Malignant Tumors of Connective Tissue-III

DEPT OF ORAL PATHOLOGY & MICROBIOLOGY

Purpose Statement

- At the end of the lecture student should be able to Describe classification, incidence, etiology, clinical features, histopathological features of hodgkin's lymphomas.
- describe Classification, incidence, etiology of Non-Hodgkin's lymphoma.

Learning Objectives

No.	Learning Objectives	Domain	Level	Criteria	Condition
	Enumerate clinical features	Cognitive	Must Know	All	
	Write classification	Cognitive	Must Know	All	
	Write pathogenesis	Cognitive	Must	All	

Contents

- Lymphomas
- Hodgkin’s lymphoma
- Non-Hodgkin’s lymphoma

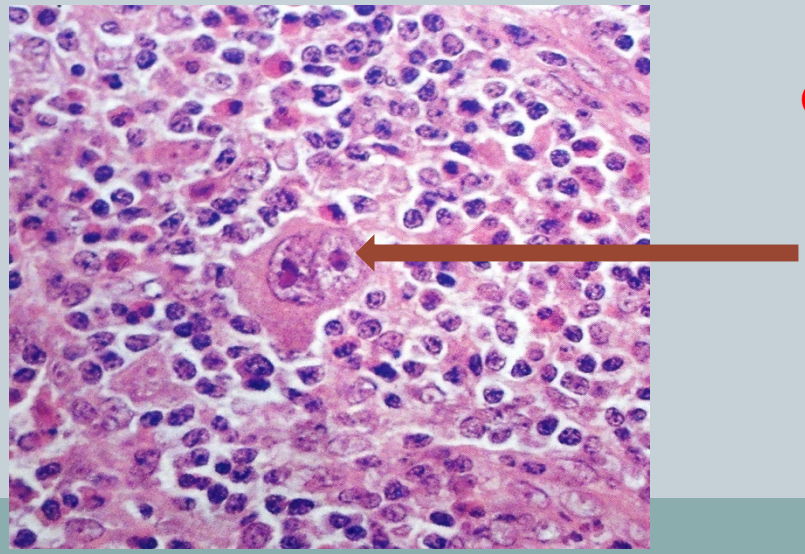
LYMPHOMAS

- Malignant solid tumor involving cells of the lymphoreticular or immune system such as B-lymphocytes, T- lymphocytes & monocyte

- Almost always begins in the lymph node but may be 1st diagnosed in the extra nodal lymphatic tissue, where normal tissue is replaced by malignant lymphocytes.

Hodgkin's lymphoma

- First described by **Thomas Hodgkin** in 1832
- **Orderly involvement** of lymph nodes group with the development of systemic symptoms as disease progress
- Pathologically, the disease is characterized by the presence of **Reed Sternberg cells**



Owl eye appearance

Etiology

- Infectious agents - EBV
- Acquired Immunodeficiency status
- Genetic predisposition
- Chemical exposure

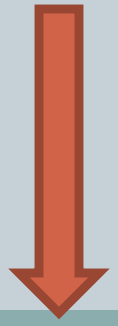
Clinical features

- Bimodal incidence
- First young adulthood (age 15–35)
- Second >55 years old
- M > F
- Whites > Asians
- Lymph node enlargement

Signs & Symptoms

Lymph Nodes

- Painless enlargement of one or more lymph nodes (Cervical, axillary, inguinal,Waldeyer ring)
  Feel **rubbery** and swollen & overlying skin is normal
- Lymph nodes are movable in initial stage



- Matted & fixed to surrounding tissues

- Spreads to other lymph nodes & involves spleen & other extralymphatic tissues, such as bone, liver & lung

- Hepatomegaly, Splenomegaly, Nonspecific back pain.
- Systemic symptoms:

- Night sweats, Unexplained **weight loss** (at least 10% of the patient's total body mass in 6 months or less)
- Itchy skin (pruritis), Lassitude, Alcohol induced pain
- **Pel –Ebstein fever** - cyclical high & low grade fever

