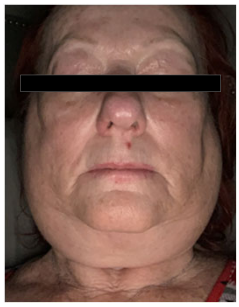
"Why Am I A Balloon?"

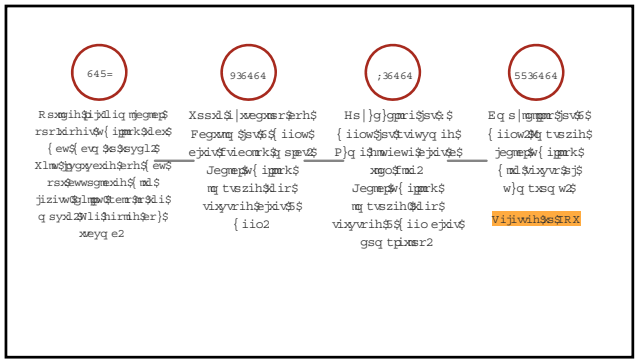
G. Alden Adkins, MD; Atish Dey, DO; Brett Kurpiel, MD
Faculty Mentor: Donald Kimpel, MD

Presented by: G. Alden Adkins, MD
University of Virginia
Department of Internal Medicine
Division of Clinical Rheumatology

History of Present Illness

A 67 year old woman with no prior medical history presents with 2 years of painless **neck and facial swelling**



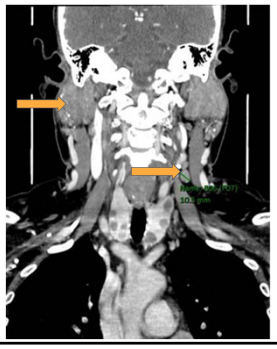


ENT Visit

Exam:
L>R parotid gland enlargement
Poor dentition
Enlarged submandibular LN

Nasolaryngoscopy: normal

Labs:
CBC: 3.94>14.2/43<217
ALC: 0.70
CMP: WNL
ESR: 15
CRP: 0.9 mg/dL



- **Diffuse enlargement** of bilateral parotid and submandibular glands with buckshot calcifications
- Borderline level II right **cervical lymphadenopathy**

Referred to Rheumatology

Rheumatology Visit

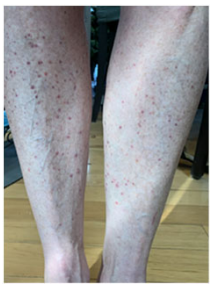
Review of Systems:
Endorses oral and ocular sicca symptoms

Exam:
T 98.0, HR 84, BP 142/82, RR 16, 98%

Equal bilateral parotid and submandibular gland enlargement
Enlarged submandibular LN
Enlarged right cervical LN

No lacrimal gland swelling
Normal salivary pooling

Purpuric, non-palpable rash on the bilateral LE



Family History:
Mother: RA
Father: CAD, stroke
Sister: fibromyalgia, RA
Sister: breast cancer, leukemia

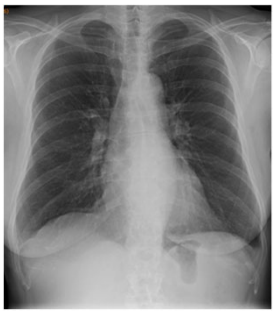
Social History:
Denies EtOH, tobacco, illicit drugs

No recent travel, but has traveled to Fiji, Middle East, Brazil, Africa

Has 1 cat

Medications:
None

What is your differential diagnosis and what additional work-up is appropriate?



Labs:
CBC **3.06**>14.2/44.9<241
ALC 0.66
CMP: WNL
ANA: **1:640 speckled**
Anti-SSA/SSB: negative
Anti-Smith: negative
Anti-RNP: negative
C3: 96, **C4: undetectable**

SPEP: no anomalous Ig
ESR: 24, CRP 1.6 mg/dL
Rheumatoid factor: 69.6 IU/mL

Hep B/C, HIV, syphilis, QFTB negative

UA: no blood, no protein

Labs

Peripheral flow cytometry:
- Inverted CD4:CD8 ratio
- **Low** B cells
- **Low** T cells
- **Low** NK cells
- Inverted CD4:CD8 ratio

