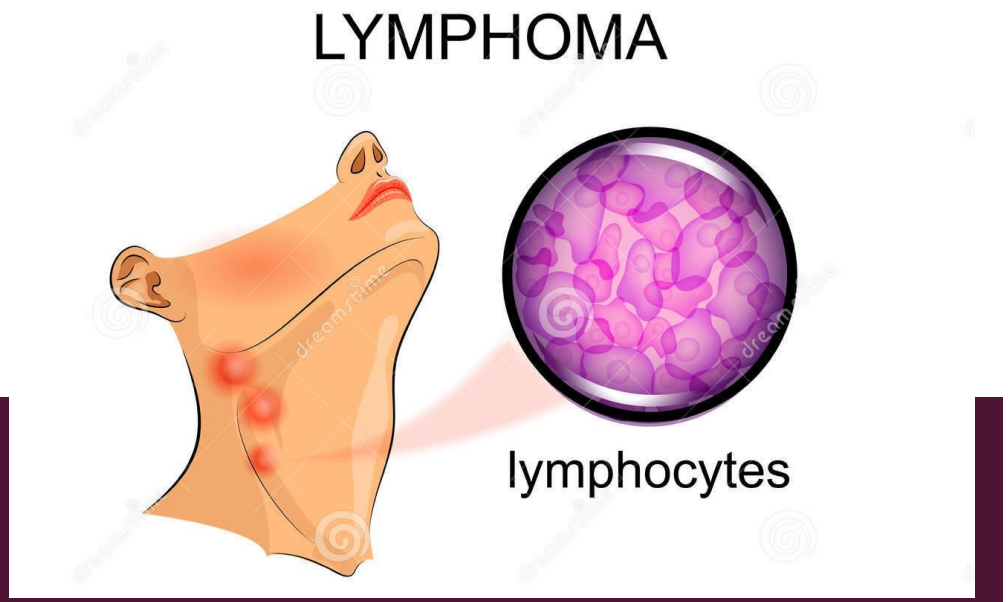
LYMPHOMA II.

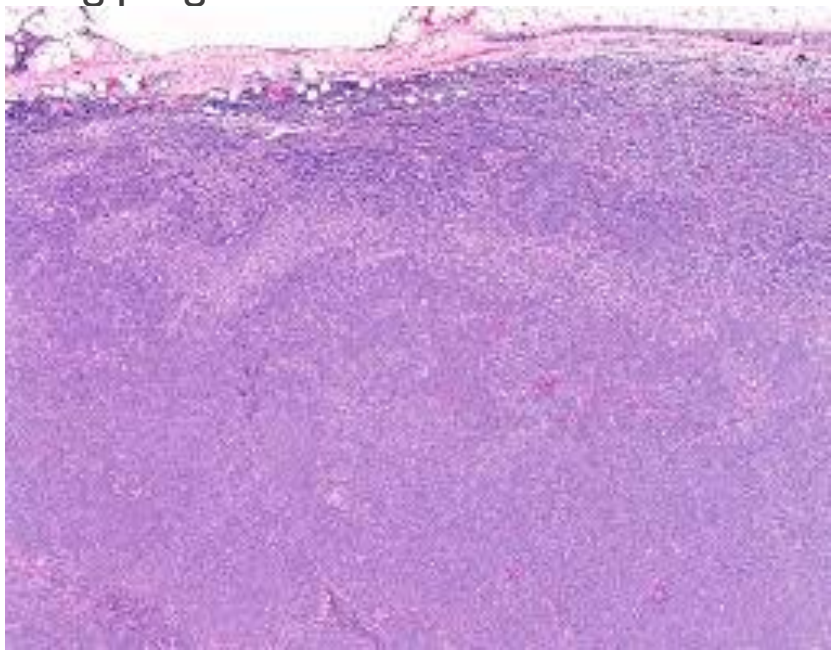


DR. EMAN KREISHAN, M.D.

17/4/2023

DIFFUSE LARGE B CELL LYMPHOMA

- A 62-year-old man has experienced vague abdominal discomfort accompanied by bloating and diarrhea for the past 6 months. On physical examination, there is a midabdominal firm mass. An abdominal CT scan shows mass involving the wall of the distal ileum. A laparotomy is performed, and the mass is shown here. The neoplastic cells mark with CD19+ and CD20+ and have the BCL6 gene rearrangement. Which of the following prognostic features is most applicable to this case?
- A Aggressive, can be cured by chemotherapy
- B Aggressive, often transforms to acute leukemia
- C Indolent, can be cured by chemotherapy
- D Indolent, often undergoes spontaneous remission
- E Indolent, survival of 7 to 9 years without treatment



