Case history

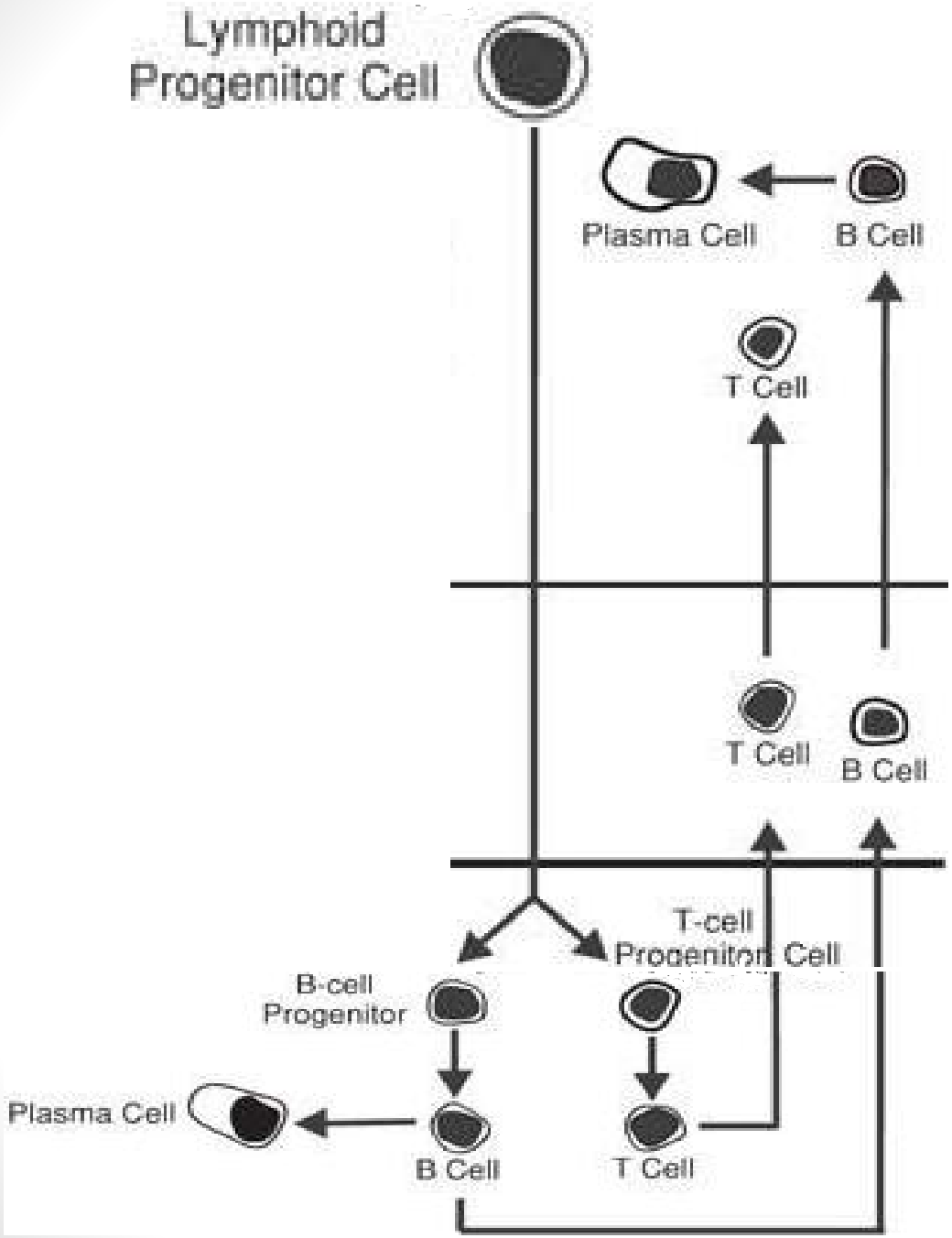
- 30 years old male presented with history of fever, night sweating and weight loss.
- On examination: there are multiple bilateral inguinal and axillary lymphadenopathy

- Complete blood count:
  - Hb= 9 gm/dl
  - WBC count= 10000 cells/cmm
  - Normal differential and no blast cells
- ESR= 90 mm/ hr

