

Lymphatic System Disorders



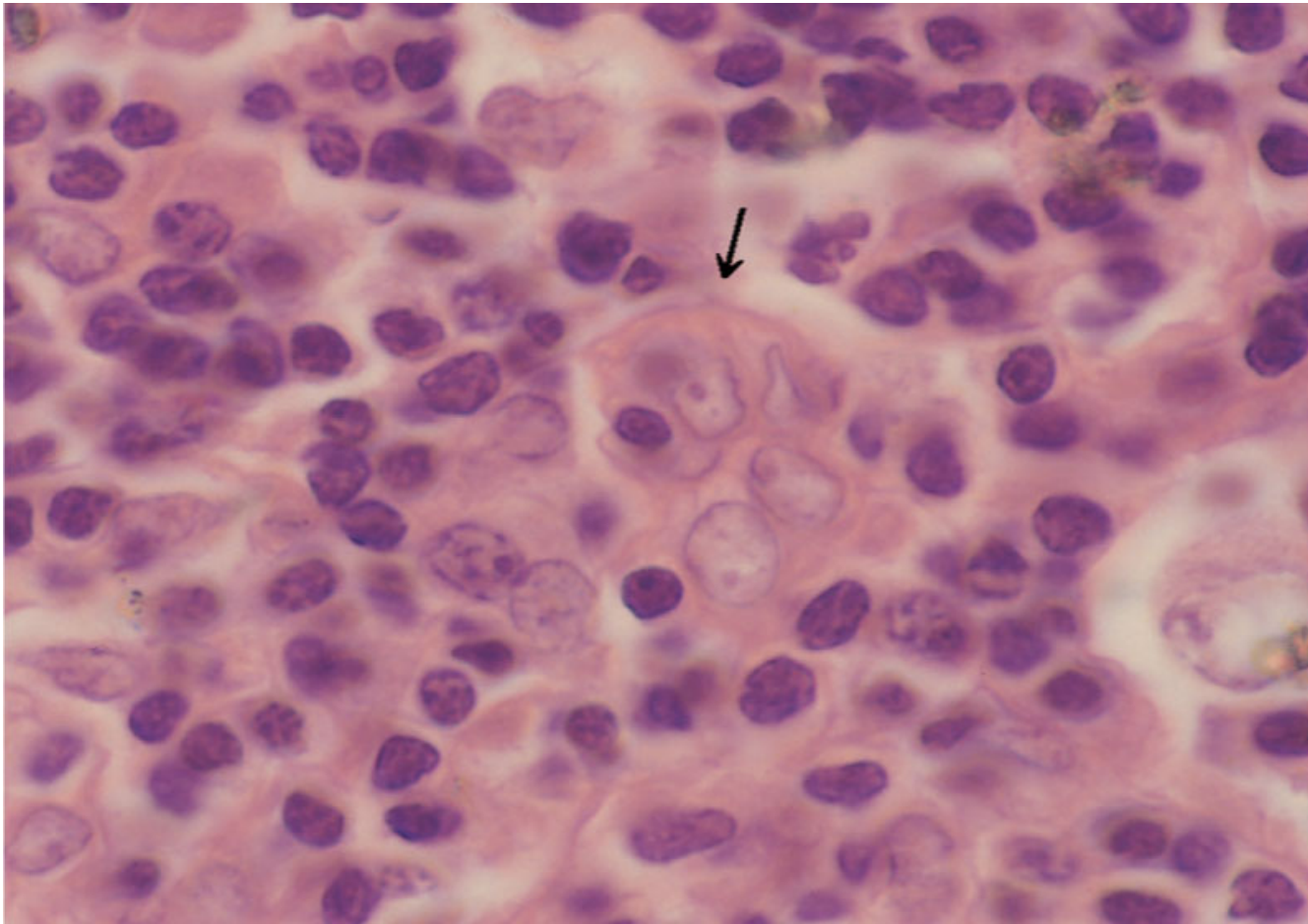
Lymphomas

- Malignant neoplasms involving lymphocyte proliferation in lymph nodes
- Specific causes not identified // Higher risk in adults who received radiation during childhood
- Two main disorders
 - Hodgkin's lymphoma
 - Non-Hodgkin's lymphoma // Distinguished by multiple node involvement // Nonorganized, with widespread metastases

Hodgkin's Lymphoma

- Initially involves a single lymph node
- Cancer spreads to adjacent nodes
 - To organs via lymphatics
 - T lymphocytes seem to be defective; lymphocyte count decreased
 - Presence of Reed-Sternberg cells // Giant cells present in lymph node
 - Four subtypes // Based on cell found at biopsy

