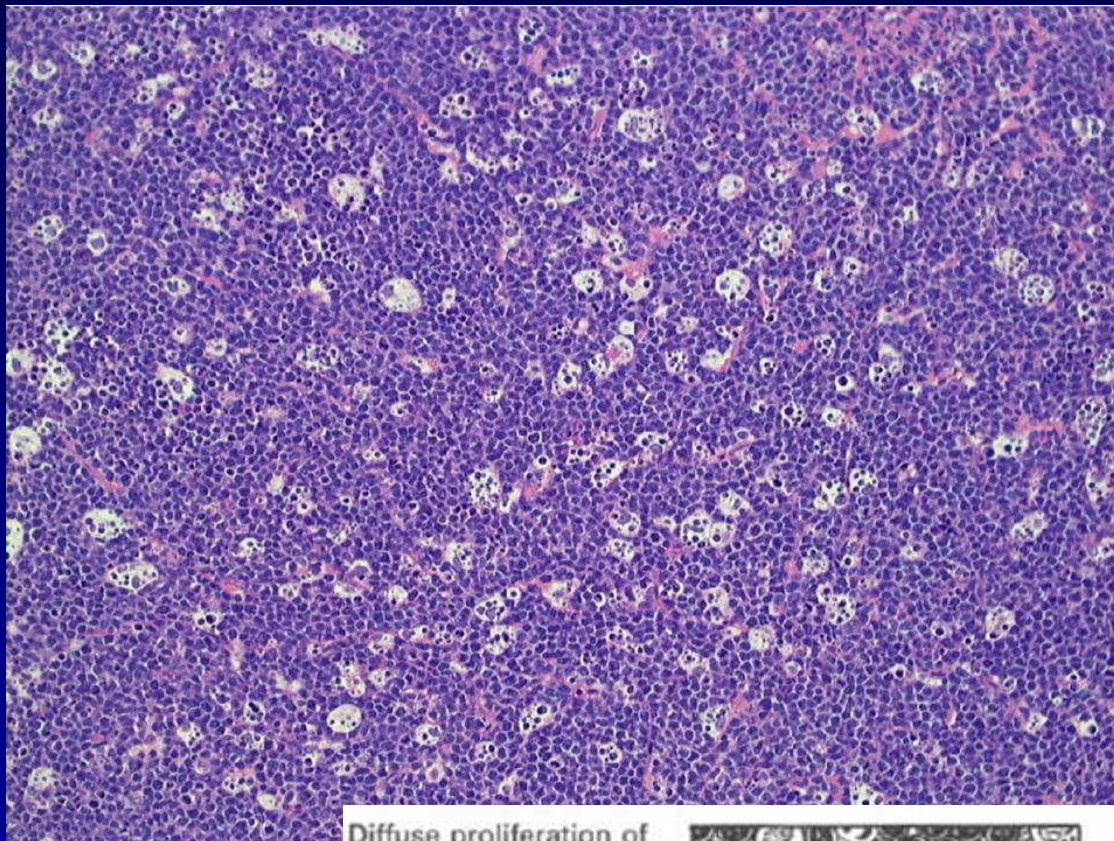
25

- Most commonly involved lymph nodes are the cervical and supraclavicular in 75%
- Bone marrow is involved in 5% of patients

Burkitt lymphoma in PNG

- 50% of all childhood lymphomas
- 13% of all childhood malignancies
- The median age was 6 years.
- Male:female ratio was 8:1.
- Facial structures were the most commonly affected sites 58% cases, followed by spinal involvement in three.
- The majority (89%) of patients came from malaria-holo-endemic, coastal PNG and three were from the highland region.

Burkitt Lymphoma “starry sky”



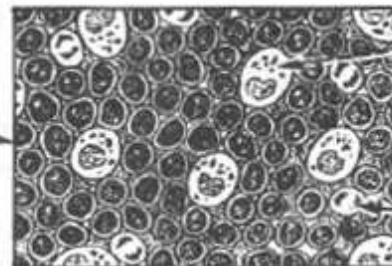
Malignant cells are blue

Empty spaces are the “stars”.