DIFFUSE LARGE B CELL LYMPHOMA

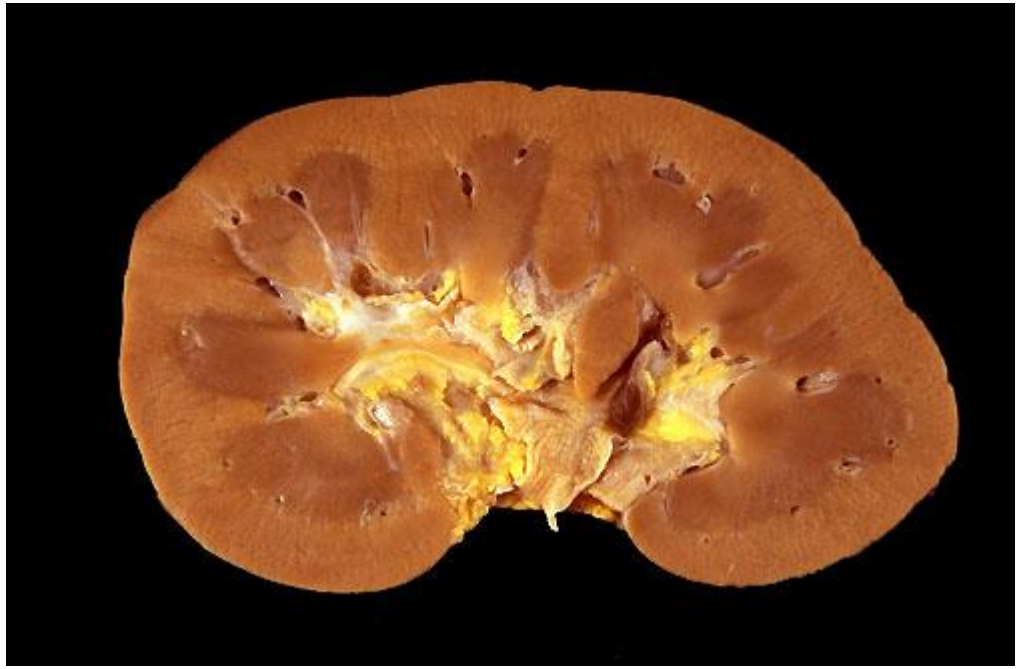
- Most common type of adult non-Hodgkin lymphoma
- Either de novo or transformation from other low grade tumors (follicular lymphoma).
- **Pathogenesis**:
- Mutations & rearrangements of the BCL6 gene → increased levels of BCL6 protein, an important transcriptional regulator of gene expression in GC B-cells.

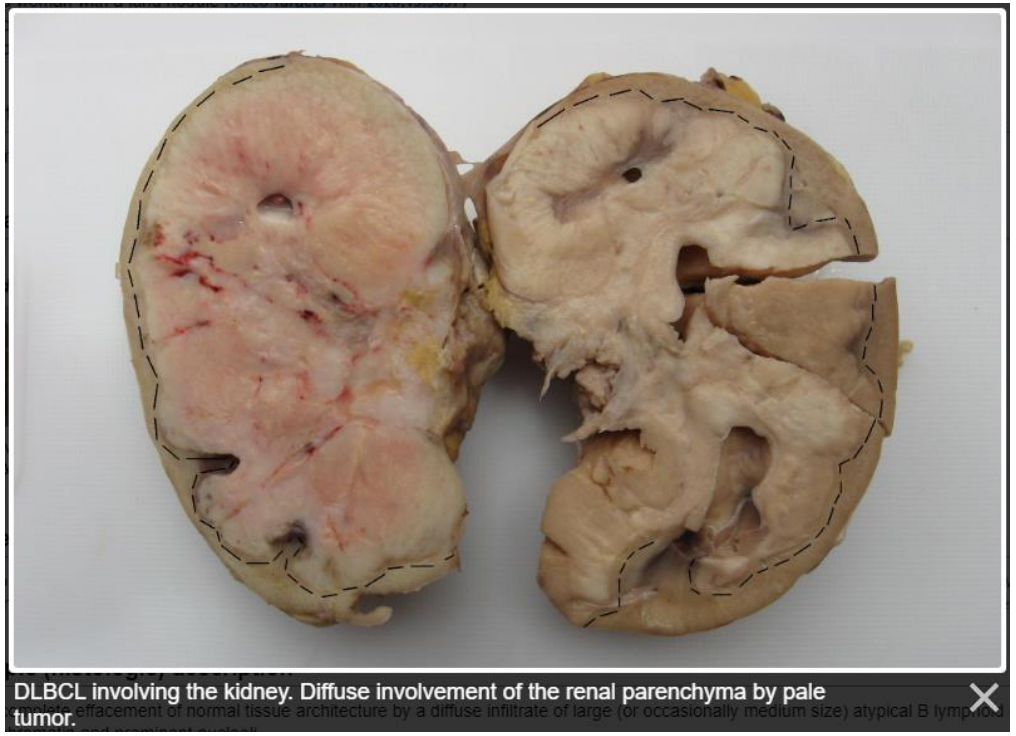
CLINICAL FEATURES

- Median > 60 years of age (but Can occur at any age)
- Generalized lymphadenopathy
- Often presents as single, rapidly growing nodal mass
- 30 - 40% are extranodal (skin, GI, GU, CNS) at diagnosis; also liver, spleen
- Bone marrow involvement in up to 27%.
- An aggressive and rapidly fatal lymphoma if not treated
- With intensive chemotherapy 60% to 80% of patients achieve complete remission, and up to 50% can be cured.

- May represent transformation of existing low grade B cell lymphoma e.g:
  - follicular lymphoma.
  - marginal zone lymphoma.
  - chronic lymphocytic leukemia [CLL] / small lymphocytic lymphoma [SLL].
  - nodular lymphocyte predominant Hodgkin lymphoma)