Reed-Sternberg Cell



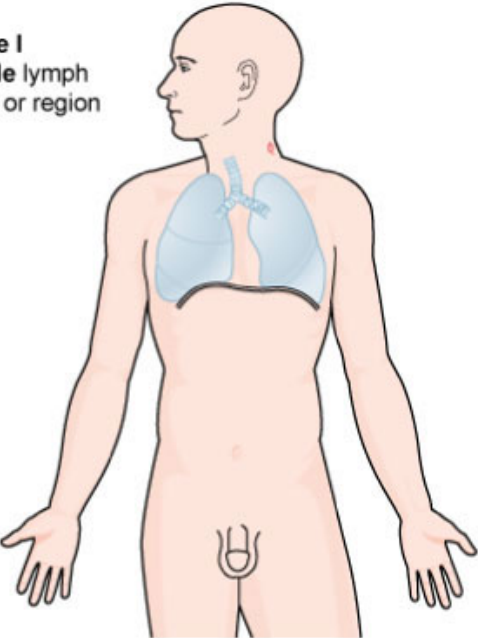
From Stevens ML: Fundamentals of Clinical Hematology, Philadelphia, 1997, Saunders.

Hodgkin's Lymphoma (Cont.)

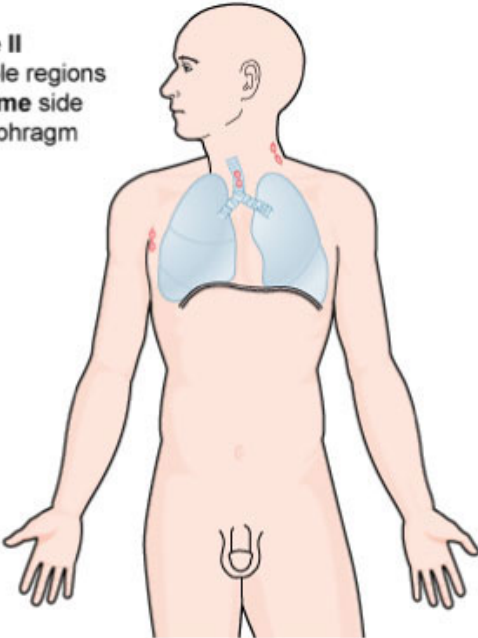
- Symptoms
 - First indicator—usually a painless enlarged lymph node
 - Later—splenomegaly and enlarged lymph nodes
 - General signs of cancer /// Weight loss, anemia, low-grade fever, night sweats; fatigue may develop.
- Treatment /// Radiation, chemotherapy, surgery

Hodgkin's Lymphoma

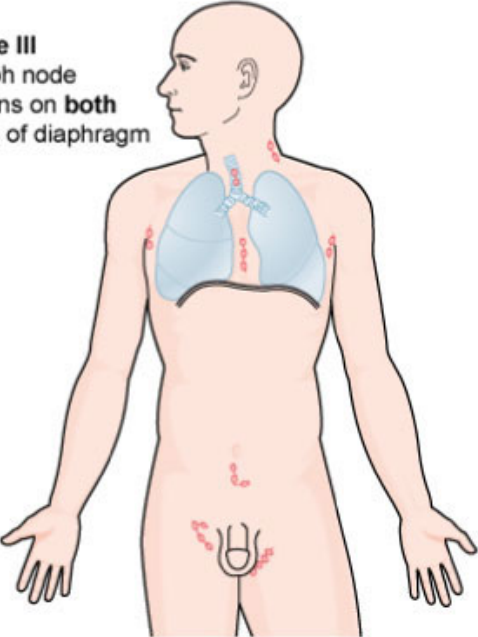
Stage I
Single lymph node or region



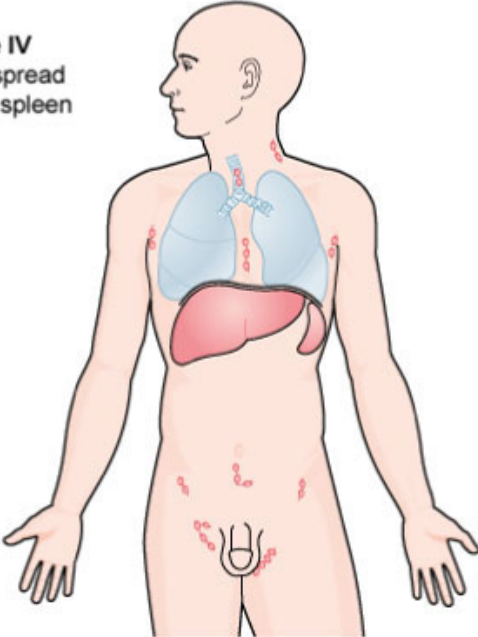
Stage II
Multiple regions on **same side** of diaphragm



Stage III
Lymph node regions on **both** sides of diaphragm



Stage IV
Widespread
Liver, spleen



Hodgkin's Lymphoma (Cont.)

