

Olivia Twu¹, Jessica Chan² and Christopher G Tang³

¹Kaiser San Francisco Department of Medicine, ²Kaiser Oakland Department of Pathology, and ³Kaiser San Francisco Head and Neck Surgery

Introduction

Primary cutaneous ALCL is a member of a disease spectrum of CD30+ lymphoproliferative disorders that has many clinical, histologic, and immunophenotypic features of systemic ALCL. It accounts for approximately 9% of all cutaneous T-cell lymphomas, however has great survivability when it presents without systemic or regional involvement. The disease typically affects patients in their sixth decade, with a slight male predominance, and most cases have been diagnosed in Caucasians.

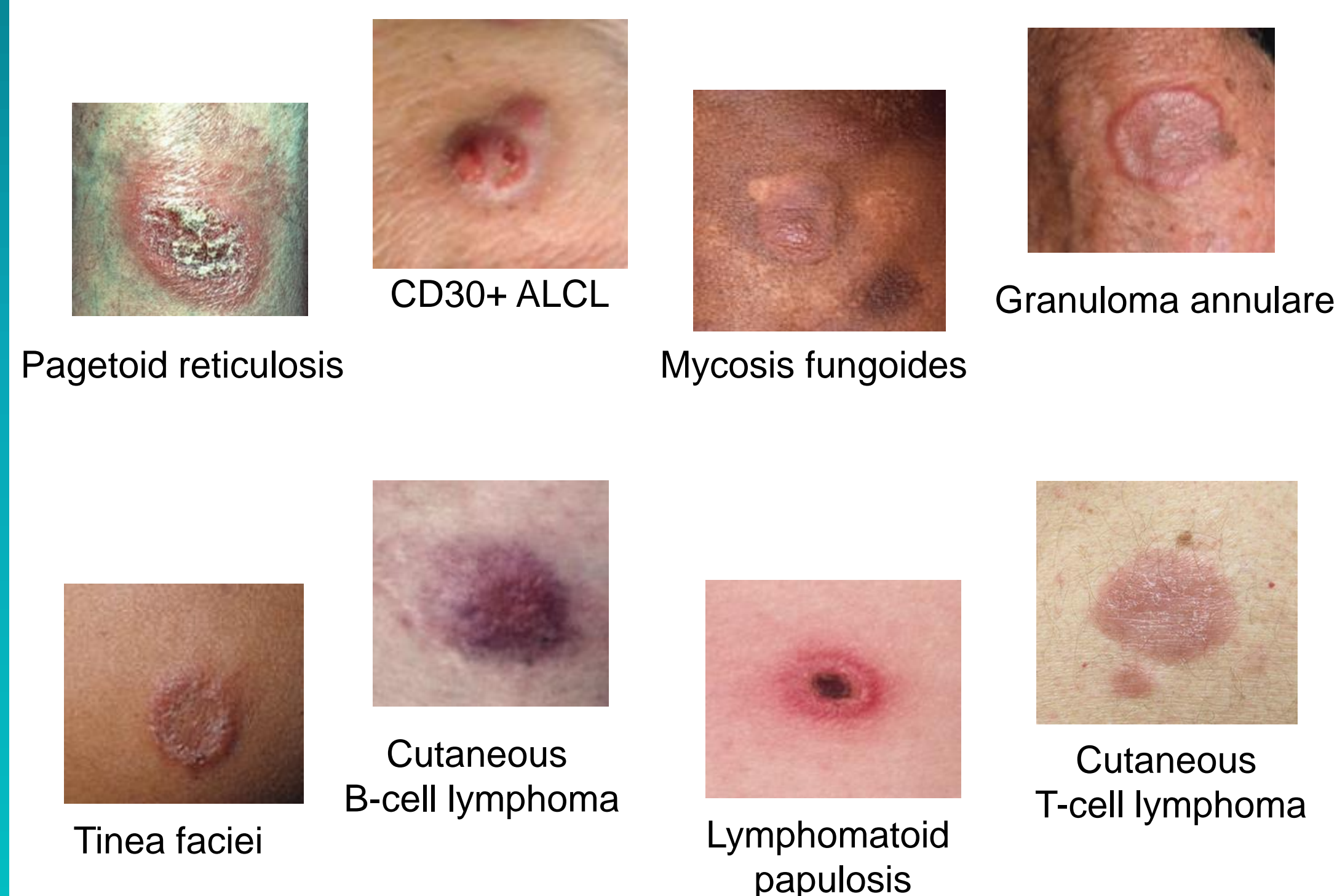
Case history

A 51-year-old African American female presented to primary care with a left temporal lesion that began as a 1 x 1.3 cm patch of occasionally pruritic dry skin. She saw dermatology 2 months prior to her ENT visit (pictured on left below) and was treated with several different strengths of steroids. The lesion subsequently grew with two additional nodules appearing nearby and became tender (pictured on R below). At presentation to ENT, the lesion was a 2 x 2.5 cm soft pink nodular plaque without ulceration. The patient denied pain, weight loss, or bleeding. She had no prior history of malignancy, autoimmune, or rheumatological diseases.