GROSSLY

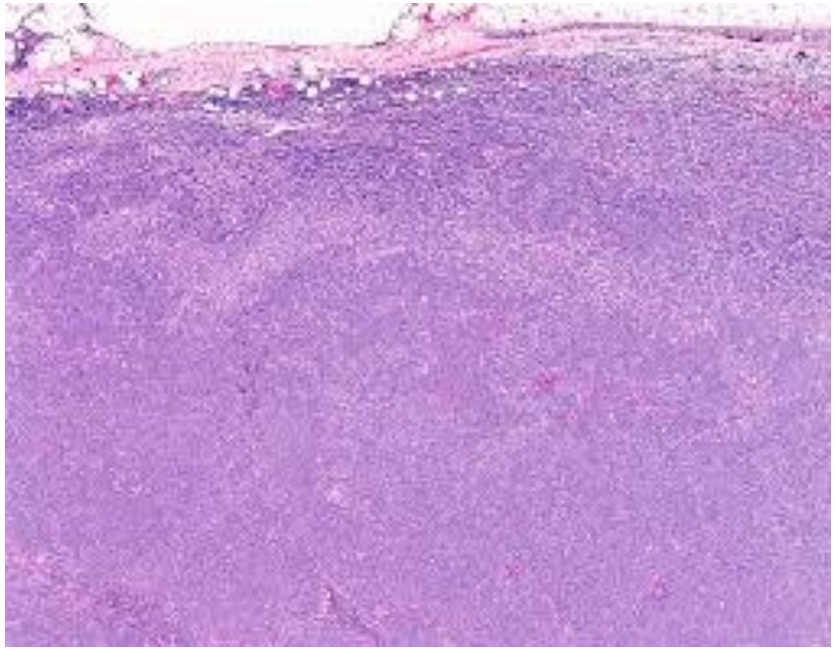


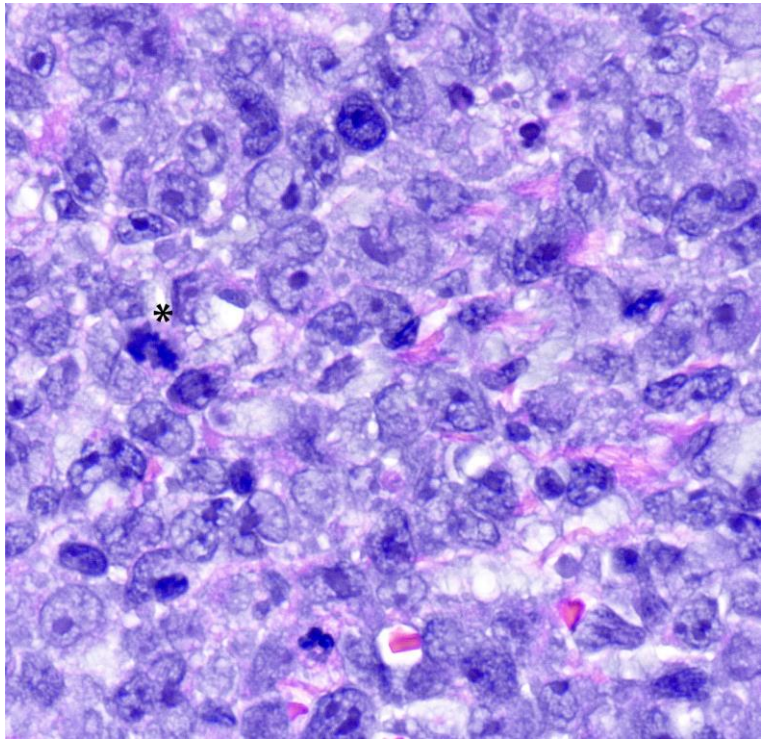


DLBCL involving the kidney. Diffuse involvement of the renal parenchyma by pale tumor.

MORPHOLOGY

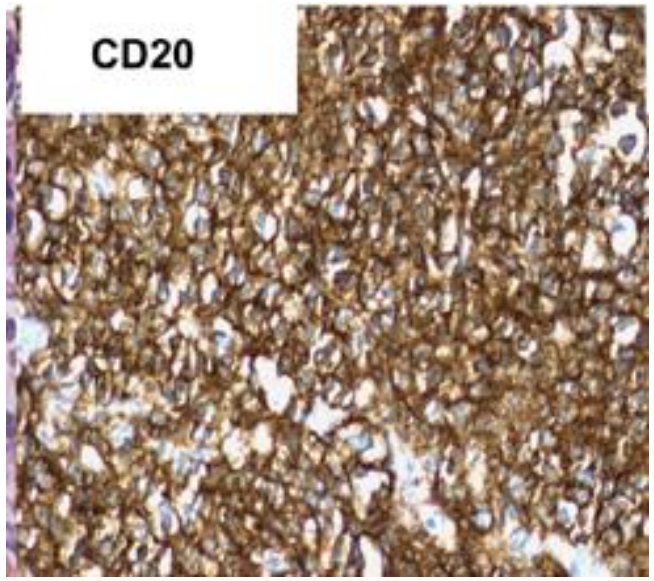
- Diffuse infiltration by large neoplastic B cells (three to four times the size of resting lymphocytes) & vary in appearance.