- Staging and prognosis dependent on:
 - Number of nodes involved
 - Location of nodes involved

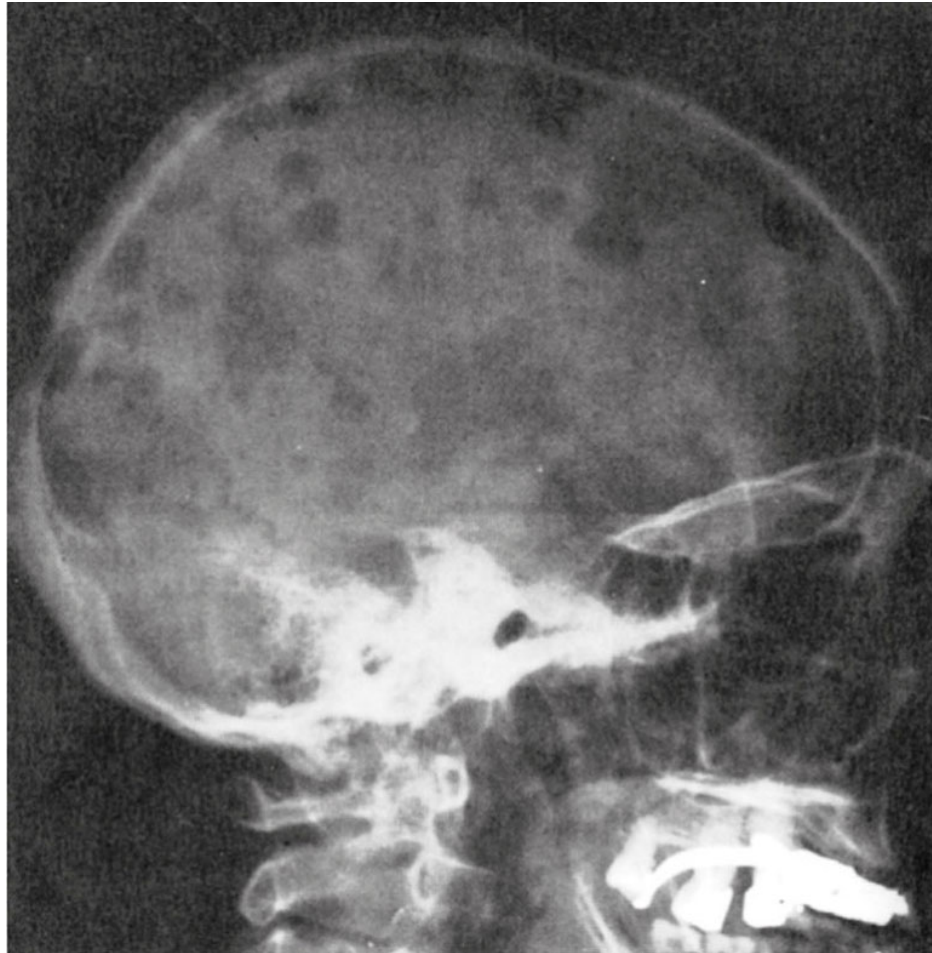
Non-Hodgkin's Lymphoma

- Increasing in incidence // Partially caused by HIV infection
- Similar to Hodgkin's lymphoma /// Clinical signs and symptoms are similar. // More difficult to treat when tumors are not localized
- Initial manifestation—enlarged, painless lymph node

Multiple Myeloma

- Neoplastic disease that involves increased production of plasma cells in bone marrow
- Unknown cause
- Occurs in older adults
- Production of other blood cells is impaired
- Multiple tumors in bone
 - Loss of bone
 - Severe bone pain
- Prognosis poor, with short life expectancy

Multiple Myeloma of the Skull



From Kumar V, Abbas AK, Fausto M: Robbins and Cotran Pathologic Basis of Disease, ed 7, Philadelphia, 2005, Saunders.

Signs and Symptoms of Multiple Myeloma

- Onset usually insidious
- Malignancy well advanced before diagnosis
- Pain caused by bone involvement
- Anemia and bleeding tendency
- Impaired kidney function and eventually failure
- Chemotherapy to encourage remission
// Median survival, 3 years

