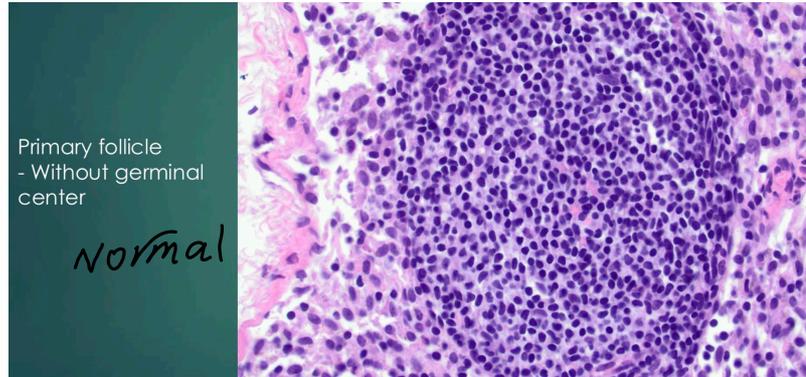
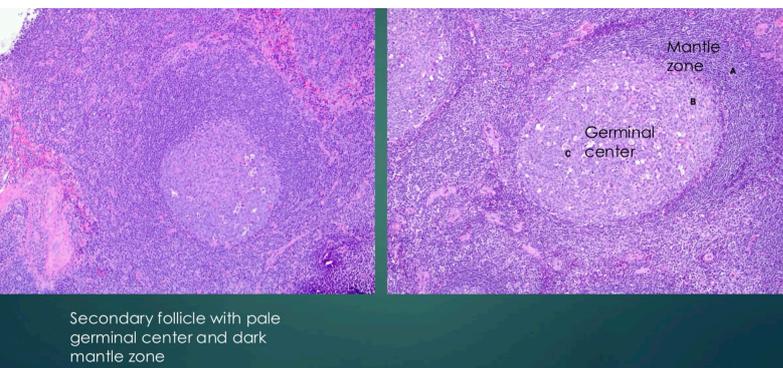


## #Leukocytosis

- Leukocytosis refers to an increase in the number of white cells in the blood.
- The bone marrow produces more white blood cells.
- ✓ Neutrophilia: seen in infection by Pyogenic bacteria.
- ✓ Eosinophilia: seen in Asthma.
- ✓ Monocytosis and Lymphocytosis: seen in Tuberculosis.

## #Lymphadenitis

- ❖ Nodes in specific sites undergo reactive hyperplasia due to:
  - Nodes in cervical region: mostly due to drainage of microbes from infections of the teeth or tonsils.
  - Mesenteric lymph nodes: acute appendicitis.
- ❖ Two types of lymphadenitis: Acute (painful), Chronic (painless).
- Clinically: Nodes involved by acute lymphadenitis are swollen and painful.



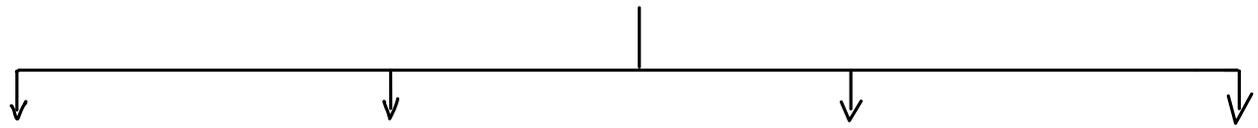
## #Neutropenia, Agranulocytosis

- Neutropenia, a reduction in the number of neutrophils in the blood
- Agranulocytosis, a marked reduction in neutrophils, has the serious consequence of making individuals susceptible to bacterial and fungal infections.
- The most common cause of agranulocytosis is drug toxicity

# # Neoplastic proliferation

## 1. Leukemia

- Leukemia is a cancer caused by replacement of bone marrow by immature and undifferentiated leukocytes or blast cells.
- In adults, chronic lymphocytic leukemia (CLL) and acute myelogenous leukemia (AML) are the most common leukemia.
- In children, the most common leukemia is acute lymphoblastic leukemia (ALL).



### # Acute lymphoblastic leukemia (ALLs)

- They are neoplasms composed of immature B (pre-B) or T (pre-T) cells, which are referred to as lymphoblasts
- Progenitor B cell Derived ALL constitutes 80-85% ALL (the most common), 15% are derived from T Cells.
- the most common childhood malignancy.
- Favorable prognosis: Children between the ages of 1 and 9 yrs.
- Bone marrow showing >25% lymphoblasts is diagnostic for ALL.



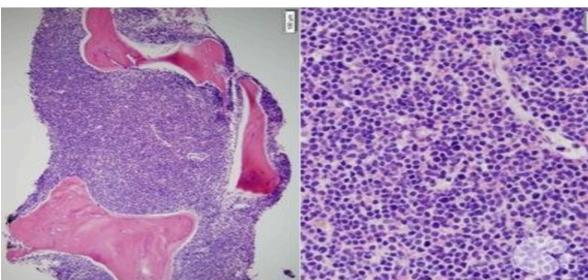
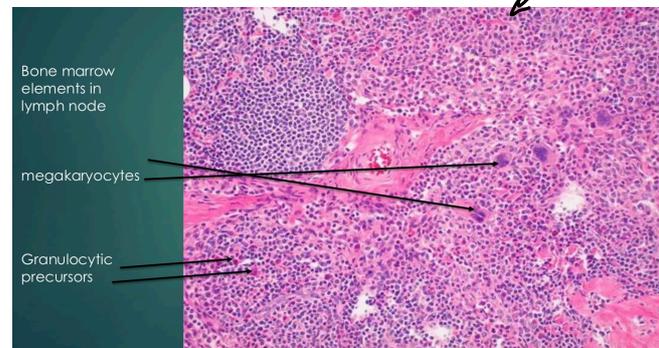
### # Chronic lymphocytic Leukemia (CLL)/SLL

- Pathophysiology
- It is characterized by proliferation of small, abnormal, mature B lymphocytes.
- CLL: The number of mature lymphocytes in peripheral blood smear and bone marrow are greatly increased (more than  $5 \times 10^3 \mu\text{l}$ ) with or without nodal involvement.
- Small lymphocytic lymphoma (SLL):  $< 5 \times 10^3$  CLL-like cells in peripheral blood with nodal or extranodal manifestation, usually with bone marrow involvement.

### # Acute Myeloid Leukemia (AML)

### # Chronic Myelogenous Leukemia (CML)

- the presence of a chimeric BCR-ABL gene. (Philadelphia chromosome)
- Massive splenomegaly: The red pulp of the enlarged spleen resembles bone marrow because of the presence of extensive extramedullary hematopoiesis.



Bone marrow replacement by blasts