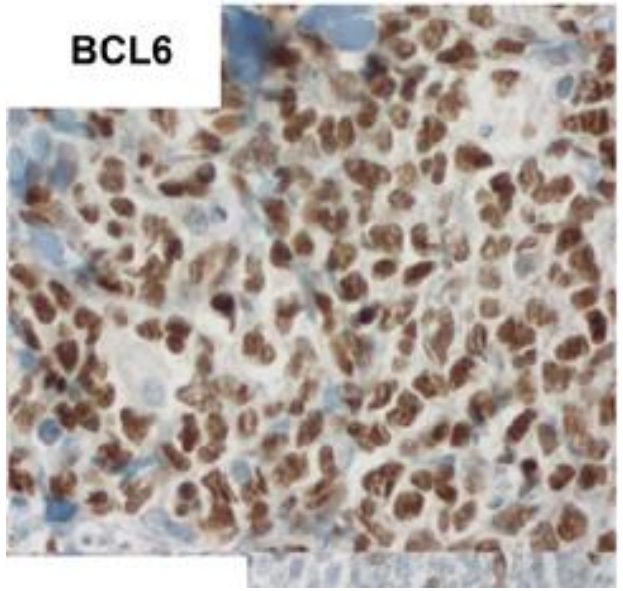




IMMUNOPHENOTYPE

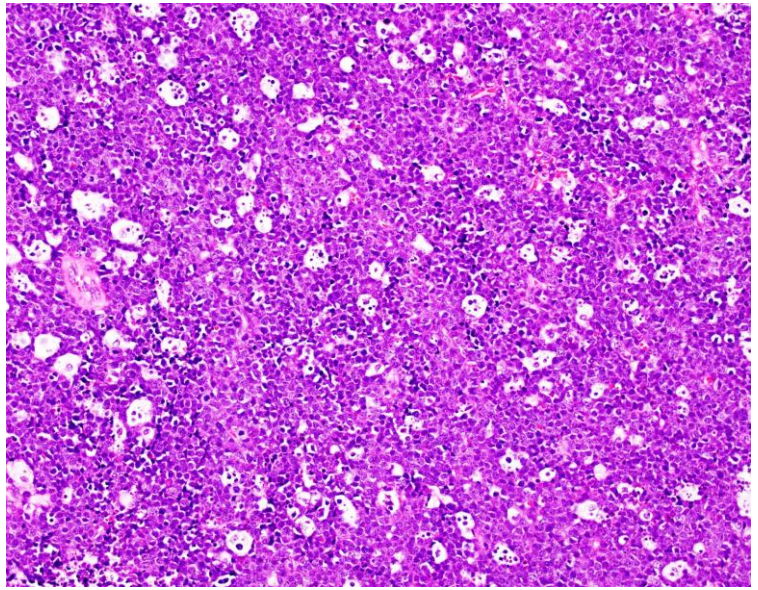
- Immunophenotype: B-cell markers, BCL-6, CD10 in some tumors.





BURKITT LYMPHOMA

- A 12-year-old boy has had increasing abdominal distention and pain for the past 3 days. Physical examination of his abdomen shows lower abdominal tenderness. An abdominal CT scan shows a 7-cm mass involving the region of the ileocecal valve. Surgery is performed and the resected mass is shown here. Cytogenetic analysis of the cells from the mass shows a t(8;14) karyotype. The tumor shrinks dramatically after a course of chemotherapy. Which of the following is the most likely diagnosis?
- A Acute lymphoblastic leukemia/lymphoma
- B Burkitt lymphoma
- C Diffuse large B-cell lymphoma
- D Follicular lymphoma
- E Plasmacytoma



BURKITT LYMPHOMA

- Highly aggressive tumor which can be:

1) Endemic in parts of Africa (ass with EBV)
2) Sporadically in other geographic areas
3) immunodeficiency related subtype: affects HIV patients essentially

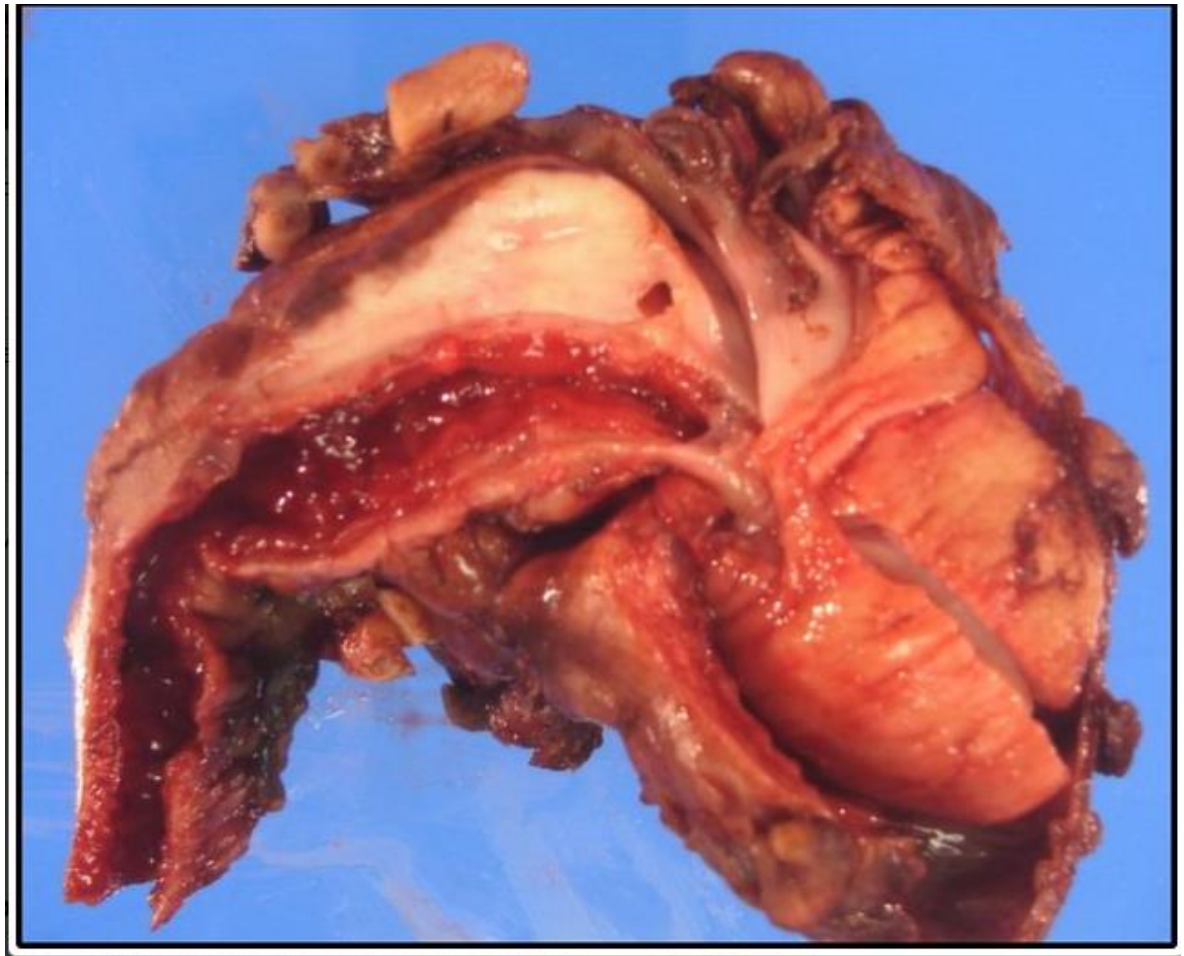
- Pathogenesis: translocations involving MYC gene on chr. 8 → MYC overexpression (a master regulator of Warburg metabolism (aerobic glycolysis), a cancer hallmark that is associated with rapid cell growth).