Lymphedema

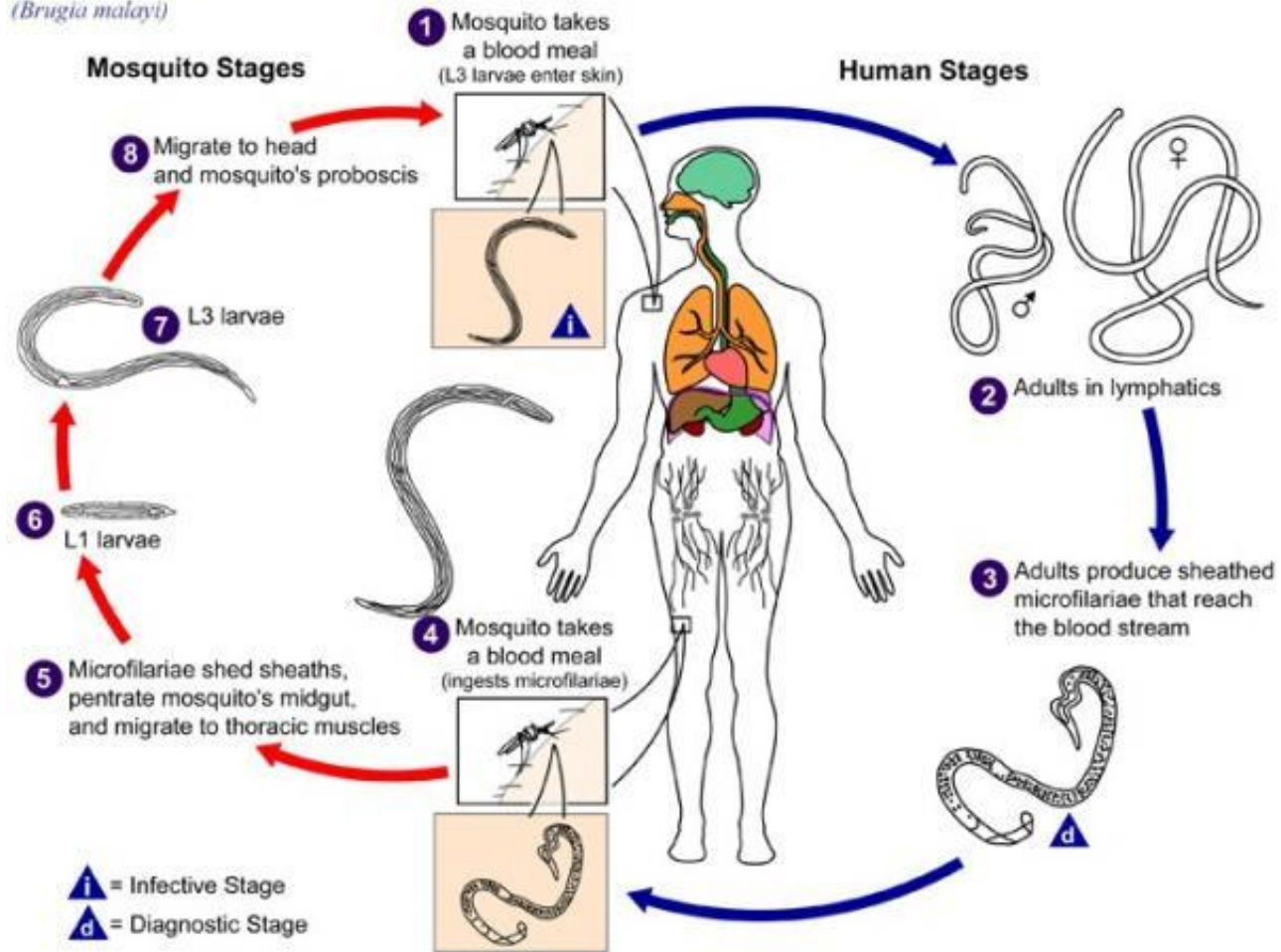
- Obstruction of lymphatic vessels
- Most common form is congenital
- Extremities swell because of lymph accumulation
- Treatment:
 - Diuretics
 - Bed rest
 - Massage of affected area
 - Elevation of affected extremity

Elephantiasis

- Lymphedema // Caused by blockage because of parasitic infection
- Significant swelling of affected extremity
 - Extreme swelling of legs, breast, and/or genitalia
 - Thickening of subcutaneous tissue
 - Frequent infections
 - Skin ulcerations
 - Fever
- Treatment—medication regimen to kill parasite

Filariasis

(*Brugia malayi*)





Castleman's Disease

- Rare illness // Involves overgrowth of lymphoid tissue
- Two types
 - Unicentric form // Affects a single lymph node
 - Multicentric form // Affects multiple lymph nodes and tissue—may have severe effects on the immune system
- Signs, symptoms, and treatment depend on the type of the disease

Castleman disease (giant or angiofollicular lymph node hyperplasia, lymphoid hamartoma, angiofollicular lymph node hyperplasia) is an uncommon lymphoproliferative disorder that may be localized to a single lymph node (unicentric) or occur systemically (multicentric). It must be distinguished from reactive lymph node hyperplasia and malignancies.

It is a very rare disorder characterized by non-cancerous growths (tumors) that may develop in the lymph node tissue at a single site or throughout the body. It involves hyperproliferation of certain B cells that often produce cytokines. While not officially considered a cancer, the overgrowth of lymphocytes with this disease is similar to lymphoma.

It is named after Benjamin Castleman