# Hemepath Case 44: 17-Year-Old Male

## HISTORY

A 17-year-old male visits his family physician. He has lost 10 lbs in the past 2 months, and has experienced cyclic episodes of fever: 1-2 weeks of fever alternating with afebrile periods. For the past few weeks, he has woken up in the middle of the night with drenching night sweat, sometimes so severe that he has had to change his pajamas. During the day, his entire body would feel incredibly itchy. The patient had mononucleosis 1 year prior, but is otherwise in good health.

Physical examination reveals palpable cervical lymph nodes that are non-tender and rubbery in consistency. Splenomegaly is also noted. There are multiple scratch marks and excoriations throughout the patient's body.

## CBC

| | |
|---|---|
| Hgb (g/L) | Low |
| MCV | N |
| WBC | N |
| Plt | Low |

## DESCRIPTION OF SLIDES

### Lymph Node Biopsy (Slide 44a)

The lymph node shows a nodular pattern with intervening bands of sclerosis. The nodules contain a mixed inflammatory infiltrate with eosinophils (see rectangles) and numerous Reed-Sternberg cells (see circles) as well as other Hodgkin cell variants, including lacunar cells (see arrow).

### Bone Marrow Biopsy (Slide 44b)

The bone marrow biopsy shows extensive fibrosis with a mixed inflammatory infiltrate, including eosinophils (see rectangles). Reed-Sternberg cells (see circles) are relatively easily found.

*** To see the slide annotations in Imagescope, click on VIEW, then ANNOTATIONS, and then on the "eye" icon adjacent to the word "Layers". In the "Layer Attributes" box, a brief description of the annotations is provided. You may also click on individual layer region (e.g. region 1) in the "Layer Regions" box to locate each annotation – this is especially helpful in identifying annotations when the slide is not zoomed in. ***

## MORPHOLOGICAL DIAGNOSIS

Hodgkin lymphoma, involving node and marrow

## DISCUSSION

Classic Hodgkin lymphoma (HL) is a monoclonal B-cell malignancy characterized by the presence of Reed-Sternberg cells or other Hodgkin cell variants. It can be divided into 5 subtypes: the classic subtypes are nodular sclerosis, mixed cellularity, lymphocyte-depleted, and lymphocyte-rich; the nodular lymphocyte-predominant variant is a unique subtype. Different subtypes have different age prevalence, histological features, and prognoses.

Patients typically present with painless lymphadenopathy, most commonly in the cervical region, and B-symptoms (unexplained weight loss of >10% in the past 6 months, drenching night sweats, and fever of ≥38°C). A cyclical fever (Pal-Epstein fever), as well as pruritus, may also be seen. In some patients, a history of EBV infection appears to be linked to the development of HL.

Reed-Sternberg (RS) cells are multi-nucleated giant cells of B-cell origin and make up only a small proportion (usually <<1%) of the tumor mass. The remainder of the mass consists of reactive inflammatory cells, including neutrophils, lymphocytes and plasma cells, as well as eosinophils and histiocytes.

Bone marrow involvement, as seen in this case, is uncommon. When present, it may appear as paratrabecular fibrosis in the marrow, with embedded eosinophils. It may be challenging to demonstrate individual RS cells.

Hodgkin lymphoma cannot be readily subtyped from the marrow alone, as the different HL subtypes tend to have a common marrow appearance. The presence of Hodgkin lymphoma in the marrow is usually a late finding, and is generally seen only in patients with widespread (i.e. extranodal) involvement.