CLINICAL FEATURES

- All types affect children & young adults.
- Extranodal presentation often predominates
- Jaw / orbital mass in endemic subtype
- Abdominal mass in sporadic subtype
- Central nervous system and bone marrow involvement confer a poor prognosis

- Mass growing very quickly
  - Fastest growing human tumor (doubling time = 24 - 48 hours)
  - Patients have symptoms for only a few weeks prior to diagnosis
- Highly aggressive; can be cured with very intensive chemotherapy regimens.

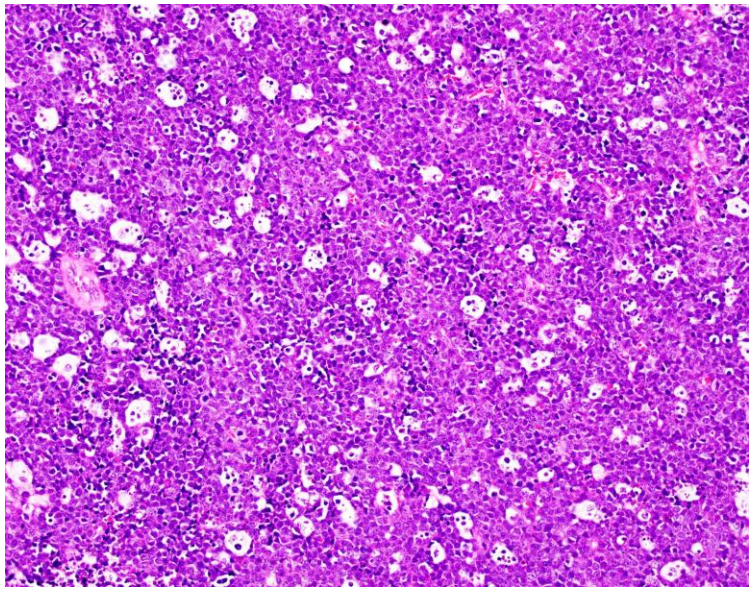
GROSSLY



Fleshy homogenous mass invading the submucosa, consistent with Burkitt lymphoma.

