Malignant Lymphomas

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Malignant Lymphomas

Hodgkin's Lymphoma (HL)

- Described Originally in 1832
  by Sir Thomas Hodgkin's
- Less common than non-Hodgkin lymphoma
- The incidence of HL is bimodal
- Unknown etiology
- Viral factors may play a causal role
  - EB Virus
  - HIV

Cont'n

Malignant Lymphomas

- Clustering of cases in a single household
- ? Other environmental factors ±genetic predisposition play a significant role in the pathogenesis of the disease.

Clinical features

- Superficial Lymphadenopathy
  - Lymph nodes are non tender
  - Rubbery in Consistency
  - Firm, discrete
- Constitutional
  - Fever > (38ºC)
  - Drenching night sweats
  - Loss of more than 10% of usual weight

Clinical features :cont

- Hepatomegaly
- Splenomegaly (50%) pf the patients
- Mediastinal involvement in 6- 10%
- Sings due to infections or anemia.

- Enlarged retroperitoneal lymph nodes may be associated with pressure symptoms.
  e.g. obstruction of the ureters.

- Other Constitutional Symptoms
  - Pruritus
  - Alcohol-induced pain in areas of disease involvement

Diagnosis: Laboratory Tests

- Abnormalities in the peripheral blood
  - Normochromic, normocytic anemia
  - Neutrophilia in 1/3 of patients
  - Eosinophilia
  - monocytosis and lymphopenia
  - Thrombocytosis during early disease, & thrombocytopenia with advanced disease.

Cont'n

Continuation Diagnosis Laboratory Tests

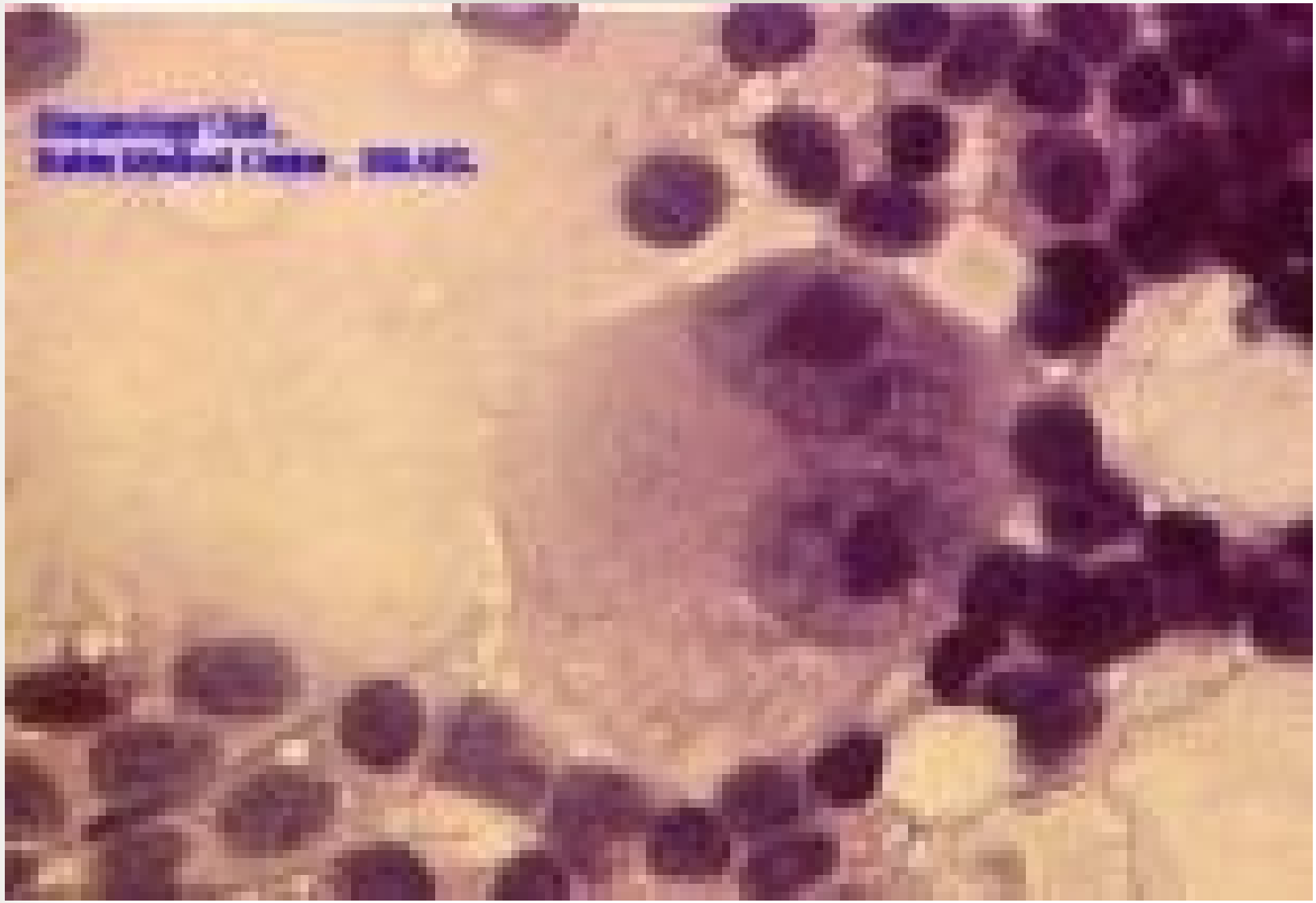
- High acute phase reactant useful in monitoring disease progress e.g.
  - ESR
  - C- reactive protein
  - Ferritin
  - Plasma viscosity