The patient's lesions demonstrate key features of cutaneous ALCL: solitary or multiple raised erythematous skin lesions, typically nodules which persist over time and have a tendency to ulcerate and be pruritic.

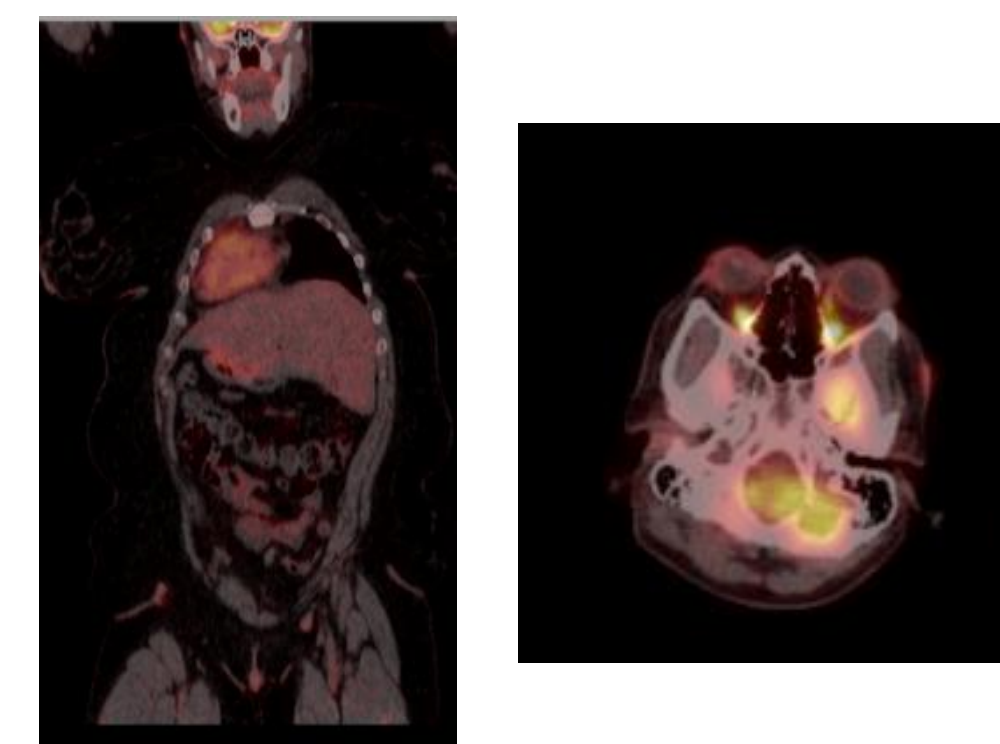
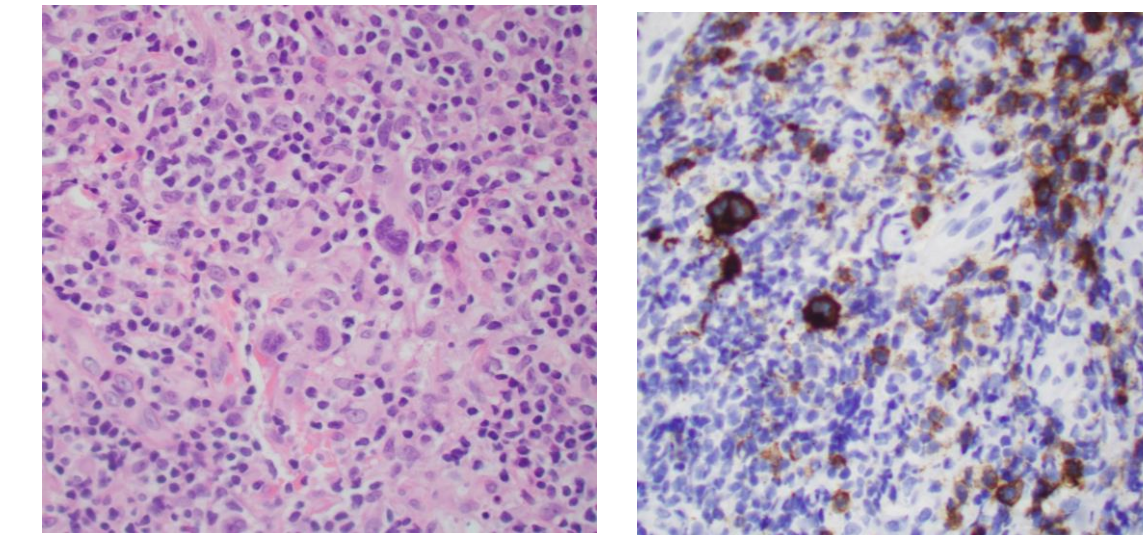
Differential Diagnosis