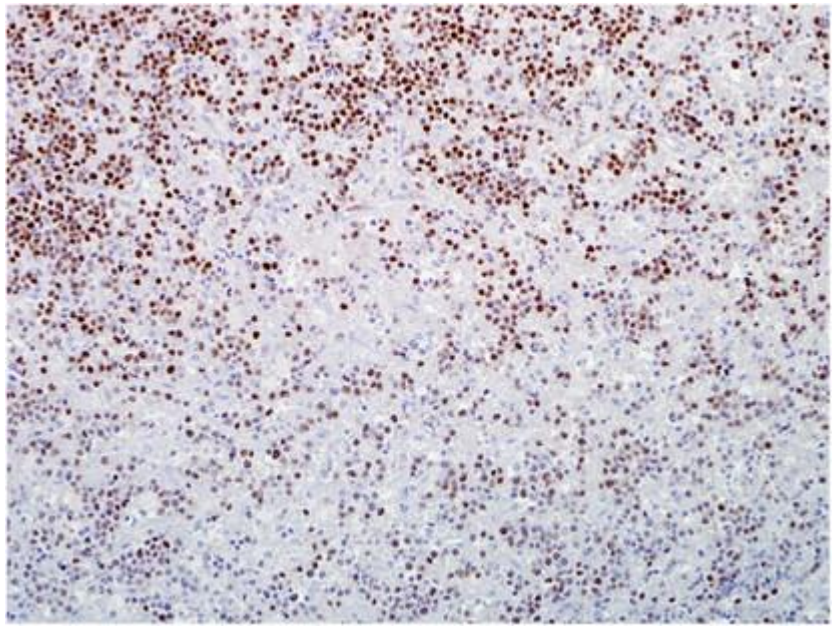
MORPHOLOGY

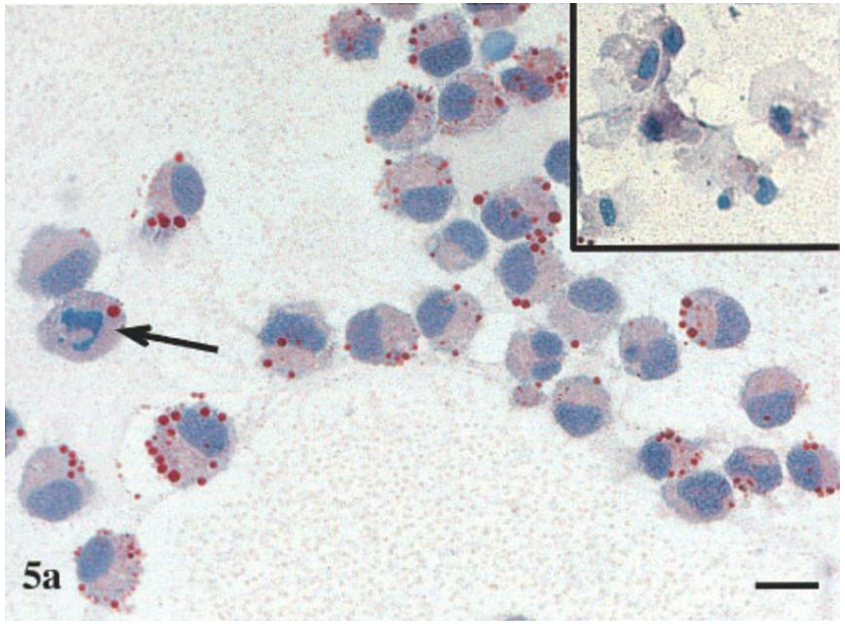
- Intermediate size lymphocytes (Variable cytoplasm, several nucleoli).
- Very high rates of proliferation and apoptosis (high turnover) → numerous mitoses & tissue macrophages containing ingested nuclear debris.
- These benign macrophages often are surrounded by a clear space, creating a "starry sky" pattern.



IMMUNOPHENOTYPE

- Immunophenotype: B-cell markers, CD10, MYC .
- Oil red O (highlights cytoplasmic lipid vacuoles)



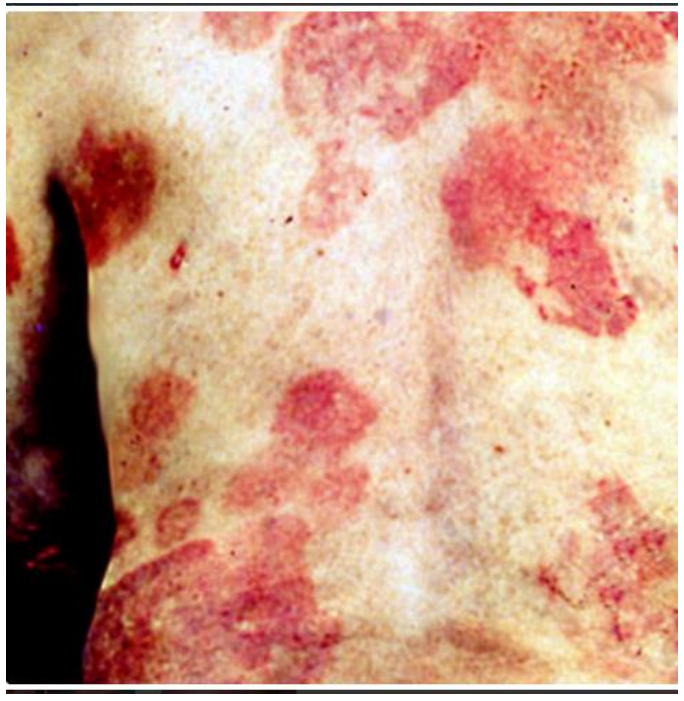


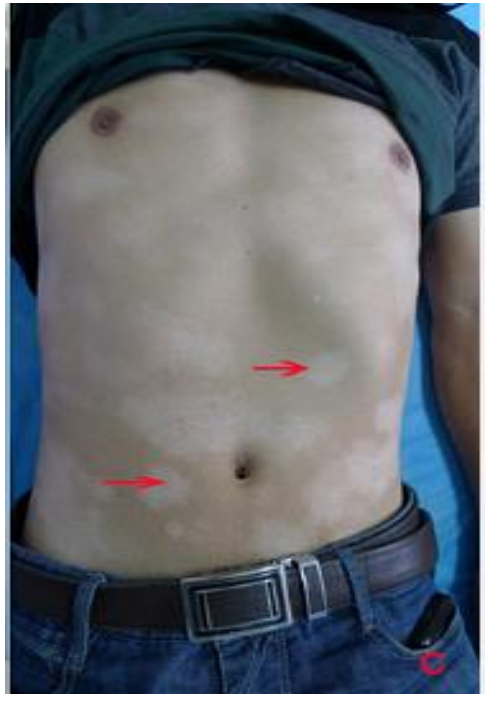
T CELL LYMPHOMA.

- **Mycosis Fungoides :**
- Peripheral T cell lymphoma derived from mature, post-thymic T lymphocytes
- Presents as cutaneous patches and can progress to plaques, tumors and erythroderma
- While most patients experience an indolent course, the lymph nodes, bone marrow and viscera can become involved in advanced stage disease

EPIDEMIOLOGY

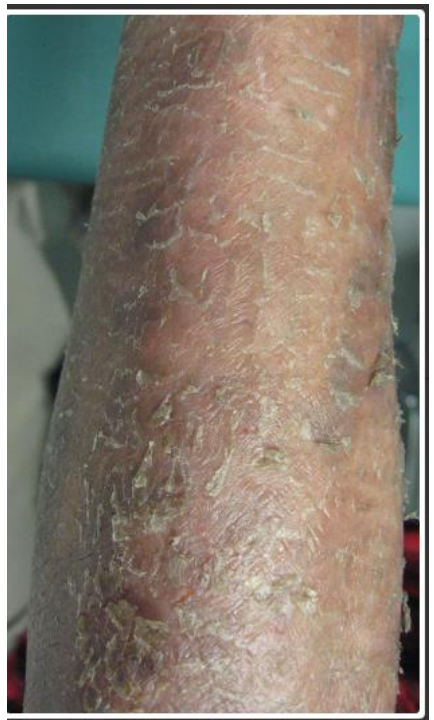
- Higher incidence among men than women
- Median age at diagnosis in 50s
- children more likely to have the hypopigmented variant

