A case of anaplastic large cell lymphoma diagnosed by immunostaining on cytology

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Clinical Presentation
A patient in his 60’s presented with enlargement of a left cervical lymph node. Imaging studies revealed the enlarged lymph node measuring 3-4 cm in diameter. No other mass lesions were detected in the other lymph nodes or organs. He underwent a FNAB (fine needle aspiration biopsy).

Histological findings
The diagnosis was further confirmed by a surgical nodal biopsy performed 10 days later. The nodal architecture is effaced by cohesive sheets of large tumor cells. The cells have large eccentric nuclei and eosinophilic cytoplasm. The cells are positive for CD30 and EMA.

Cytological Findings
Direct smears were prepared from the FNAB. Many atypical cells arranged as individual cells or small aggregates were present in a hemorrhagic background. The cells were large nuclei with irregular membranes. Large nucleoli and nuclear hyperchromasia were also noted. The tumor cells also had abundant cytoplasm and were partially cohesive. Immunocytochemistry using the cell transfer method was conducted to determine the differential diagnosis between poorly differentiated carcinoma and lymphoma. The tumor cells were positive for EMA, CD30 and CD25, and negative for CK AE1/AE3 and CD20, leading to the diagnosis of anaplastic large cell lymphoma (ALCL).

Flow cytometry, cytogenetics and T-cell rearrangement tests
Flow cytometry showed positive T-cell antigens such as CD2,3,5 and 7 and negative B-cell antigens such as CD 10 and 19.

Discussion
ALCL often show focal cell-cell adhesion and epithelioid abundant cytoplasm, the cytological features can be misdiagnosed as poorly differentiated carcinomas. Given that ALCL is usually positive for CD30, immunostaining on cytology samples would be useful for this challenging differential diagnosis.

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COI Disclosure Information
Name of author: AIKO KYOTAKE
I have no relevant financial relationships to disclose.