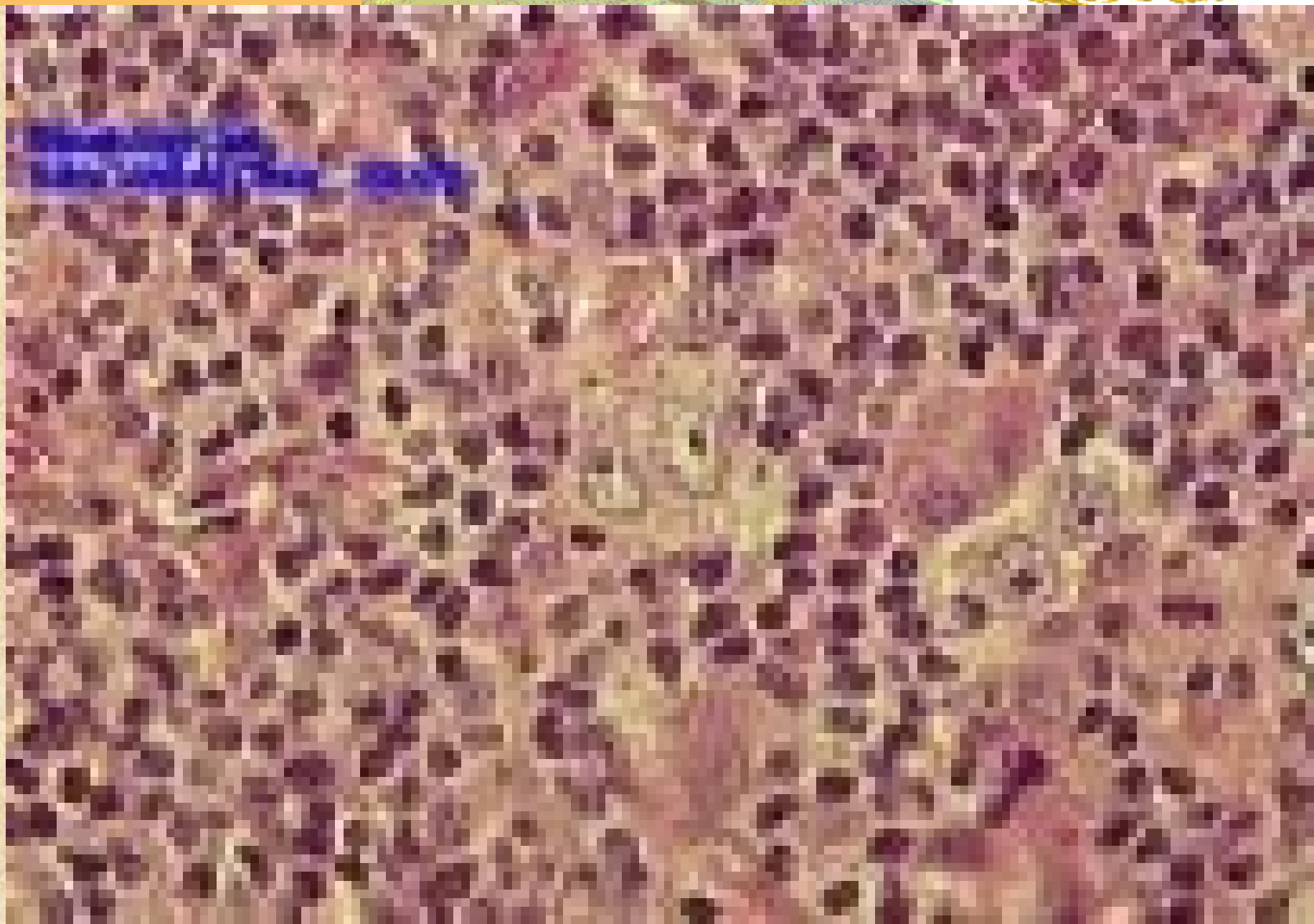
- Liver function test abnormalities

Cont'n

Continuation Diagnosis Laboratory Tests

- Lymph node biopsy
  - Diagnosis is by tissue biopsy
  - The Reed - sternberg cell, the neoplastic cell in a reactive background
- Rye Classification
  - Lymphocyte predominant
  - Nodular Sclorosis
  - Mixed Cellularity
  - Lymphocyte depleted





Staging of the disease
Ann arbor staging system

- Stage-1:involvement of a single lymph node region
- Stage-2: involvement of 2 or more lymph node regions on the same side of the diaphragm.
- Stage-3: involvement of lymph node regions on both sides of the diaphragm.