Photos from Andrews textbook and Arch Plast Surgery 2015;42(2):259-261

Work-up

Photomicrographs of skin biopsy specimens showing dense diffuse infiltration of lymphocytes, hematoxylin & eosin stain on left and CD30 stain on right, both 40X magnification.

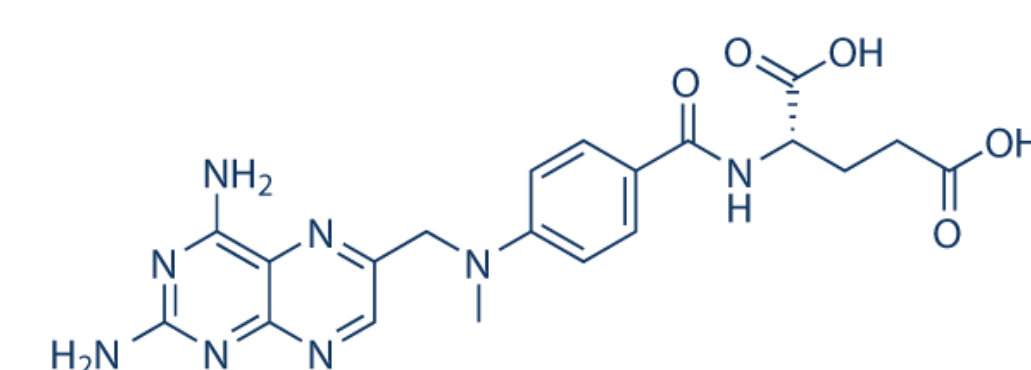


PET scan is required to rule out systemic involvement. In our case, the patient's PET (pictured at left) showed the hypermetabolic lesion on the face but was otherwise negative indicating she has localized primary cutaneous ALCL.

Typical Pathology in Cutaneous ALCL

- Cohesive sheets of CD 30+ large cells with an anaplastic, pleomorphic, or immunoblastic morphology
- Few inflammatory cells
- Reed-Sternberg-like cells (not found in systemic ALCLs): neutrophil-rich, sarcomatoid keratoacanthoma-like variants
- ALK expression rare