Peripheral TCR-PCR:
- Oligoclonal T-cell receptor gamma chain gene rearrangement

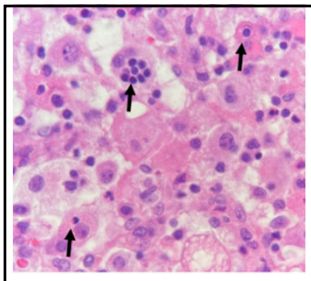
Immunoglobulins:
- **Low** IgA
- **Low** IgM
- **Low** IgE
- **Low** total IgG (410)
- Normal IgG4 (7.5)

Additional Complement studies:
- Complement C1Q: 7
- C1q esterase inhibitor functional: 90
- C1q esterase inhibitor total: 32
- Circulating immune complexes: 4.1 (N)

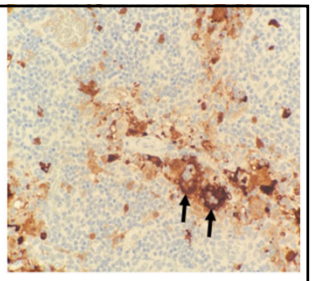
ANCA screen negative

CT chest/abdomen/pelvis
- No abnormalities

Proceeded to LN biopsy



Scattered, large, eosinophilic histiocytes demonstrating **emperipolesis (arrows)** with engulfed lymphocytes and neutrophils within histiocyte cytoplasm
(Hematoxylin & eosin, 1000x original image, oil immersion)



Immunohistochemical staining for **S100 highlights abnormal histiocytes (arrows)** with non-staining intracytoplasmic lymphocytes present
(S100 immunohistochemistry, 400x original image)

Diagnosis: Rosai-Dorfman Disease

Rosai-Dorfman Disease secondary to presumed SLE

- Additional lymph node biopsy data was consistent with multiple polyclonal T-cell and B-cell populations.
- Seen by hematology: **no evidence of a hematologic malignancy**. Infectious causes also ruled out
- Hydroxychloroquine 400mg daily initiated for **presumed SLE**, which eventually resulted in resolution of facial swelling
  - On last follow-up in August 2022, **she reported no new swelling**
- Continues to follow with hematology for genetic evaluation and monitoring for malignancy.

Teaching Points: Rosai Dorfman Disease

- Rare, nodal-based, proliferative histiocytic disorder most frequently presenting as **bilateral cervical lymphadenopathy**
- Pathogenesis possibly related to disordered immune regulation/response in **autoimmunity** as well as **certain infections** such as HSV, EBV, CMV, Brucella, Klebsiella
- Diagnosis is histopathologic characterized by tissue infiltration by lymphocytes, histiocytes, plasma cells. **Emperipolesis** (engulfment of lymphocytes and erythrocytes by histiocytes) is diagnostic. S-100 IHC staining is positive
- Achieving control of underlying autoimmune disease usually resolves symptoms. Most cases do not have robust response to conventional DMARDs, and **Rituximab** has shown some promise
- Mimics: **leukemia**, **lymphoma**, Langerhans cell histiocytosis, Erdheim-Chester, **CTDs, Sarcoidosis, IgG4-RD**

Teaching Points: Rosai Dorfman Disease

Approach for the Rheumatologist:

1. Rule out: infections, malignancies, and genetics
2. Evaluate for autoimmune disease
3. If no underlying autoimmune disease found and only nodal involvement, may try observation only **or**
4. Treat "driving" autoimmune condition:
   a. If initial disease, consider hydroxychloroquine
   b. If resistant disease, consider Rituximab and steroids
5. Frequent, thorough re-evaluations with IgG4-RD in mind

References

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3. Abla O, Jacobsen E, Picarsic J, et al. Consensus recommendations for the diagnosis and clinical management of Rosai-Dorfman-Destombes disease. *Blood*. 2018;131(26):2877-2890. doi:10.1182/blood-2018-03-839753

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5. Singh A, Kanaujiya SK. The Rosai-Dorfman Disease: A Differential Diagnosis in Cervical Swelling. *Indian J Otolaryngol Head Neck Surg*. 2019;71(Suppl 1):107-112. doi:10.1007/s12070-017-1133-2

Questions?