Lymphoma

Introduction

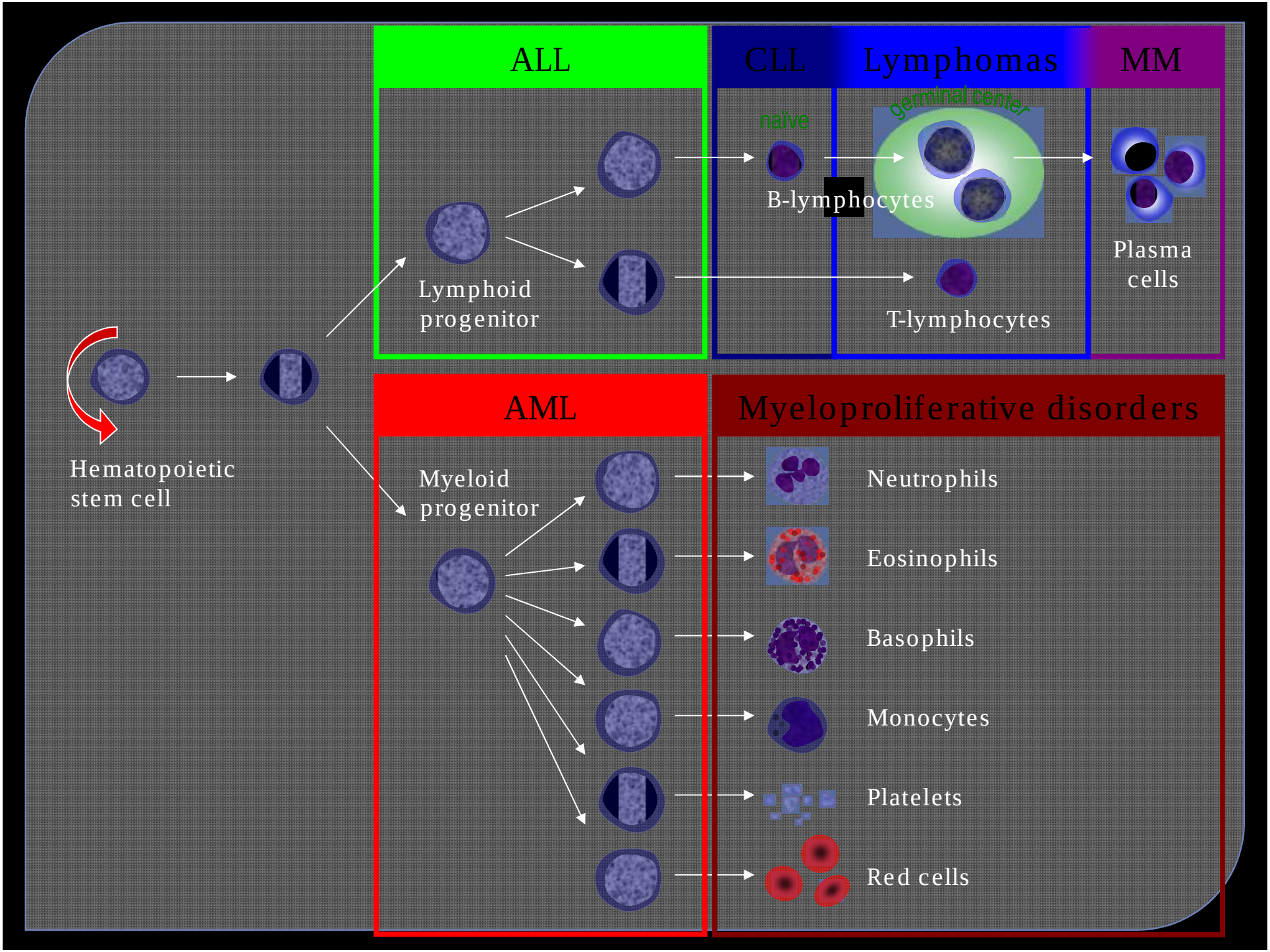
- These neoplasms arise from lymphoid tissues.
- The majority are of B cell origin.



