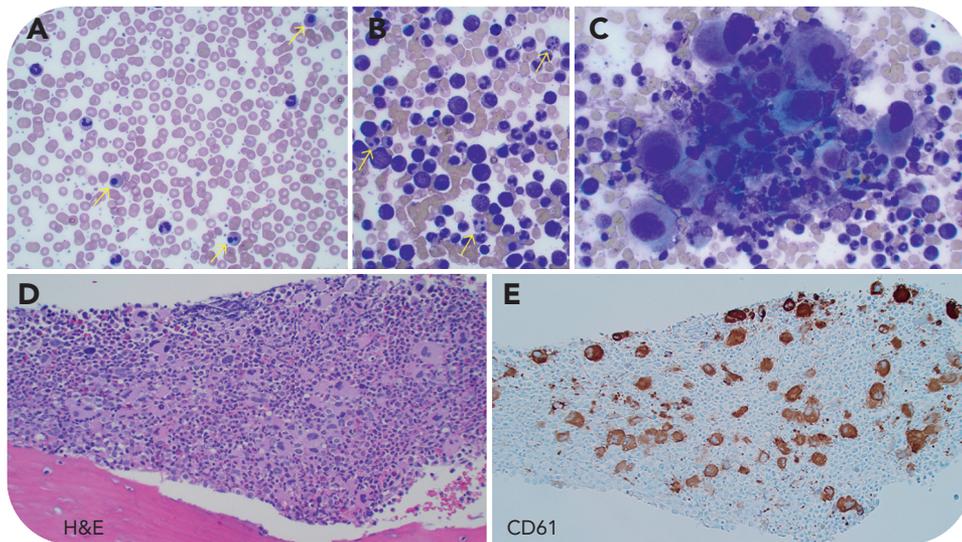


## A 3-year-old with chronic myeloid leukemia

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A 3-year-old girl presented with 4 months of persistent thrombocytosis (range:  $800-900 \times 10^9/L$ ). She had no splenomegaly or hepatomegaly, and white blood cell counts were within the reference range. The differential diagnosis included reactive thrombocytosis vs essential thrombocythemia. Three months later, thrombocytosis ( $1382 \times 10^9/L$ ), leukocytosis ( $53.7 \times 10^9/L$ ), neutrophilia ( $36.1 \times 10^9/L$ ) with left shift (3% myelocytes, 2% metamyelocytes), many necrobiotic neutrophils (panel A, 40 $\times$  lens objective, Wright-Giemsa stain), basophilia ( $4.3 \times 10^9/L$ ), and eosinophilia ( $2.6 \times 10^9/L$ ) were observed. Eight months after her initial presentation, myeloid left shift, increased myeloid to erythroid ratio ( $\sim 10:1$ ), no increase in blasts (confirmed by flow cytometry), occasional necrobiotic neutrophils (panel B, 40 $\times$  lens objective, Wright-Giemsa stain), and hypercellular marrow

(>90%) with increased megakaryocytes (many small, unilobated, and clustering) were noted on bone marrow aspirate and biopsy (panel C, 40 $\times$  lens objective, Wright-Giemsa stain; panel D, 20 $\times$  lens objective, hematoxylin and eosin stain; panel E, 20 $\times$  lens objective, CD61 stain). Cytogenetic studies showed an abnormal female karyotype, 46,XX,t(9;22)(q34;q11.2) [17]/46,XX [3], whereas next generation sequencing revealed a *BCR::ABL1* producing the p210, b3a2 (e14a2) fusion product, without additional abnormalities, consistent with a diagnosis of chronic myeloid leukemia (CML), chronic phase.

CML is rare in childhood, accounting for  $\sim 2\%$  of all leukemias in children younger than 15 years and being extremely rare in infants and young children.