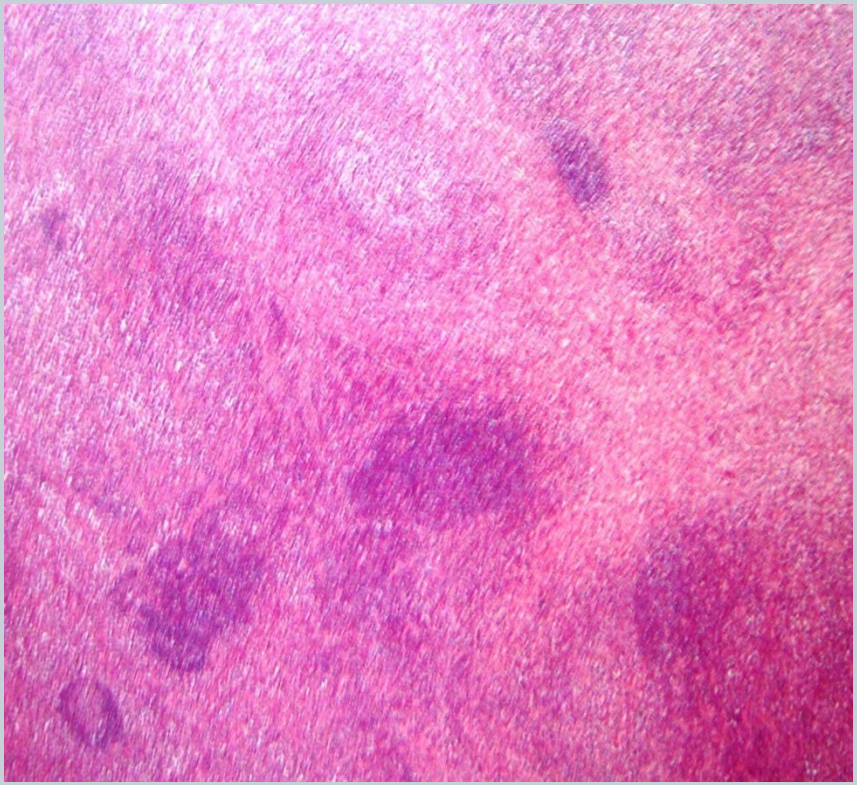
ORAL MANIFESTATIONS: Very rare, as is primarily a disease of lymph nodes

Histological classification by Rye system

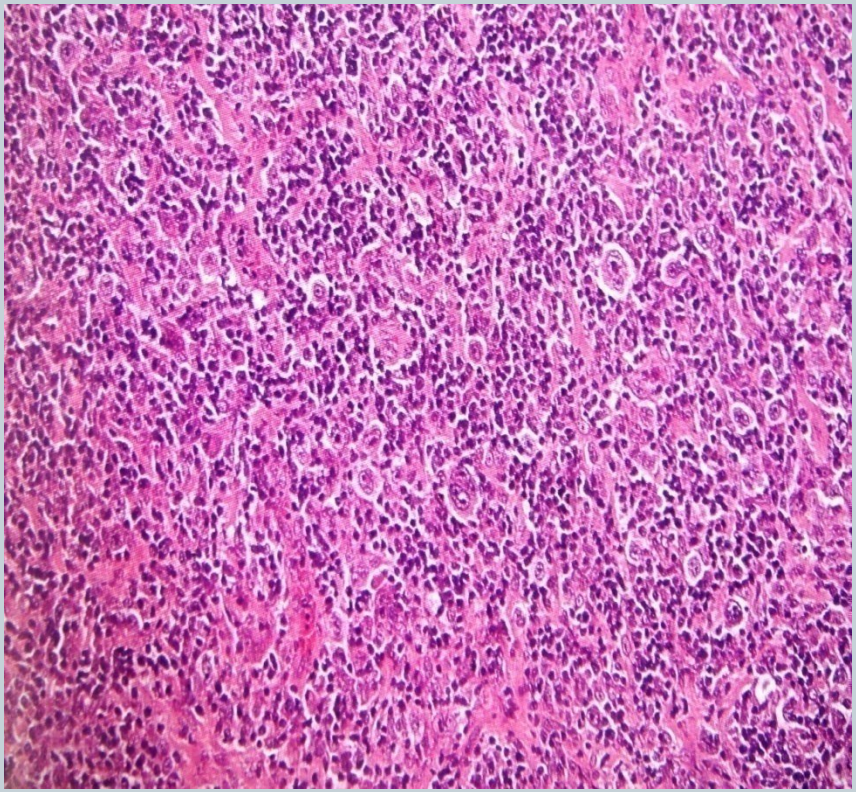
There are different subtypes of Hodgkin's disease:

