Acute megakaryoblastic leukaemia: light microscopy and scanning electron microscopy of blast cells

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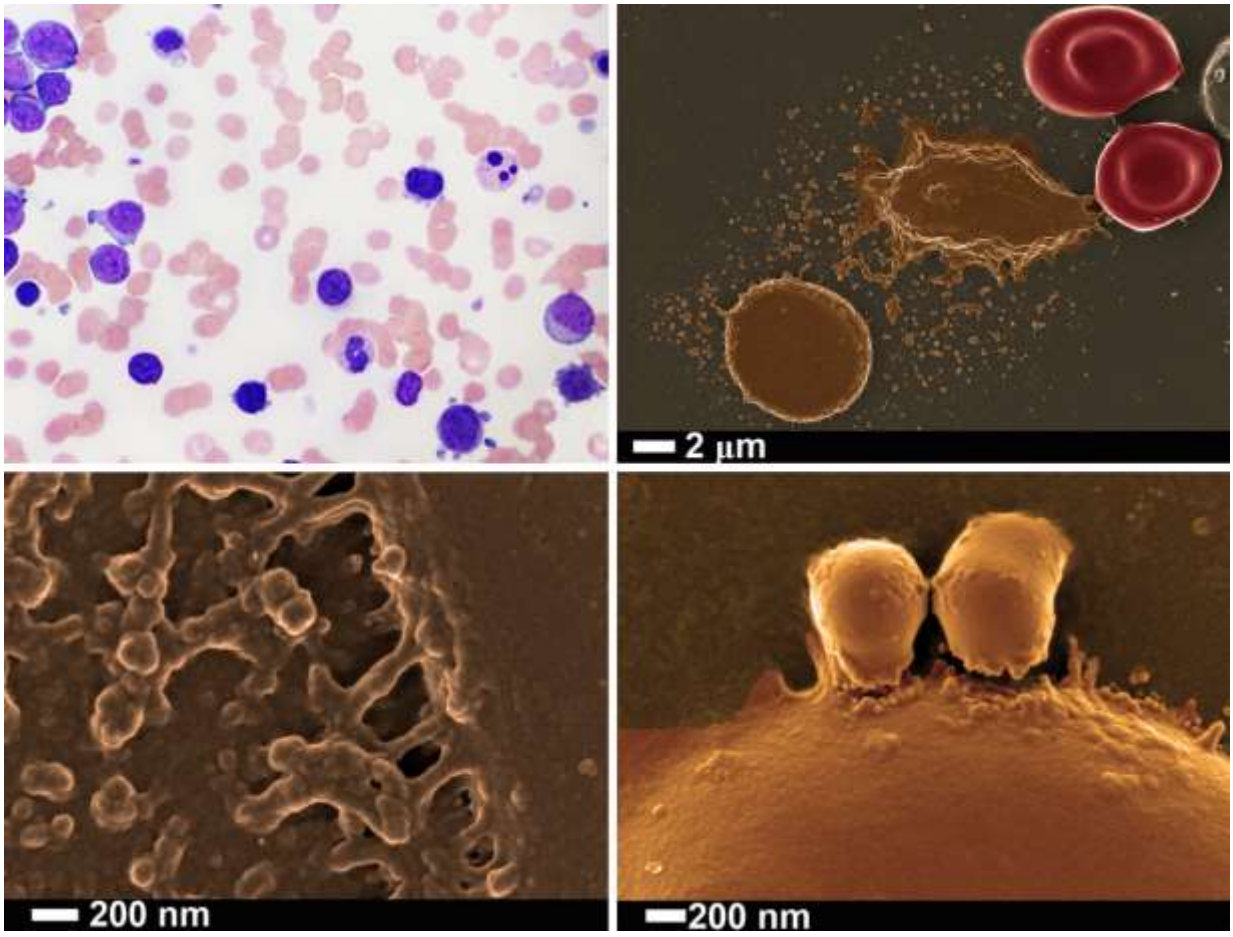

A 60-year-old human immunodeficiency virus-positive woman presented with splenomegaly. Her full blood count showed a high white cell count (162 × 10^9/l), low haemoglobin concentration (83 g/l) and low platelet count (100 × 10^9/l). A peripheral blood film showed blast cells with distinct cytoplasmic blebbing. Immunophenotyping showed 85% blast cells, which expressed CD33 and surface and cytoplasmic CD13. Subsets expressed CD34, CD36, CD38, CD45, HLA-DR and CD61. Glycophorin A, other myeloid markers and B- and T-lineage markers were negative. Cytochemistry for myeloperoxidase was negative. Light microscopy (top left; ×50 objective) and scanning electron microscopy of whole blood films (other images) show the ultra-structure of blast formation. The top right micrograph shows two red cells and two blast cells, and the lower two micrographs show blast cells, at high magnification, shedding particles from their membranes; A diagnosis of acute megakaryoblastic leukaemia was made with characteristic positivity for CD61 and CD36. Acute megakaryoblastic leukaemia is rare, comprising less than 5% of cases of acute myeloid leukaemia (AML). Prognosis is poor compared to other types of AML. Splenomegaly is an infrequent finding. The patient was refractory to induction therapy with no reduction in blast count occurring.