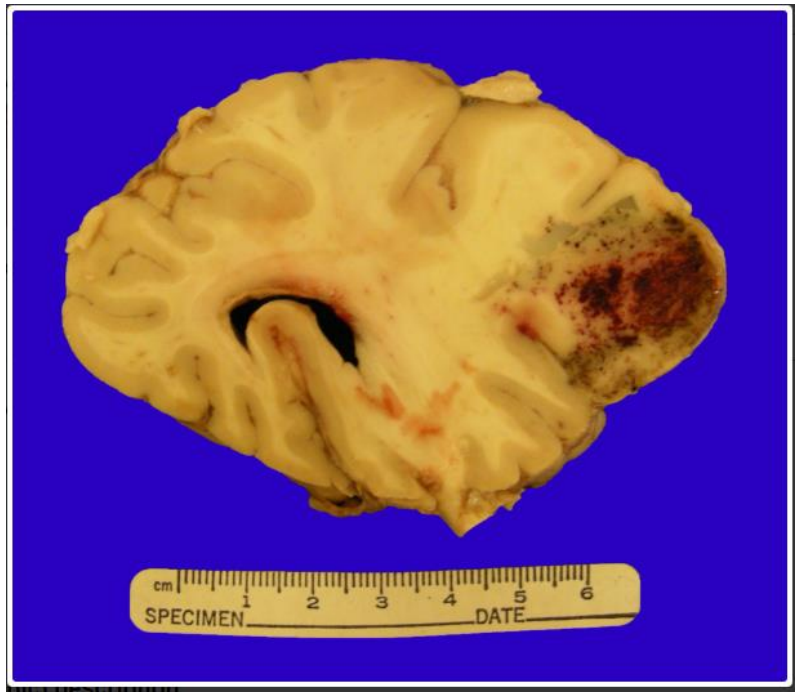




SÉZARY SYNDROME:

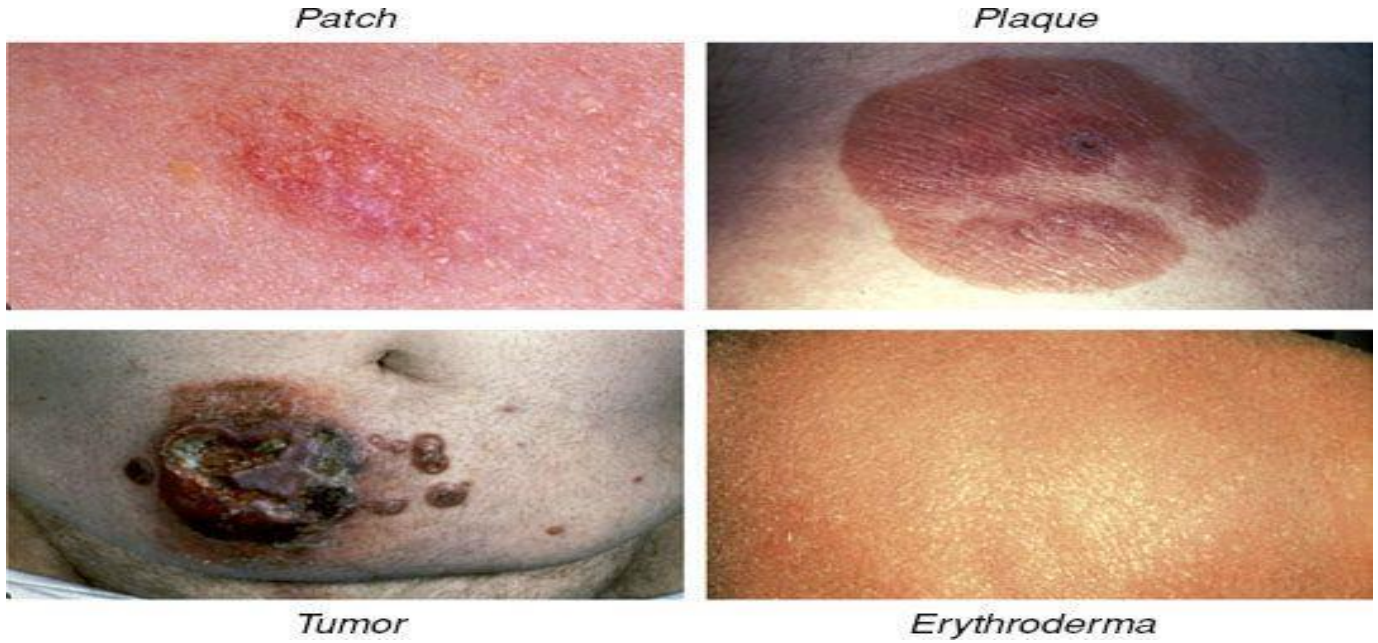
- leukemic variant of cutaneous T cell lymphoma (CTCL) defined by the presence of erythroderma, generalized lymphadenopathy and neoplastic T cells with cerebriform nuclei (Sézary cells) in the peripheral blood.