1. Nodular sclerosis (30–60% of cases)
2. Mixed cellularity (20–40% of cases)
3. Lymphocyte depleted (less than 5% of cases) - worse prognosis
4. Lymphocyte predominant (5–10% of cases) – Best prognosis
5. Nodular lymphocyte predominant (5 %)- *(Popcorn cell ,a variant of RS cell whose nuclei resembles an exploded kernel of corn)*

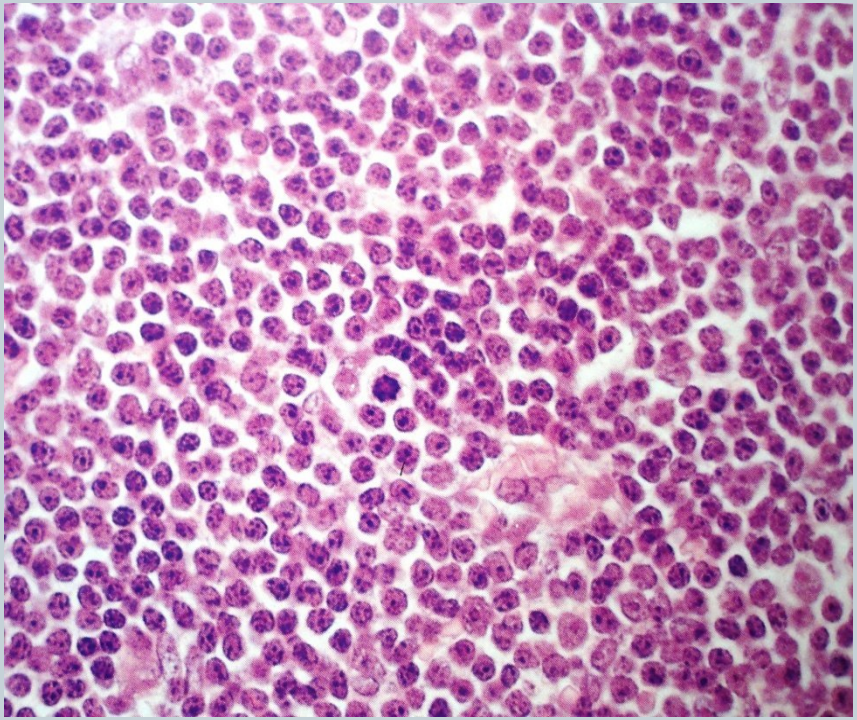
Nodular sclerosis



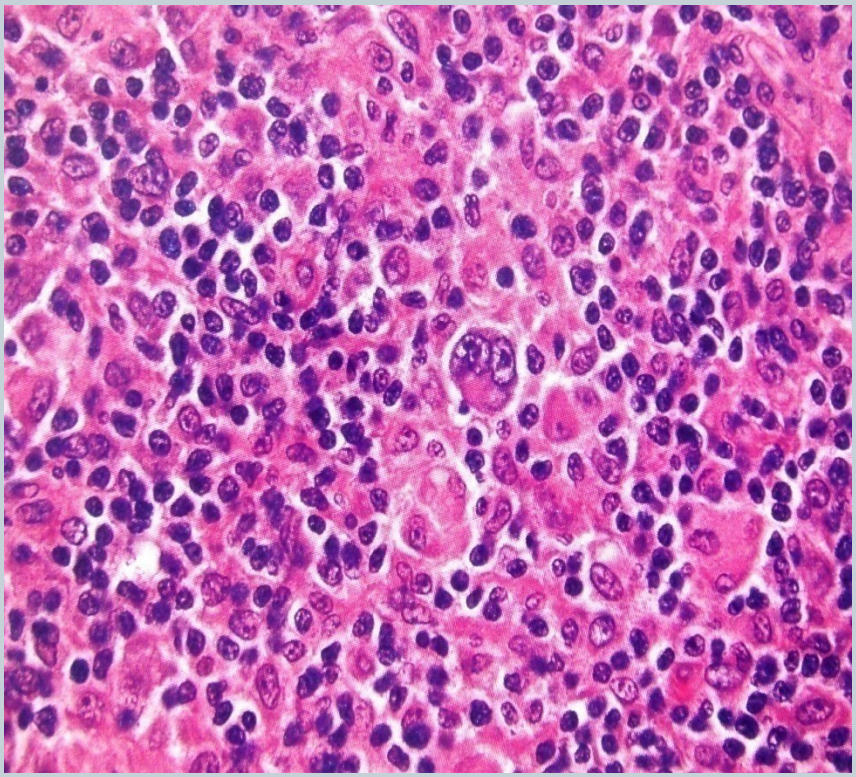
Mixed cellularity

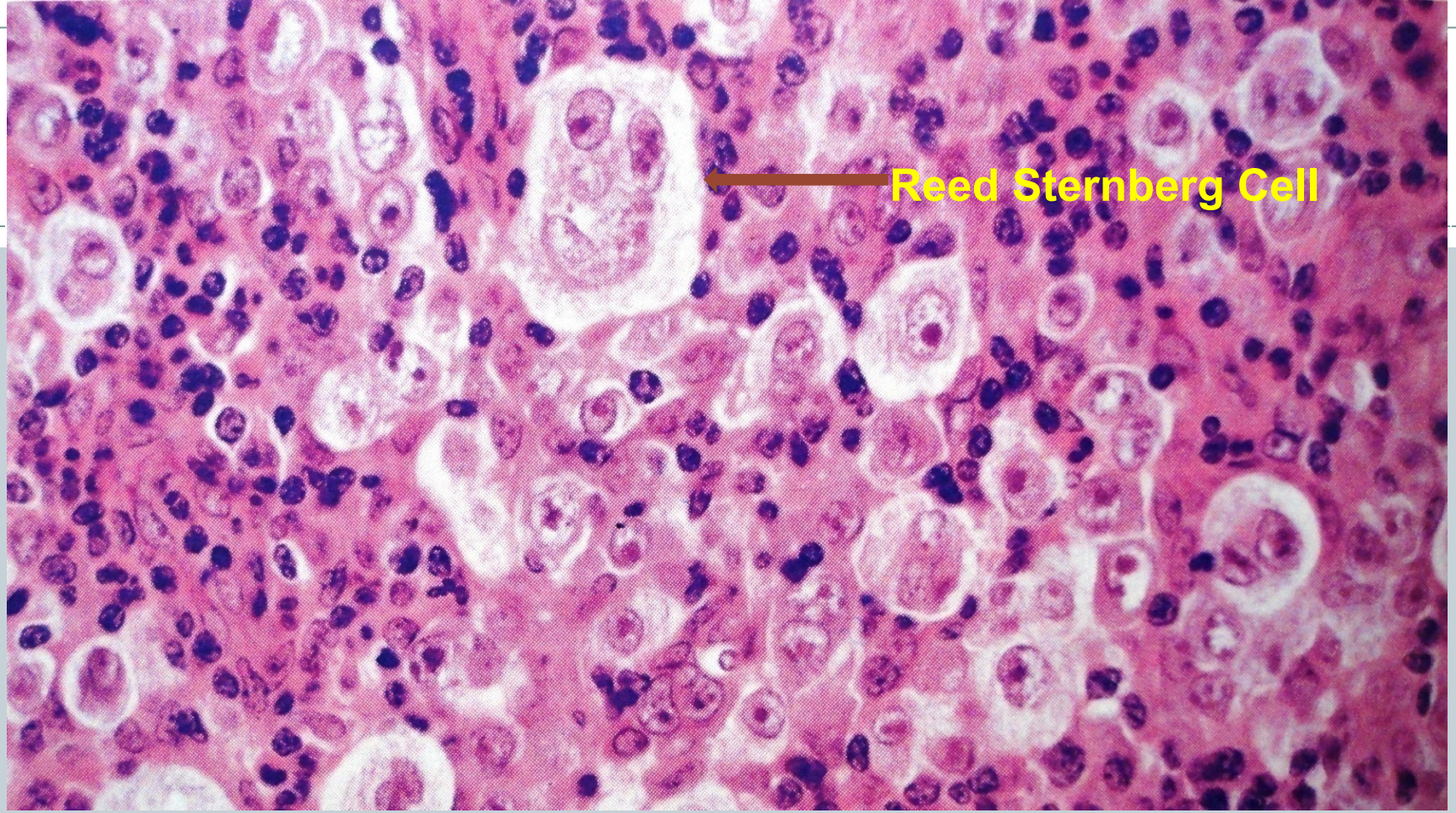


Lymphocyte predominant



Classical HL with characteristic RS cells





- **Reed Sternberg Cell**

-Characteristic malignant cell of HL

-20-50 μm

-Amphophilic ,finely granular,homogenous cytoplasm

-Two mirror- image nuclei (Owl eyes) with eosinophilic nucleolus & thick nuclear membrane

Non-Hodgkin's lymphoma

- Non-Hodgkins lymphoma (NHL) is a heterogeneous disease with variable clinical presentation & course
- NHL arises from B & T lymphocytes but B cell lymphoma are more prevalent (85 %).
