



## Hemepath Case 26: 3-Year-Old Boy

### HISTORY

A 3-year-old boy is brought in by his mother. He started complaining about pain in his left hip a week ago, and developed a limp over the past few days. This morning, he can no longer walk and is having difficulty standing. The mother also notices a bruise around his left eye although there is no history of trauma.

On physical examination, the child appears ill and thin. A hard mass is palpated in his abdomen.

### CBC

Hgb (g/L)	Low
MCV	N
Reticulocyte Count	Low
WBC	Low
Plt	Low

### DESCRIPTION OF SLIDE

#### Bone Marrow Aspirate

There is massive marrow infiltration by malignant cells (see circles) which resemble blasts. There is very little residual hematopoiesis. Malignant cells are small to medium in size, with scant cytoplasm and occasional vacuolations, as well as fine nuclear chromatin. Their morphology is reminiscent of the malignant lymphoid blasts of acute lymphoblastic leukemia, except for the clumps of cells forming pseudorosettes (see rectangle).

\*\*\* 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

Neuroblastoma

## DISCUSSION

Neuroblastoma is an embryonal malignancy derived from neural crest cells of the sympathetic nervous system, and is the most common extracranial solid tumor in infancy. It usually arises from the adrenal glands, but can originate anywhere along the sympathetic neuraxis. The tumor may present as a hard mass in the neck, thoracic region, or in the abdomen. Frequently, patients present with metastatic bone pain and a limp. In this patient, metastasis to the orbital bones gives rise to periorbital ecchymoses. Aspiration/biopsy from an infiltrated bone marrow shows clusters of neuroblastoma cells – small, uniform blue cells with dense nuclei and scant cytoplasm. Homer-Wright pseudorosettes (neuroblastoma cells surrounding neuritic processes) may also be observed.