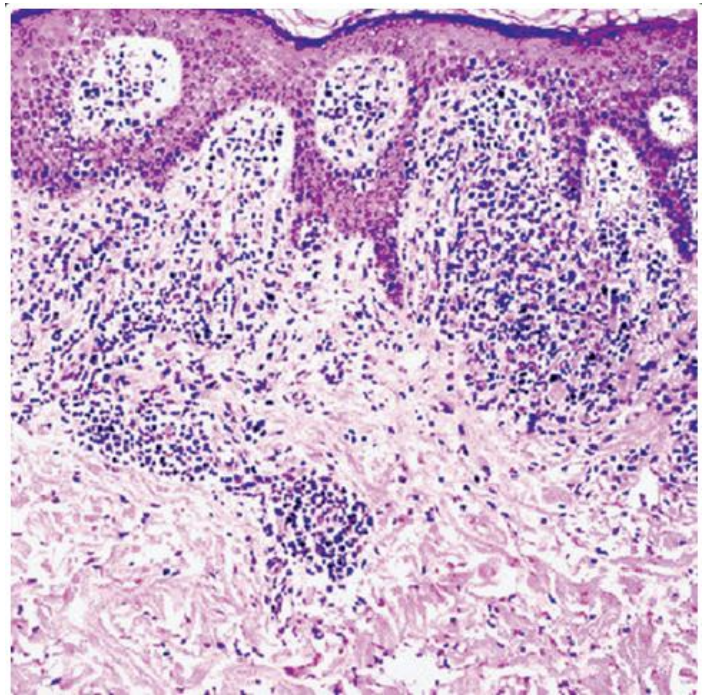
MYCOSIS FUNGOIDES USUALLY MANIFESTS IN THREE STAGES:

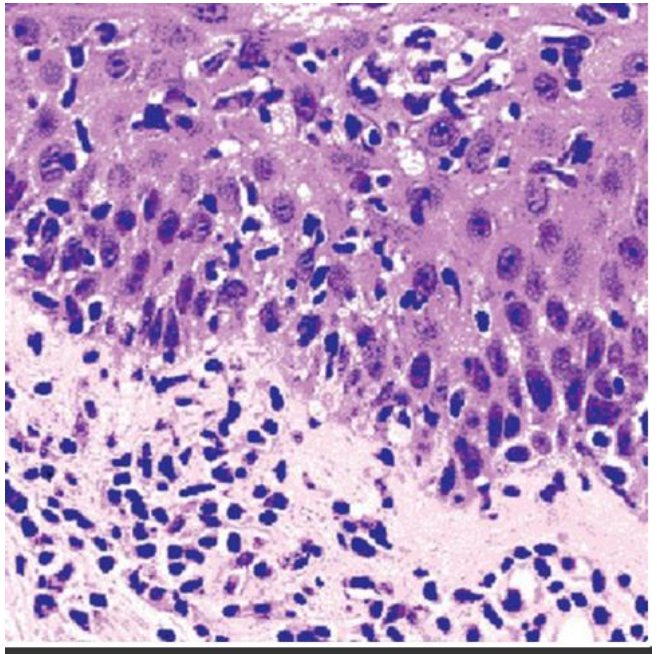
- A nonspecific erythrodermic rash (patches)
- Progresses in time to a plaque phase.
- A tumor phase.



MORPHOLOGY

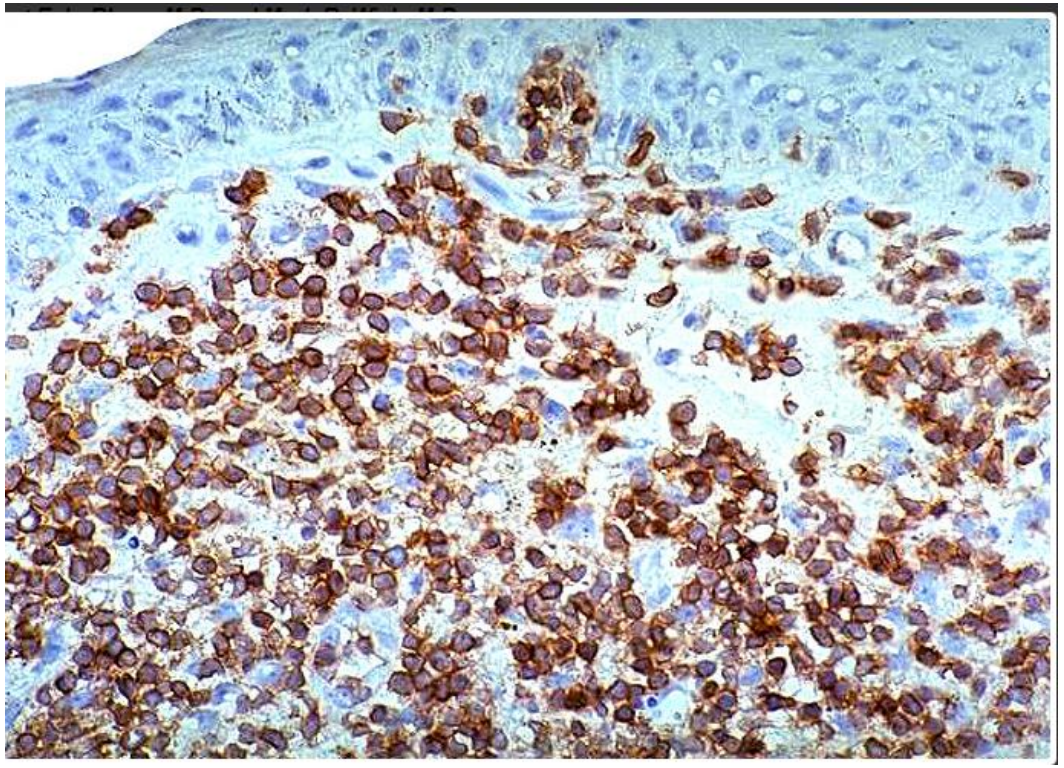
- infiltration of epidermis & upper dermis by neoplastic T cells with marked infolding of the nuclear membranes → a **cerebriform** appearance.





IMMUNOPHENOTYPE

- Tumor cells are CD4 +, CD8 –
- Clonal rearrangement of the T cell receptor
-



- Any question?