- Multicentric & diffuse involvement of lymph nodes, lymphoid organs & extralymphatic tissue
- Lymph nodes of Head & Neck region are commonly involved

Hodgkin's Lymphoma

- Bimodal age
- Mediastinum nodes
- Extranodal in 4%
- Systemic symptoms 40%
- Orderly & slow Progression

Non-Hodgkin's Lymphoma

- > 67 yrs
- Mesenteric nodes
- Extranodal in 23%
- Systemic symptoms 27 %
- Less predictable in their course

Classification

The "**New Working Formulation**" divides lymphomas into three categories –

1. Low grade - Indolent behavior
2. Intermediate - Unfavorable behavior
3. High grade - Aggressive behavior

Low-Grade

A. Small lymphocytic (lymphocytic; plasmacytoid)
B. Follicular, predominantly small cleaved cell
C. Follicular, mixed, small cleaved and large cleaved cell

Intermediate-Grade

D. Follicular, predominantly large cell, cleaved and/or non-cleaved

E. Diffuse, small cleaved cell

F. Diffuse, mixed, large and small cell

G. Diffuse, large cell, cleaved or noncleaved

High-Grade

H. Large cell, immunoblastic -(B- or T-cell type)

I. Lymphoblastic

J. Small noncleaved cell (Burkitt's and non-Burkitt's)

Etiology / Risk factors

- Genetic abnormality
- Acquired Immunodeficiency states
- Infectious agents - EBV, human T-cell leukemia virus), and bacterial infections (e.g., *helicobacter pylori*)

- Physical and Chemical agents -pesticides, solvents, arsenate, and lead, hair dyes, radiation exposure (high dose), and paint thinners may increase the risk.

Clinical Features:

- Age – Older > 50 yrs
- Sex-M>F
- Lymphadenopathy: Painless, persistent enlargement of lymph nodes

Summary

- Lymphomas are solid tumors involving cells of the lymphoreticular or immune system such as B-lymphocytes, T- lymphocytes & monocyte.
- The Reed Sternberg cells are the characteristic cells.
- Differences between Hodgkin's & Non- Hodgkin's Lymphoma.

BIBLIOGRAPHY

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- Robbins basic pathology Kumar vinay, 8th edition

THANK YOU