Ref: usmleforum.com

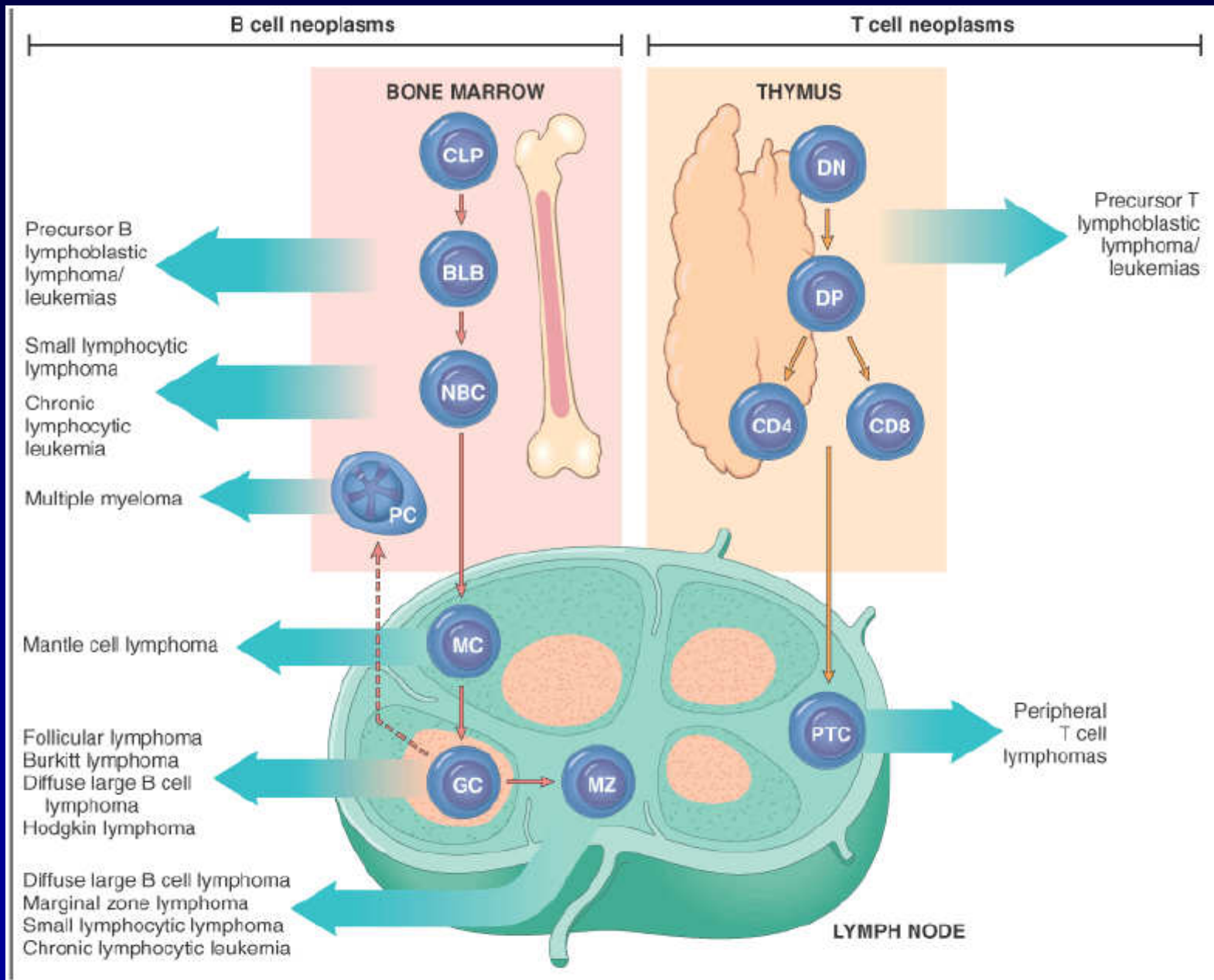
Diffuse proliferation of lymphoblast-like B type cells (with surface Ig markers).

Cells medium-sized and uniform



Scattering of macrophages containing debris derived from very rapid cell turnover – contributing ‘starry sky’ appearance.

Mitoses frequent



Origin of B & T cell neoplasm. Ref: Robins Pathological Basis of Diseases, 7th.