Treatment of ALCL

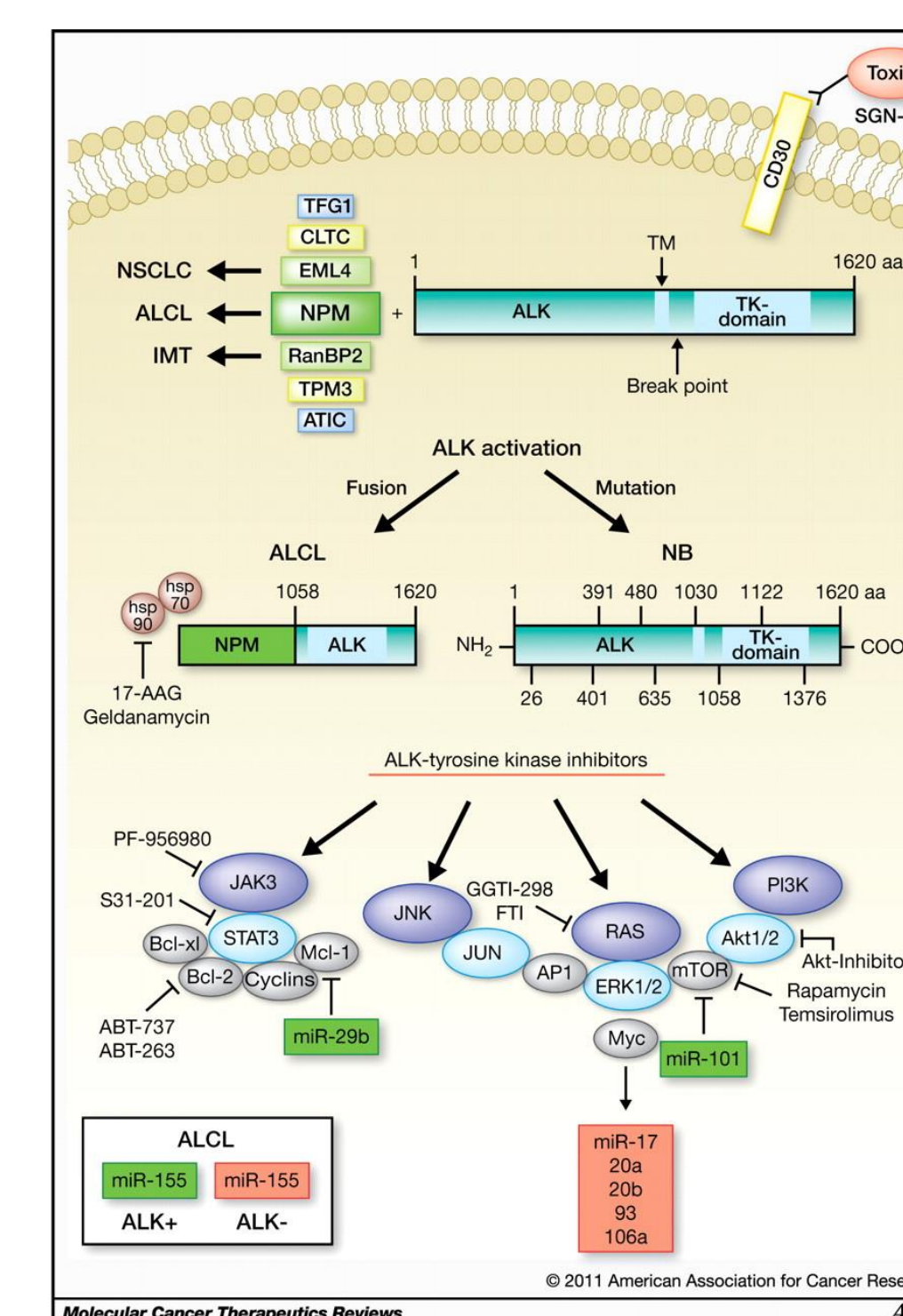


Primary cutaneous ALCL is treated by **irradiation** for localized tumors which our patient is receiving. In patients with multifocal tumors, methotrexate (structure pictured to left) is used.

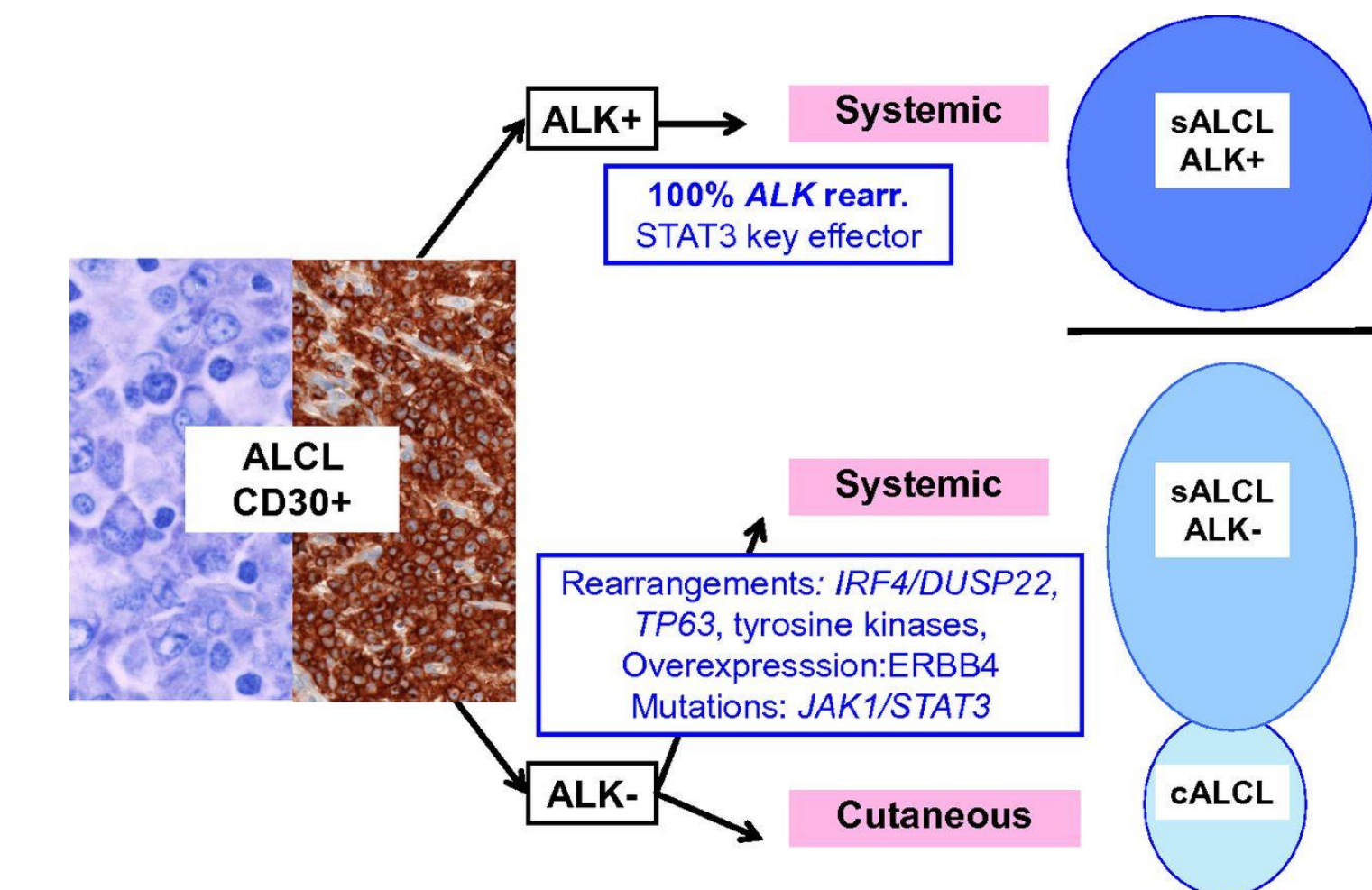
After 1 month of XRT, the patient's lesion has completely cleared (pictured below).



