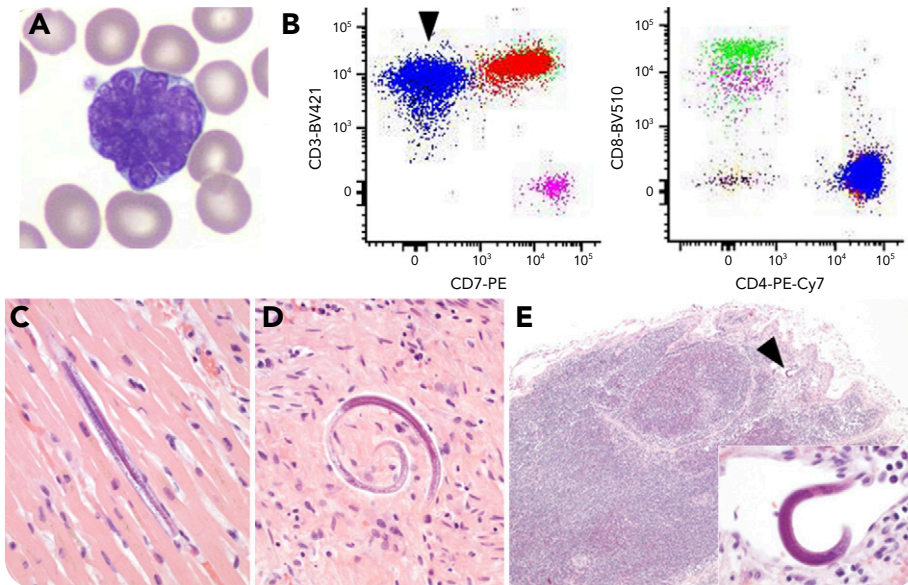


## HTLV-1–associated adult T-cell leukemia/lymphoma with disseminated strongyloidiasis

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A 66-year-old Jamaican man presented with weakness, nausea, night sweats, and weight loss and was found to have a diffuse rash and lymphadenopathy. Laboratory studies were notable for hypercalcemia (15.9 mg/dL), as well as an increased white blood cell count ( $12.92 \times 10^9/L$ ) with a lymphocytosis ( $9.0 \times 10^9/L$ ). Atypical lymphocytes were seen on the peripheral smear (panel A; Wright-Giemsa stain, original magnification  $\times 100$ ). Flow cytometric evaluation of the peripheral blood demonstrated a CD4:CD8 ratio of 18:1, and 43% of the CD4<sup>+</sup> T cells showed loss of CD7 (panel B, arrow; PE, phycoerythrin) with partial expression of CD25. An assay for human T-lymphotropic virus-1 (HTLV-1) was positive. The patient was diagnosed with acute adult T-cell leukemia/lymphoma (ATLL) and admitted for chemotherapy (cyclophosphamide, doxorubicin, etoposide, vincristine, and prednisone). On the second day of

therapy, the patient's condition worsened, and he subsequently died. Autopsy showed wide dissemination of *Strongyloides stercoralis* filariform larvae, including involvement of the heart (panel C; hematoxylin & eosin (H&E) stain, original magnification  $\times 50$ ), lungs, liver, pancreas, small bowel (panel D; H&E stain, original magnification  $\times 50$ ), skin, and testes. The lymph nodes were involved by ATLL and rare parasites were seen within sinuses (panel E; H&E stain, original magnification  $\times 2$  [inset, original magnification  $\times 50$ ]).

Infection by HTLV-1 is a significant risk factor for developing *Strongyloides* hyperinfection, and strongyloidiasis increases the risk of developing ATLL. Patients with both ATLL and disseminated strongyloidiasis have a high mortality rate.