Bone marrow

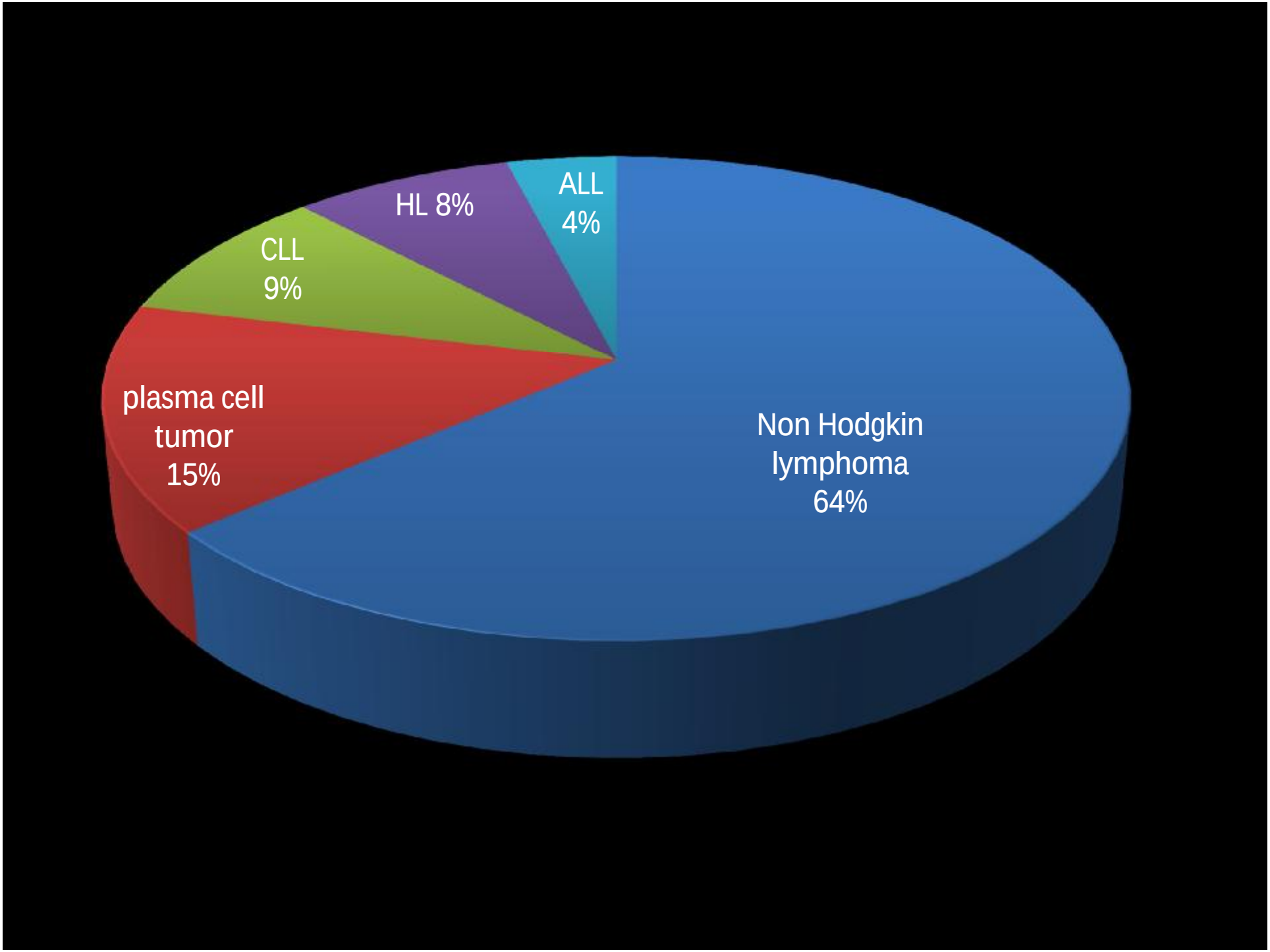
Blood

Lymphoid tissue



Histological Types

- Hodgkin's lymphoma (HL)
- Non-Hodgkin's lymphoma (NHL):
  - ü High-grade tumors divide rapidly.
  - ü Low-grade tumors divide slowly



Hodgkin's lymphoma

- HL is a neoplasm of lymphoid tissue in most cases derived from germinal center B cells.
- It has a characteristic neoplastic cell, the Reed-Sternberg cells.