Cont'n

Continuation of Staging of the disease
Ann arbor staging system

- Stage-4: Diffuse or disseminated involvement

Each stage is further subdivided into

A: Absence of B symptoms

B: Presence of B symptoms

E: Involvement of an extra nodal sites

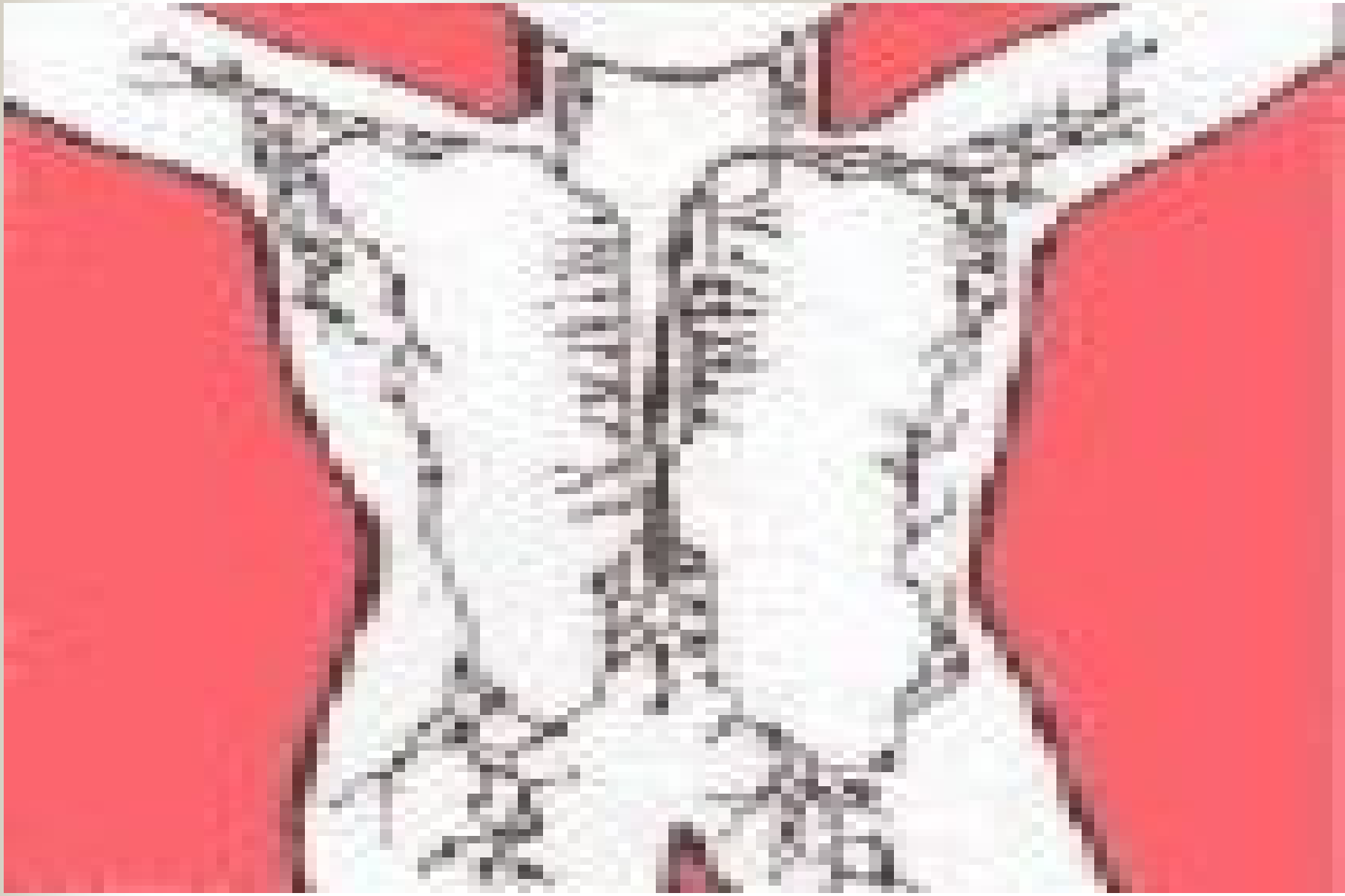
X: Bulky disease > 10cm in any single dimension