Systemic ALCL is treated by multi agent chemotherapy with bone marrow transplant used for refractory cases. Figure on the right taken from Merkel et al depicts possible new drug targets.



Brief Review of ALCL



Schematic representation of ALCL subtypes taken from Gaulard et al.

Primary Cutaneous ALCL	Systemic ALCL ALK Positive	Systemic ALCL ALK Negative
<ul style="list-style-type: none"> - Older patients, median age 60s - Localized or generalized cutaneous manifestations, may have regional node - Extra cutaneous involvement in 5-10% - 5 year survival >90-95% 	<ul style="list-style-type: none"> - Children and young adults, median age 30s - M > F - Involves lymph nodes and extranodal sites - 5 year survival 23-90% depending on stage 	<ul style="list-style-type: none"> - Adults, median age 50s - M = F - Involves lymph nodes and extranodal sites - Skin manifestations in 20% of patients - 5 year survival 13-74% depending on stage

Table adapted from Querfeld et al.

Summary

Primary cutaneous ALCL typically presents in people in their sixth decade with a slight male predominance and is more common in those treated with anti-tumor necrosis factor drugs. Here we present a case in an African American female with no known risk factors and a more indolent presentation and progression. Chronic solitary skin lesions, no matter how benign appearing, should be biopsied for definitive diagnosis.

References

1. Merkel O et al. Novel Therapeutic Options in Anaplastic Large Cell Lymphoma: Molecular Targets and Immunologic Tools. *Molecular Cancer Therapeutics*. 2011; 10(7): 1127-36.
2. Gaulard P and Leval L. ALK-negative anaplastic large-cell lymphoma. *Blood* 2016; 127:175-177.
3. Kadin ME. Management of Primary Cutaneous CD30+ T-Cell Lymphoproliferative Disorders. *Oncology*. 2009; 23(13) 1158-64.
4. Shaum K and Aycock J. Cutaneous T-Cell Lymphoma with Nasal Necrosis. *Arch of Plastic Surgery*. 2015; 42(2):259-61.
5. Lee WJ et al. Cutaneous anaplastic large cell lymphoma (ALCL): A comparative clinical feature and survival outcome analysis of 52 cases according to primary tumor site. *J Am Acad Derm*. 2016; 74(6):1135-53.
6. Tilly et al. Primary Anaplastic Large-Cell Lymphoma in Adults: Clinical Presentation, Immunophenotype, and Outcome. *Blood*. 1997; (90)9:3727-34.
7. James, W. D., Elston, D. M., Berger, T. G., & Andrews, G. C. (2011). *Andrews' Diseases of the skin: Clinical dermatology*. London: Saunders/ Elsevier.
8. Querfeld C et al. Primary Cutaneous and Systemic Anaplastic Large Cell Lymphoma. *Oncology*. 2010; 24(7): 574-87.