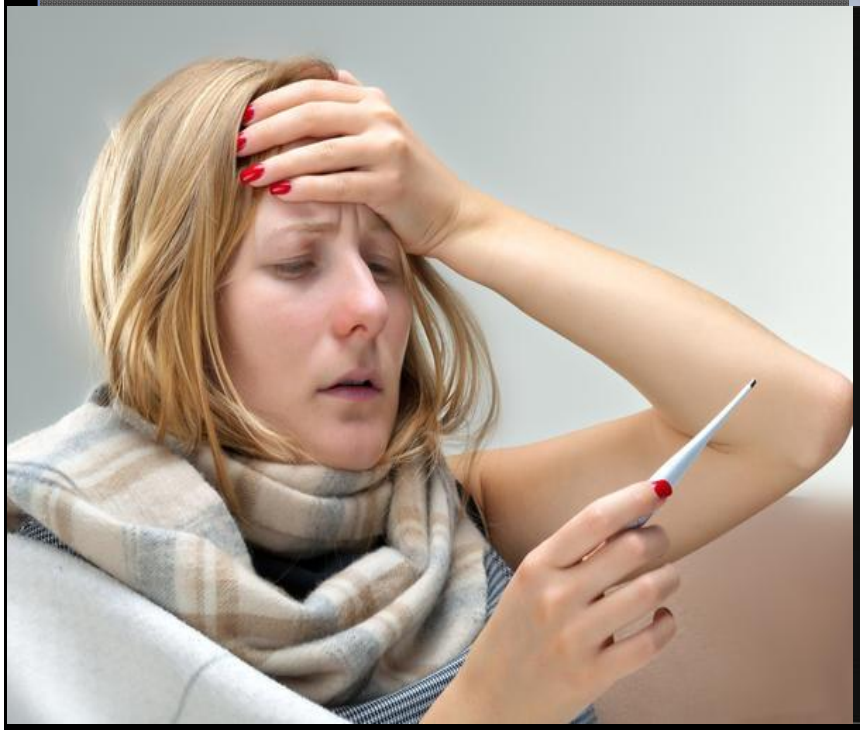
Epidemiology

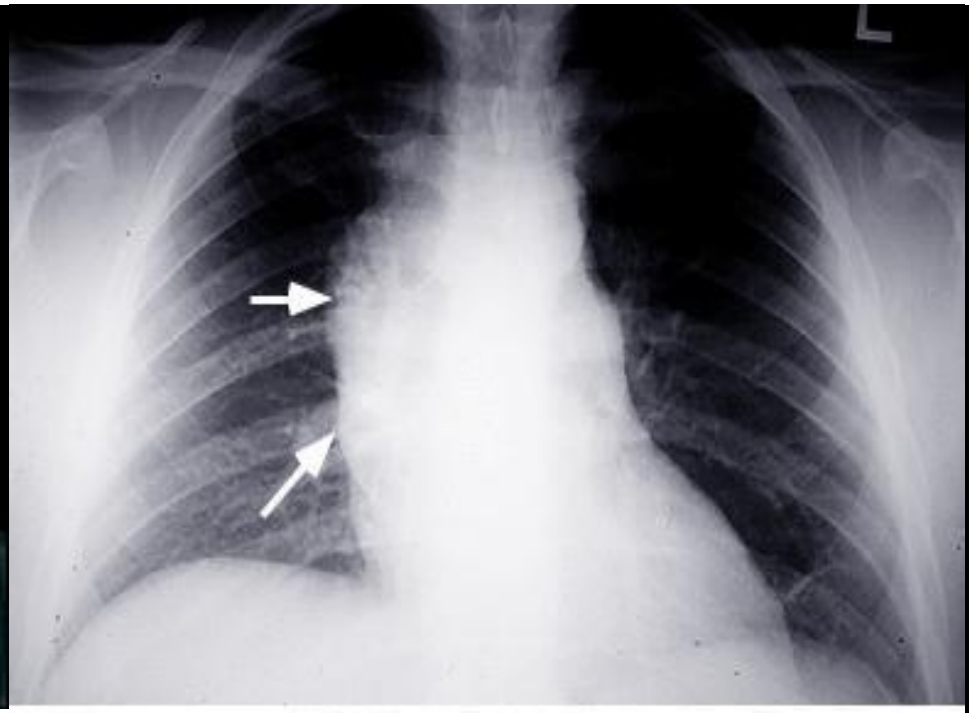
- Male more common than female.
- The disease has two peaks first peak at 20-35 years and second at 50-70 years.

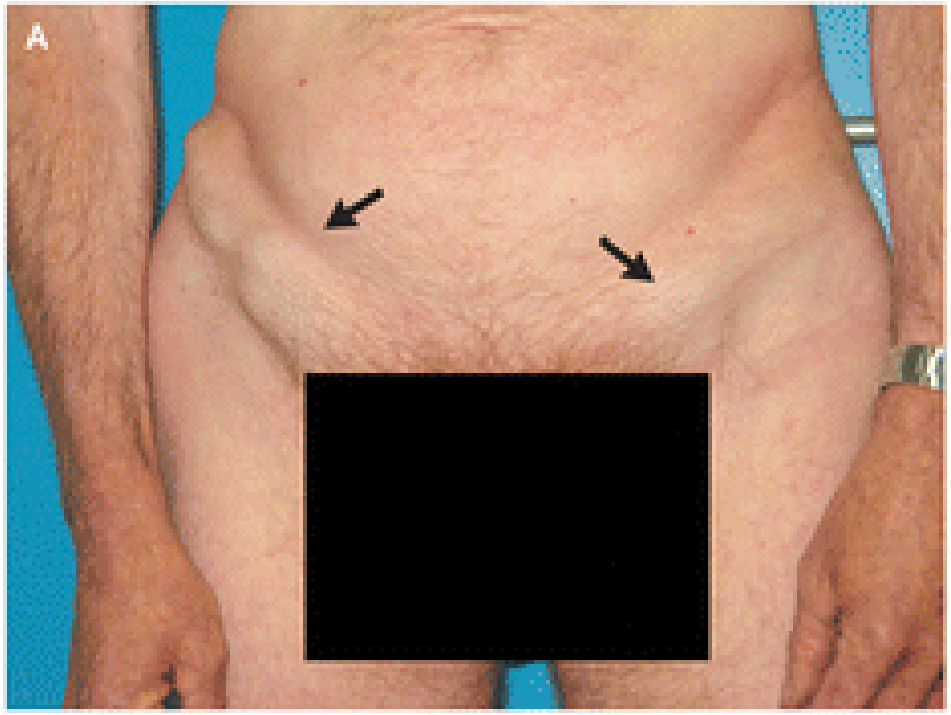
Clinical features

- Asymptomatic
- Constitutional symptoms called "B symptoms.“
  - B- symptoms
  - Lymphadenopathy
  - others