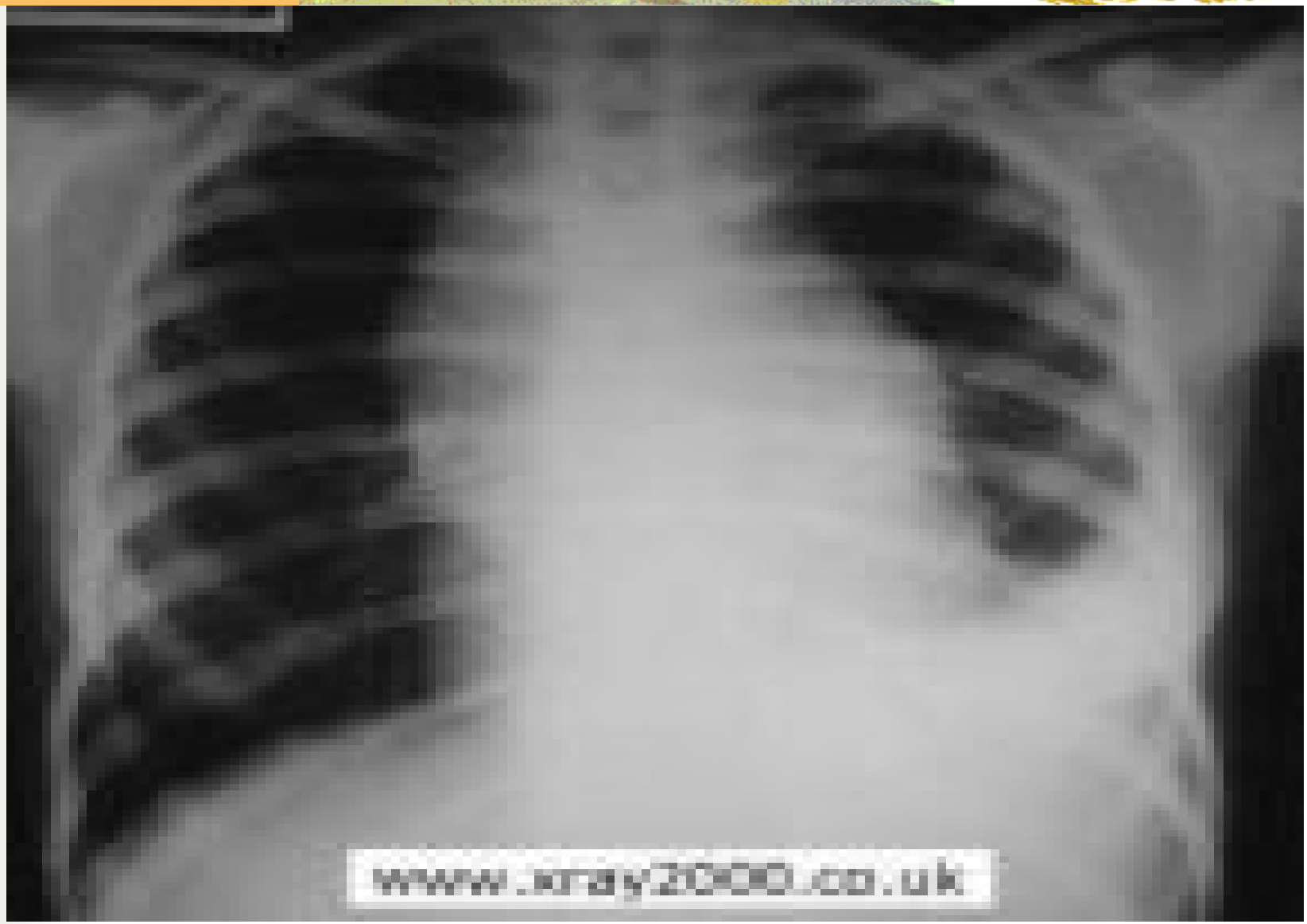
Continuation of Staging of the disease
Ann arbor staging system

- CT Scan of chest, abdomen and pelvis ± neck
- Gallium Scan
- Bone marrow biopsy → in advanced disease is usually positive

  ?? Liver biopsy

  ???? laparotomy




www.xray2000.co.uk

Treatment

- Early stage (HL)
  - Radio-therapy
  - Combined modality treatment
- Advanced Stage (HL)
  - Chemotherapy " ABVD" 6 – 8 cycles
- Relaped Cases
  - Salvage chemotherapy
  - Autologus bone marrow transplantation

Curative Disease

- 5- years survival rate are for stage “1+2” 85%
- 5-Years survival rate are for stage “3+4”60%

Non-Hodgkin's Lymphomas (NHL)

- Mostly of B- lymphocyte origin
- The incidence of this disorder is increasing at an annual rate of 4% for men and 3% for women
- Viruses
  - HTLV-1
  - EB
  - HIV
  - ? Hep-C Virus

Cont'n

Continuation of Non-Hodgkin's Lymphomas (NHL)

- Cytogenetics and Oncogenes
  - **Burkett's Lymphoma ～MYC**
    t (8:14), t (8:22), t(2:8)
- **Immuno Suppression e.g.**
  - **Coeliac Disease**
  - **Dermatitis herpetiform**

- Autoimmune diseases ～ NHL ↑ frequency

Clinical Features

- Peripheral Lymhadenopathy
- Abdominal or mediastinal masses
- C.N.S.or bone marrow involvement
- Waldeyer's rings 15-30 %
- Constitutional symptoms e.g. fever,night sweat, and weight loss
- Anemia, neutropenia, & thrombocytopenia
- Involvement of other organs e.g. skin, brain, testes, etc.

Laboratory Features

- A normocytic, normochromic anemia or autoimmune hemolytic anemia
- Leucopenia and thrombocytopenia
- PBF assessment
  - Lymphoma Cells
- Liver function tests abnormalities
- Elevation of serum creatinine
- High LDH important for diagnosis & prediction of outcome.
- Serum uric acid may be elevated especially when the tumor burden is high.