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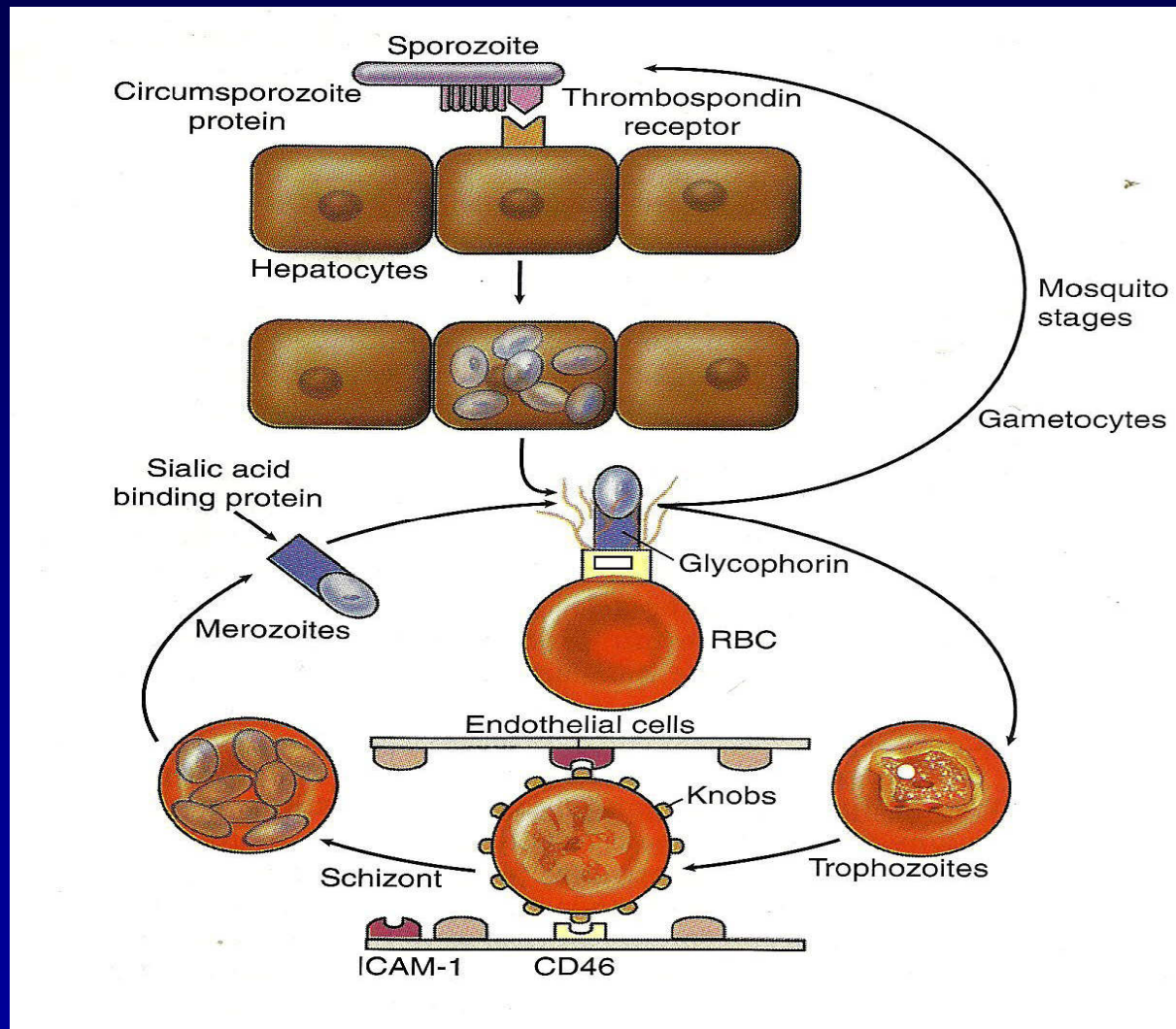
- ARF- mediated thro' several mechanisms

1. Effect of pRBC on microcirculation- knob like processes formation on surface of RBC which helps in anchoring to the endothelium

Cytoadherence- due to thrombospondin formation from vascular endothelium- specific to pf (not in pv/pm) so ARF only in pf.

Loss of deformability of pRBC according to need of microcirculation- sluggish circulation- renal ischemia

Mechanism of cytoadherence



Ref: Robins Pathological Basis of Diseases, 6th Ed.

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2. Hypovolemia may occur due to Fever (hyperpyrexia), sweating, decreased intake of fluid, vomiting etc.
3. DIC
4. Increased plasma viscosity due to infection
5. Release of chemical mediators- TNF, cachectin, cytokines, interleukines etc causes- vasoconstriction, increased vascular permeability, catecholamine release (SIADH) hemoconcentration, shock & tubular necrosis
6. Hyperbilirubinaemia due to hemolysis, Black water fever in G6 PD deficiency patients is also associated with ARF

Laboratory Diagnosis & Monitoring

- Blood slide
- As in ARF (BUN, etc..)
- Bilirubin
- Urine output monitoring

End

Main Reference: Robins Pathological Basis of Diseases, 6th Ed. Chapter on renal failure and infectious diseases.

Others (www): Deb Goldstein teaching slides, 2005.

Cherelle Fitzclarence teaching slides, 2010

Dr Saroj K Mishra & Dr Kishore C Mahanta, teaching slides, India.

Download seminar notes on:

www.pathologyatsmhs.wordpress.com

File in PDF and PPT format