B symptoms







- Intermittent fever (Pel-Ebstein fever)
- Patients may present with pruritus
- Extranodal disease, such as bone, or skin involvement, is rare

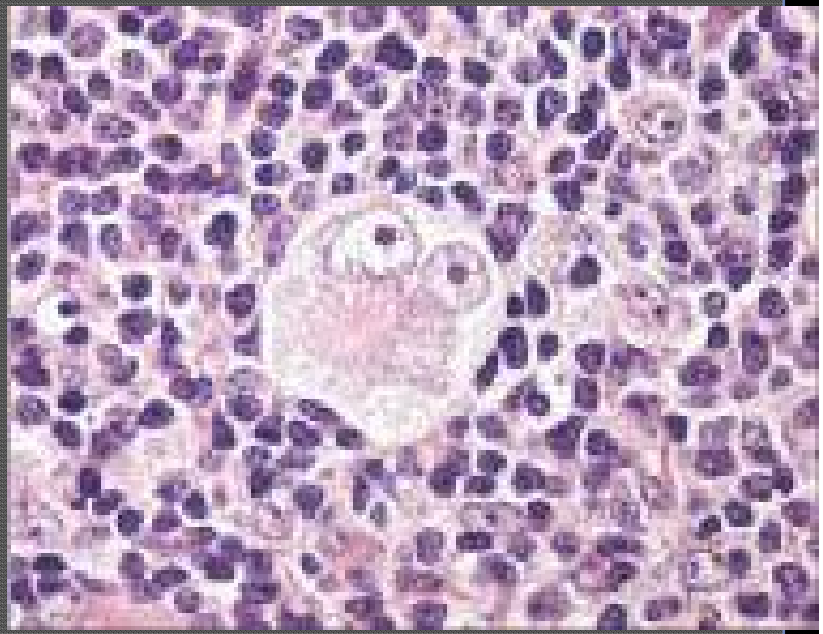
  Splenomegaly and/or hepatomegaly may be present.

Investigations

- Confirm diagnosis: (lymph node biopsy)
- Routine investigations:
  - CBC, LFT, RFT, & LDH
  - Echocardiography
- Staging:
  - CT scan of chest, abdomen and pelvis
  - PET- CT scan
  - Bone marrow biopsy

Diagnosis

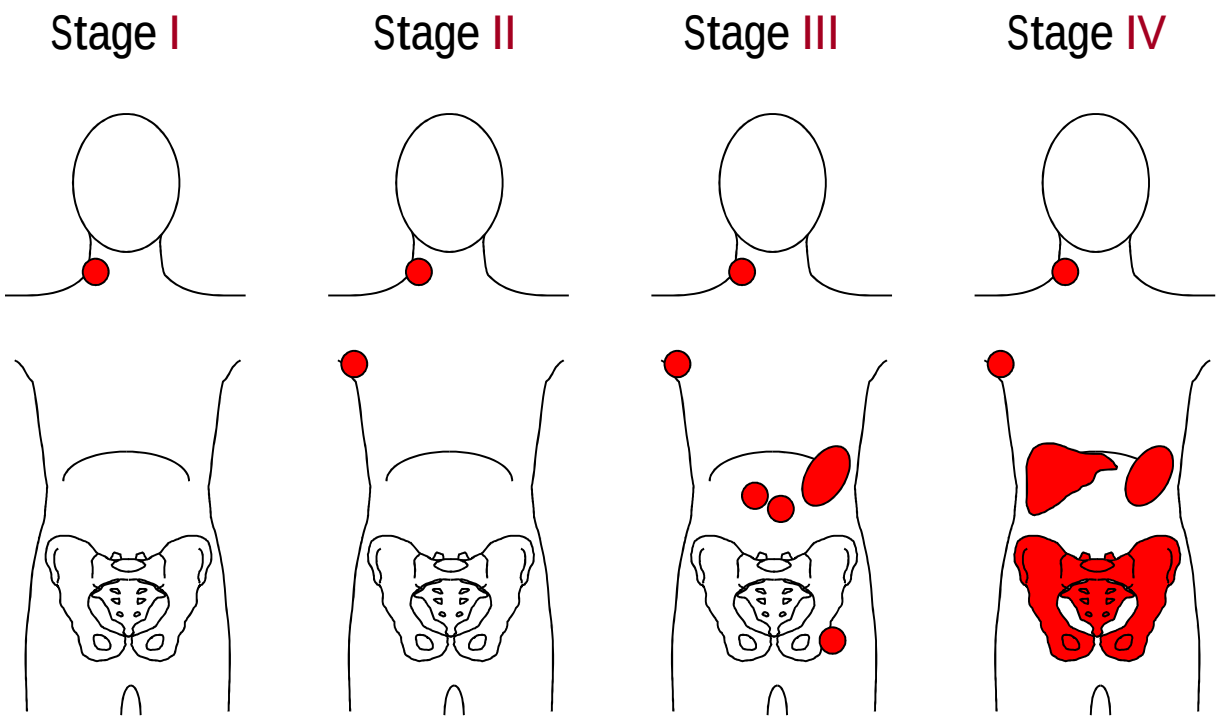
- Routine light microscopy (Reed Sternberg cells) is almost always augmented by immunohistochemical staining.