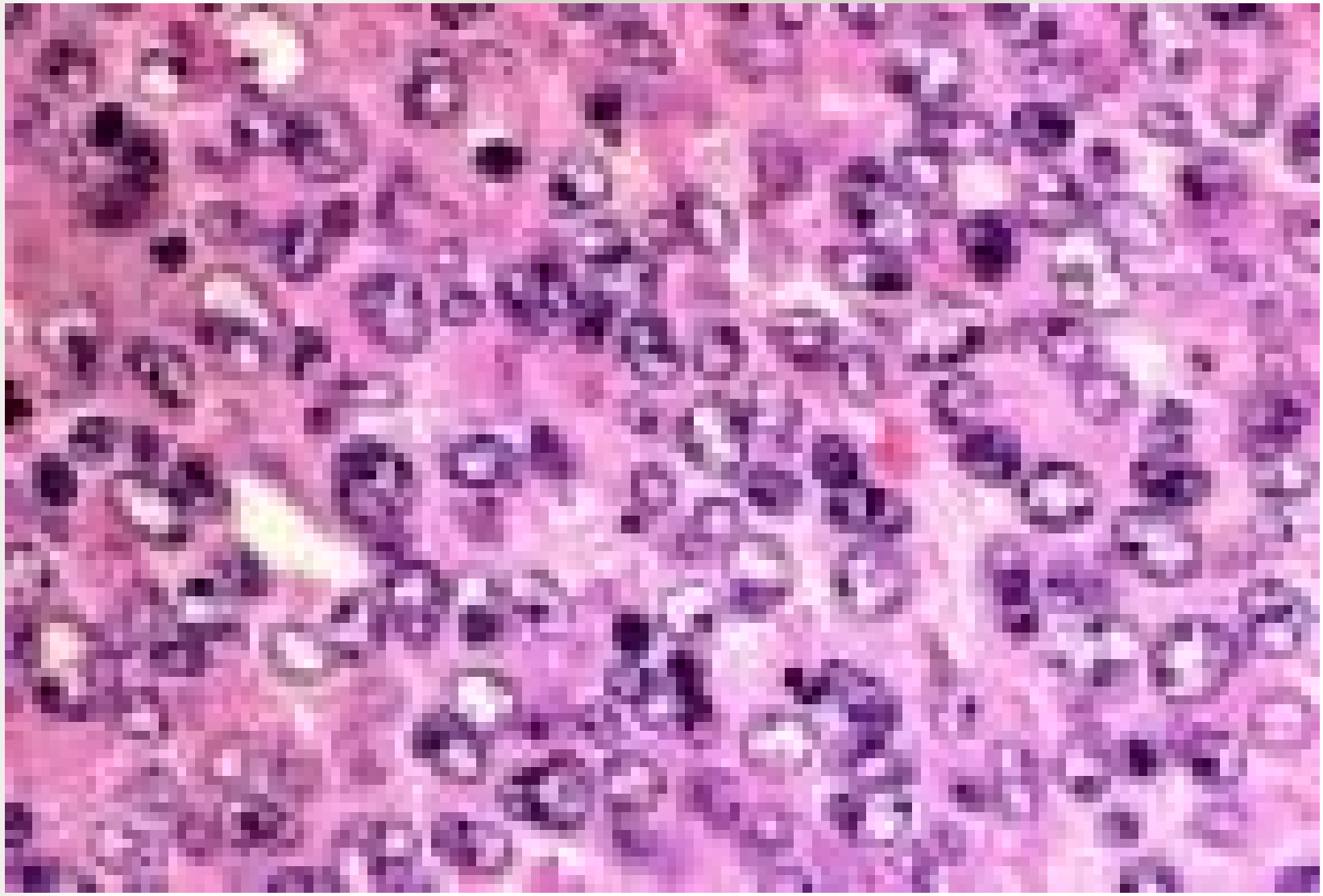
Cont'n

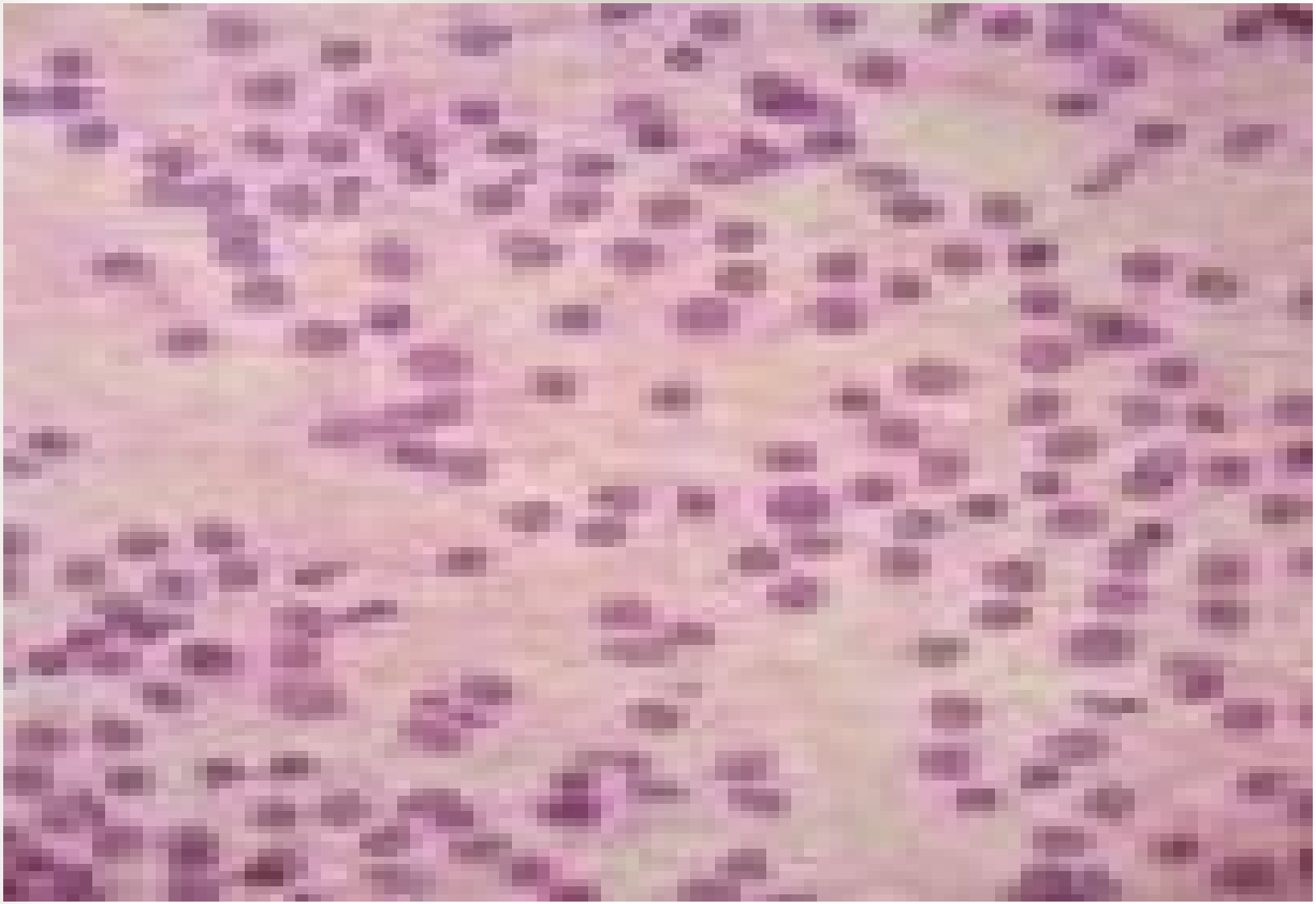
Diagnosis

- adequate tissue biopsy
- immunologic analysis, flowcytometry
- molecular analysis
- Bone marrow aspiration and trephine biopsy

Classifications

- International working formulation
- REAL Classification
- WHO Classification





Staging

- Ann Arbor Staging System

  NHL does not spread by orderly, anatomic pathways

- International Prognostic Index
  - **Age ≤60 or >60 years**
  - **Stage I/II, III, IV**
  - **Number of extranodal sites**
  - **Performance status (0, 1 or 2, 3, 4)**
  - **LDH**

Therapy for patients with indolent lymphoma

Early Stages

I, II

- Uncommon

  Involved fields radiotherapy

  2.5-4Gy

Advanced Stages

- remains controversial
- vast majority of patients are not cured
- for a symptomatic patients, deferred therapy with careful observation
- oral alkylating agent ± steroid

Therapy for patients with indolent lymphoma con

- combination chemotherapy such as CHOP
- purine nucleoside →fludrabine
- anti-CD20 monoclonal antibody → may be considered as first line therapy alone or in conjunction with chemotherapy

- Intensive therapy with chemotherapy and radiotherapy followed by autologus peripheral stem cell transplantation.

Diffuse Large – B-cell lymphoma

Early Stages I & II

- low dose irradiation
- or low dose irradiation and abbreviated CHOP

Advanced Stages II bulky, III & IV

CHOP-R remain the best available standard therapy

(50-85%) CR

cure rate (25-45%)

I. **Doxorubcin (Adriamycin)**

- Inhibits topoisomerase II, produce force radicals, which may cause DNA destruction.

Side effects: - severe heart failure& cardiomyopathy
- impaired cardiac function
- myelosuppression
- extravasation→local tissue necrosis

II. **Vinrestine (oncovin) vinca alkaloid→antimitosis**

Side effects: - hepatic impairment
- neuromuscular dysfunction

III. Cyclophosphamide (cytoxan)

Alkylating agent

- Cross linking of DNA which may interfere with growth of normal and neoplastic cells

