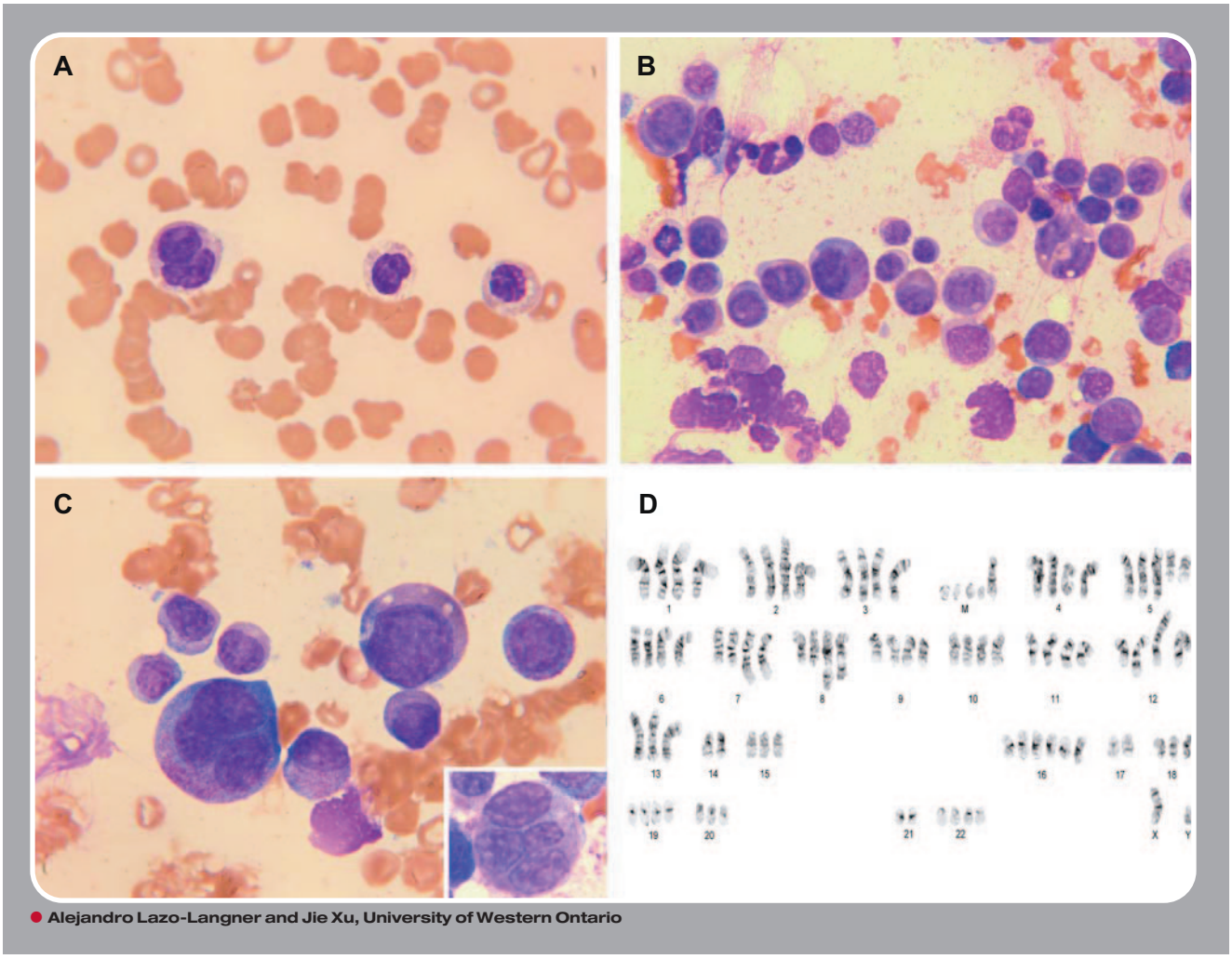
bloodwork
IMAGES IN HEMATOLOGY

Myelodyspastic syndrome with complex cytogenetics



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A 74-year-old man with colorectal carcinoma treated with surgery and adjuvant chemotherapy with oxaliplatin and fluorouracil 6 years previously was admitted with fever and suspicion of sepsis. Laboratory tests showed hemoglobin 137 g/L, mean corpuscular volume 94.7 fL, platelets 177 $\times$ 10^9/L, leukocytes 2.0 $\times$ 10^9/L, and neutrophils 0.8 $\times$ 10^9/L. Within 4 days his condition deteriorated rapidly with progressive pancytopenia and severe neutropenia. A peripheral blood smear showed hyposegmented neutrophils (pseudo–Peger-Huët cells) and abnormal granulation (see figure panel A). A bone marrow aspirate revealed markedly dysplastic changes predominantly affecting granulocytic precursors with multinucleated forms and dysplastic granulation (panel B, panel C inset). Cytogenetic analysis showed a complex karyotype with multiple numeric and structural anomalies (panel D; G-banded karyogram of 1 metaphase cell of the bone marrow showing hypotetraploidy with 88 chromosomes and multiple anomalies including several derivative and dicentric chromosomes, duplications, robertsonian translocations, and 5 markers). The patient's condition did not improve and he died 19 days after admission.

Infection with pancytopenia is a common problem. When it occurs in patients with previously diagnosed malignancy, metastatic disease and delayed drug effects are a consideration. In this case, the peripheral smear and marrow revealed myelodysplasia, presumably drug-related.