Investigation

- CBC may be completely normal.
  - Normochromic, normocytic anemia,
  - Lymphopenia, eosinophilia or a neutrophilia may be present.
  - ESR may be raised.
- RFT & LFT.
- LDH: raised levels are an adverse prognostic factor.

Staging of lymphoma

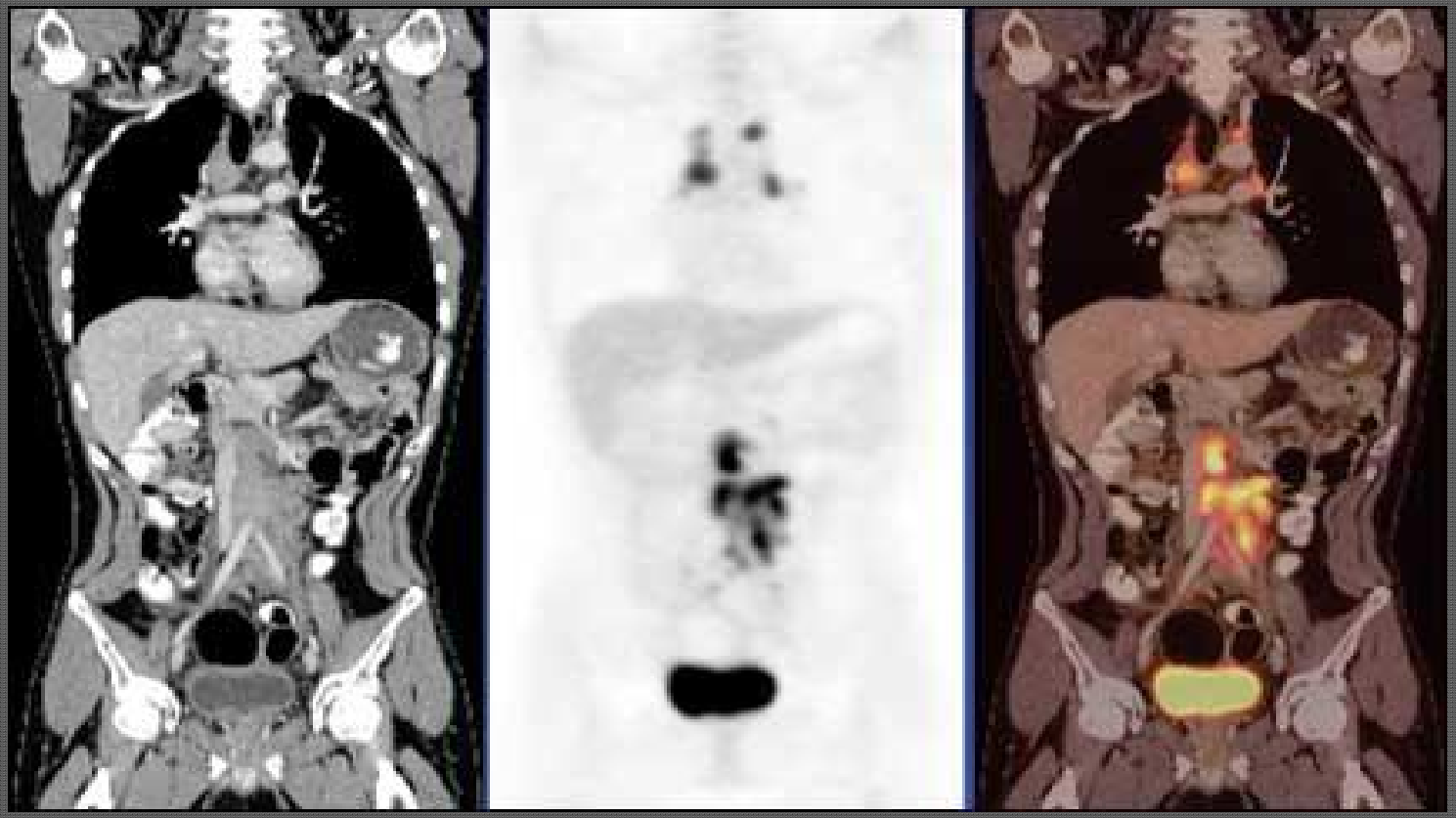


A: absence of B symptoms
B: fever, night sweats, weight loss

Ann Arbor staging classification for Hodgkin and non-Hodgkin lymphomas	
Stage I:	Involvement of a single lymph node region (I)
Stage II:	Involvement of two or more lymph node regions or lymphatic structures on the same side of the diaphragm alone
Stage III:	Involvement of lymph node regions on both sides of the diaphragm