Side effects: - myelosuppression

- hemorrhagic cystitis

Iv . Monoclonal antibody Rituximab (375 mg/m^2) infusion over 4-5 hours

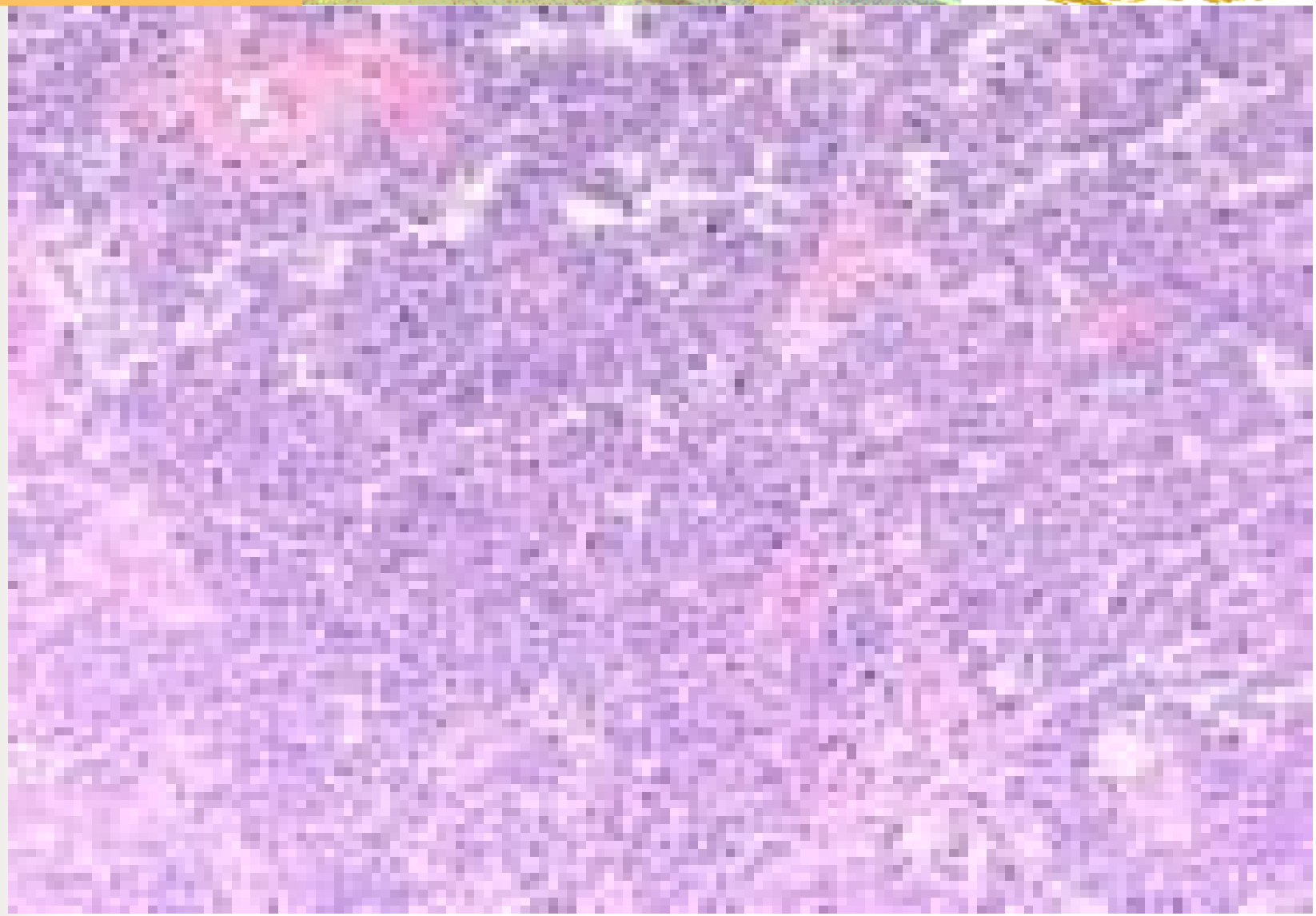
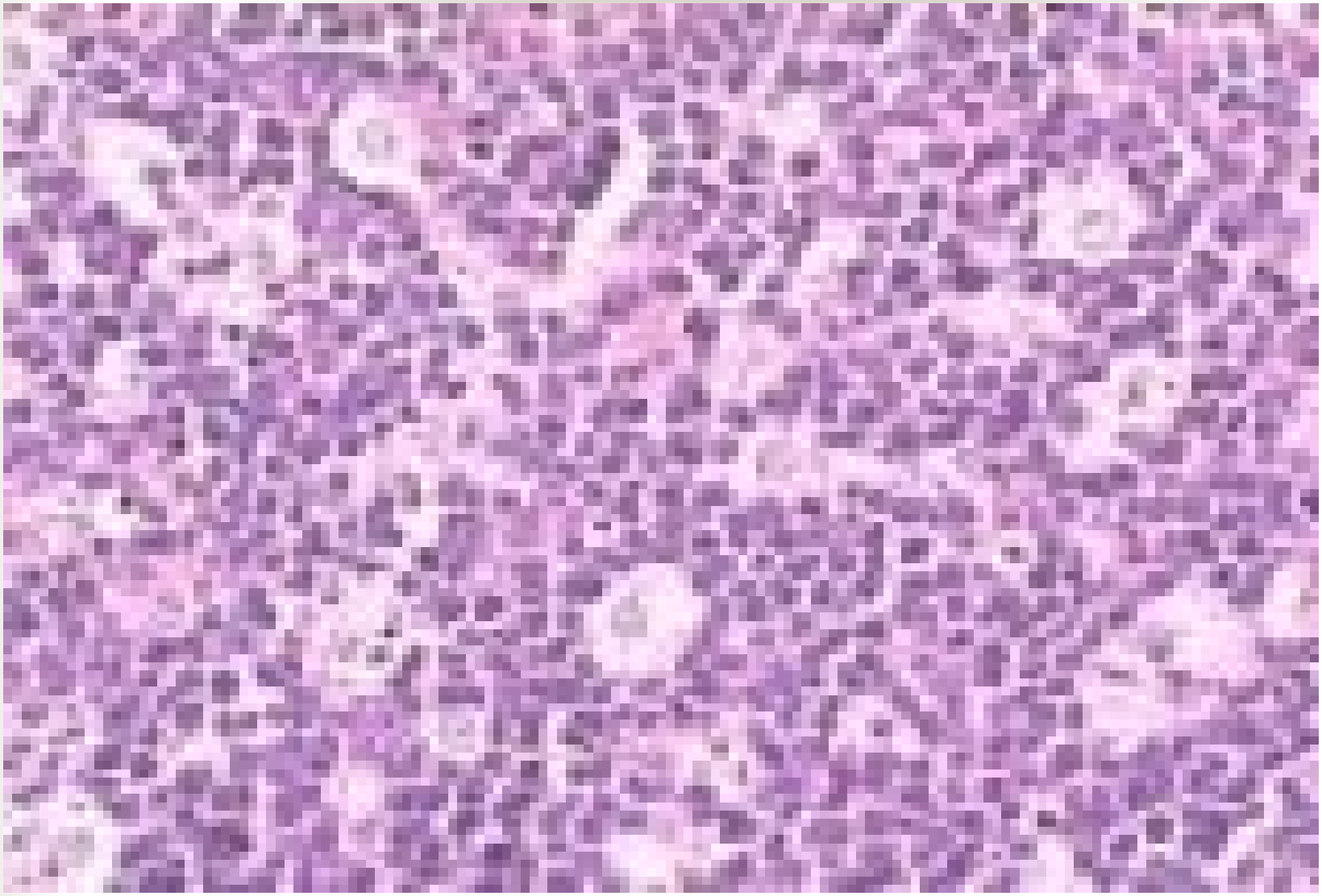
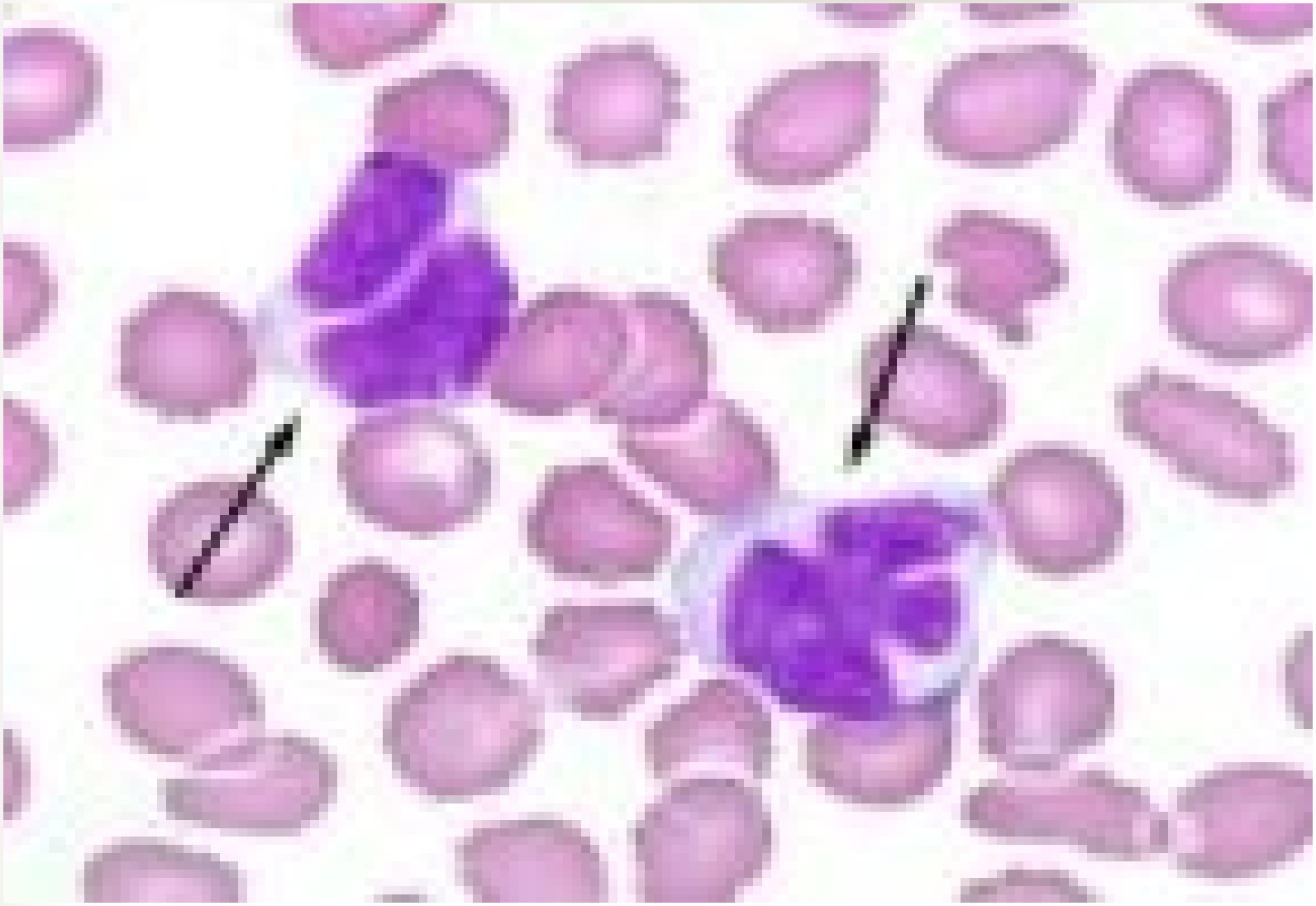
Side effects: - anaphylaxis

- hypotention, chills fever etc.

Salvage Therapy

- Second or third line chemotherapy
- Autologous bone marrow transplantation

Continuation of Non-Hodgkin's Lymphomas (NHL)

Special Clinical Syndrome

- **MALT Lymphoma**
  - **Helicobacter pylori associated**
- **Burkitt's Lymphoma**
  - **young African children**
  - **jaw lesions**
  - **extranodal abdominal involvement**
  - **C-Myc Oncogen**
- **Mycosis fungoides and sézarýs syndrome**
  - **Cutaneous T-cell lymphoma**
  - **Psoriasis like lesions**
  - **Affection of deeper organs such as lymph node, spleen, liver, and bone marrow.**