Stage IV:	Involvement of extranodal site(s) beyond that designated ‘ E ’

- A: No symptoms
- B: Fever, drenching night sweats, weight loss > 10% in 6 months

- CT scan of chest and abdomen to permit staging.
- PET- CT scan.
- Bone marrow biopsy



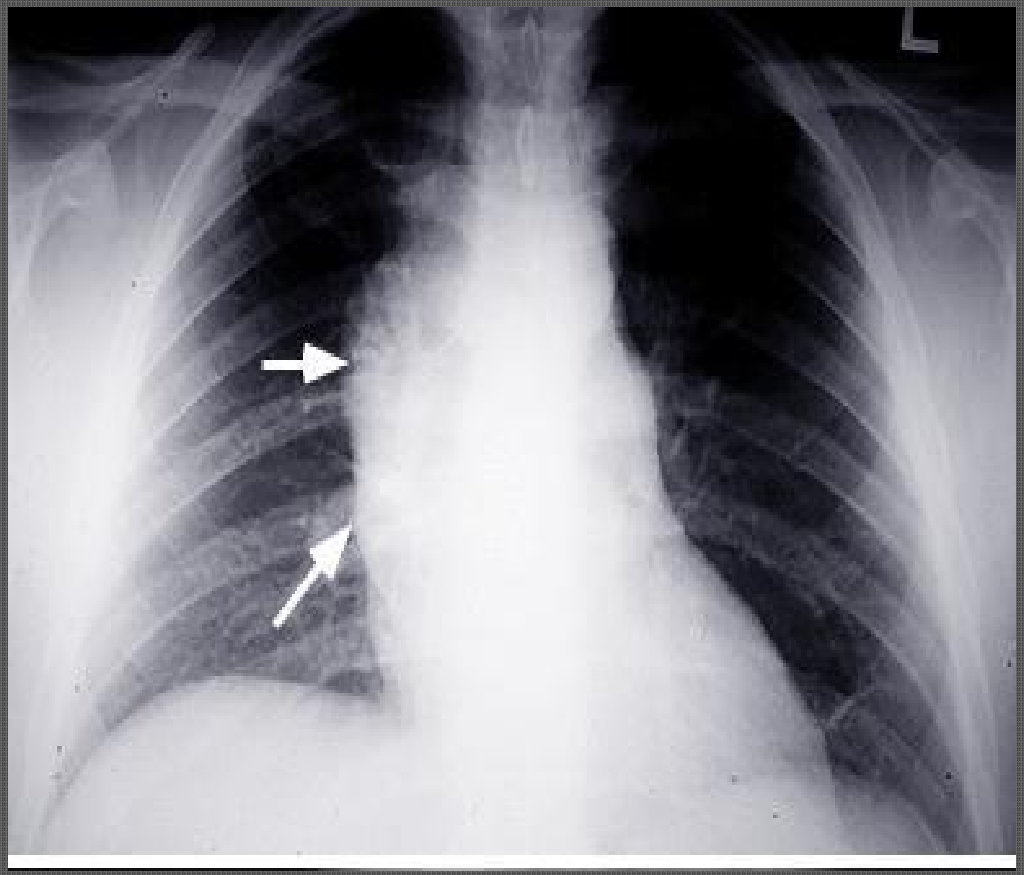
Treatment

Characters	Treatment
Stage I or II	4 cycles of chemotherapy (ABVD) followed by radiotherapy (IF-RT).
Stage III or IV	6-8 cycles ABVD.
ABVD: (adriamycine/ bleomycin/ vinblastine/ dacarbazine)	

Case history

- 30 years old male presented with history of fever, night sweating and weight loss.
- On examination: there are multiple bilateral inguinal and axillary lymphadenopathy

LN biopsy confirmed HL



- What are further investigations?
- Treatment?

Non-Hodgkin lymphoma (NHL)

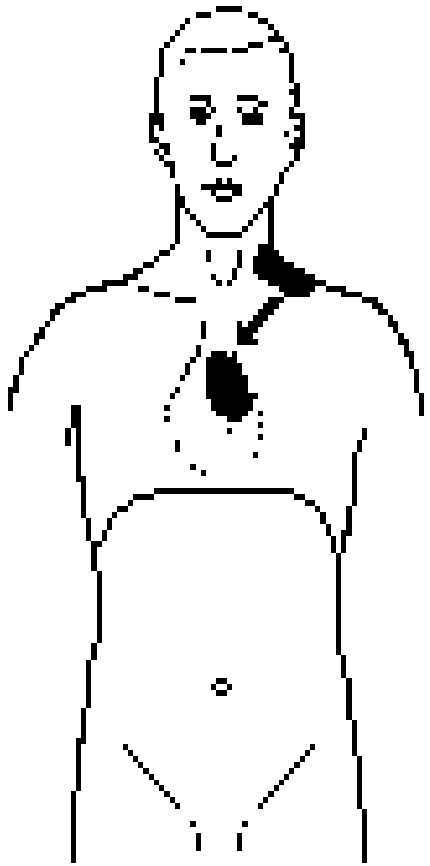
- NHL a neoplasm of lymphoid tissue which consists of a diverse group of malignant solid tumors of the lymphoid tissues, it may be of B-cell (70%) or T-cell (30%) origin.
- Clinically it is either high grade or low grade NHL.

Epidemiology

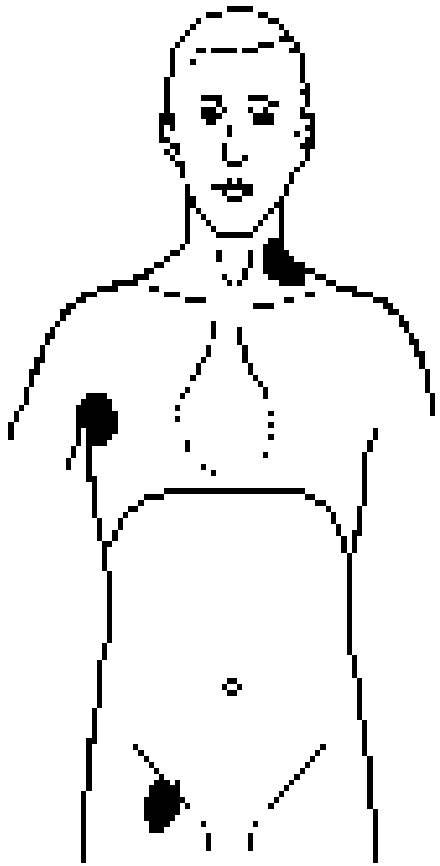
- NHL account for about 4% of cases of new cancers
- Slightly male more than female
- The incidence rate increases dramatically with age, median age of presentation 65-70 years.

Clinical features

- The most common presentation of NHL is *lymphadenopathy*.
- Lymphadenopathy occurring in sites such as the cervical, axillary, inguinal, mediastinum or retroperitoneum causes pressure symptoms.



Hodgkin's Lymphoma



Non-Hodgkin's Lymphoma

- NHL are often associated with systemic symptoms: fevers, night sweats, and unexplained weight loss.
- Other symptoms include fatigue, and pruritus.

- NHL can involve essentially any organ in the body:
  - CNS: primary brain lymphoma,
  - Shortness of breath with lymphomas in the lung,
  - Bowel obstruction with small bowel lymphomas,
  - Skin lesions with cutaneous lymphomas.

- High grade NHL present acutely with a rapidly growing mass, and/or systemic B symptoms.
- Indolent lymphomas are often insidious, presenting only with slow growing lymphadenopathy, hepatomegaly, splenomegaly, or cytopenias.

Investigation

- Histological diagnosis from biopsy of a lymph node, bone marrow or extranodal mass is essential, and confirmed by IHC
- The investigation are as for HL but in addition the following should be performed routine BM aspiration and trephine.

High-grade NHL

- All patients with high-grade NHL need treatment:
  - Chemotherapy. The CHOP regimen (cyclophosphamide, doxorubicin, vincristine and prednisolone).
  - Monoclonal antibody therapy: rituximab.
  - Transplantation. Autologous SCT for relapsed cases.

Low grade NHL treatment

- Asymptomatic patients may not require therapy. Indications for treatment include:
  - Marked systemic symptoms,
  - Lymphadenopathy causing discomfort or disfigurement,
  - Bone marrow failure or
  - Compression syndromes.

- Radiotherapy. This can be used for localized stage I disease.
- Chemotherapy: single or multidrug chemotherapy.
- Monoclonal antibody: The anti-CD20 antibody rituximab.
- Transplantation: autologous stem cell transplantation (SCT).