CASE PRESENTATION

FATMA DIHOWM, MD, MS

RHEUMATOLOGY FELLOW PGY5

Consent was obtained from patient to present their case

29yo female followed by community rheumatologist for overlap syndrome with prominent exocrine involvement and possible arthritis.

- Recent hx of OD corneal perforation s/p TPK 10/2024 with failure, repeat TPK 1/17/2024 being followed in ophthalmology clinic for repeat sterile corneal melt
  - on PO prednisone 50 mg daily
- Worsening
- Admitted for IV Steroid, rheumatologic evaluation and repeat therapeutic corneal transplant

6 months prior to admission, community rheumatology evaluation:

- Inflammatory polyarthritis of hands, wrists, shoulder, knees, and ankles
- Raynaud's phenomena (2 phasic)
- Right side facial swelling (enlarged gland)
- Severe xerostomia and xerophthalmia
- Dysphagia (*must always drink additional liquids to swallow solid food*)
- Weight loss of 30 pounds in the last 6 months
- Hair loss

From community rheumatology evaluation:

1. ***Labs:***

- Rheumatoid factor 79
- ANA with titer 1: 1280 SPECKLED
- Double-stranded DNA 178 with titer >1:1280
- Positive SSA/SSB with high titer >8
- Positive Chromatin (nucleosome) Ab with high titer
- Positive RNA polymerase 3 of 22 (normal 20)
- Positive P-ANCA 1:320

- Elevated ESR 113 and CRP 22

2. Radiology:

- Bilateral hand X-ray normal no erosions
- CT chest showed a small pericardial effusion, a few interstitial markings indicative of small airway involvement for interstitial lung disease
- CT soft tissue neck with contrast: There was 2 cystic lesions with smooth rim enhancement in right parotid 2 x 1.8 x 1.9 cm. Borderline enlarged right left lymph node measuring 1.0 cm.

❖ PET/CT Full Body:

- Non FDG avid cystic lesions in the right parotid

- There was asymmetric radio tracer uptake seen within the right lateral nasopharyngeal wall without a discrete mass lesion. Increased radio tracer uptake also noted in the base of the tongue with mild soft tissue fullness Recommend further evaluation with direct visualization

- 1.1 cm right level 2 LN with radiotracer uptake slightly greater than the mediastinal blood pool, which could be reactive or metastatic

Pulmonary function test

- FVC 91%, FEV 85% FEV 1/FVC 80%
- DLCO2 reduced to 47%

Diagnosed with RA with Sjogren syndrome

- Started on **Methotrexate 8 tablets weekly, Folic acid daily, Hydroxychloroquine 300 mg daily.**
- Referred to ENT for evaluation and biopsy.

- October 2023:
  - developed perforated cornea OD and saw ophthalmology at UNM
    - Diagnosed neuropathic keratitis and underwent Tectonic Penetrating Keratoplasty 10/23 with failure

- Jan 2024
  - corneal perforation at the graft host junction, which was glued
  - repeat TPK OD

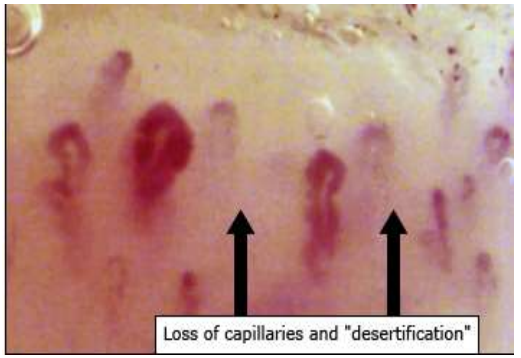
- Feb 2024
  - Further corneal melt and worsening corneal perforation centrally around glue site

Physical Exam:

- Patient in significant distress from bilateral eye pain, OD shielded and she keeps her OS shut and covered with her hand

- Mild nontender enlargement of right parotid with absent sublingual salivary pooling

- Performed nailfold capillaroscopy of the left index and right fourth finger. There were scant dilated capillary loops. The majority of the normal capillary loop pattern was disrupted replaced by disorganized, lacy appearing vasculature. Also noted was an apparent area of ischemic ulceration adjacent to the right fingernail on the ulnar side

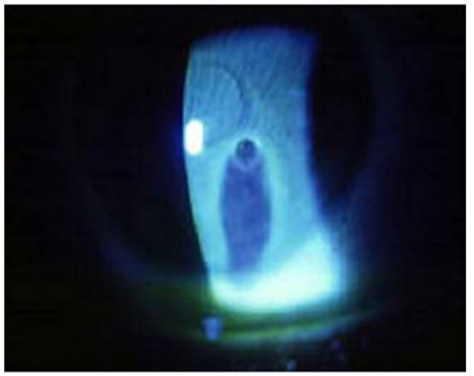


A decreased number of loops should be considered highly specific for secondary Raynaud phenomenon and induce "desertification" of the nailbed. *Copyright © 2008 UpToDate.*

Slit-Lamp/Penlight Exam

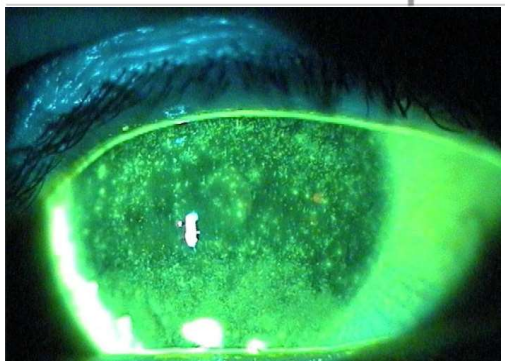
	OD	OS
External		
Lids/Lashes	WNL	WNL
Conjunctiva	Diffuse 3+ injection including deep vessels	2+ injection including deep vessels
Cornea	Central TPK sutures in place, glue over superior/temporal aspect of graft and graft host junction. Seidel positive centrally at inferior/nasal edge of glue, thinning of graft. No BCL in place	Central thinning with thin line of staining vs pooling. Diffuse SPK/PEE
Anterior Chamber	Shallow	formed
Iris	Round/Regular	Round/Regular
Lens	Clear	Clear
Anterior Vitreous	formed	formed

Positive Seidel's test

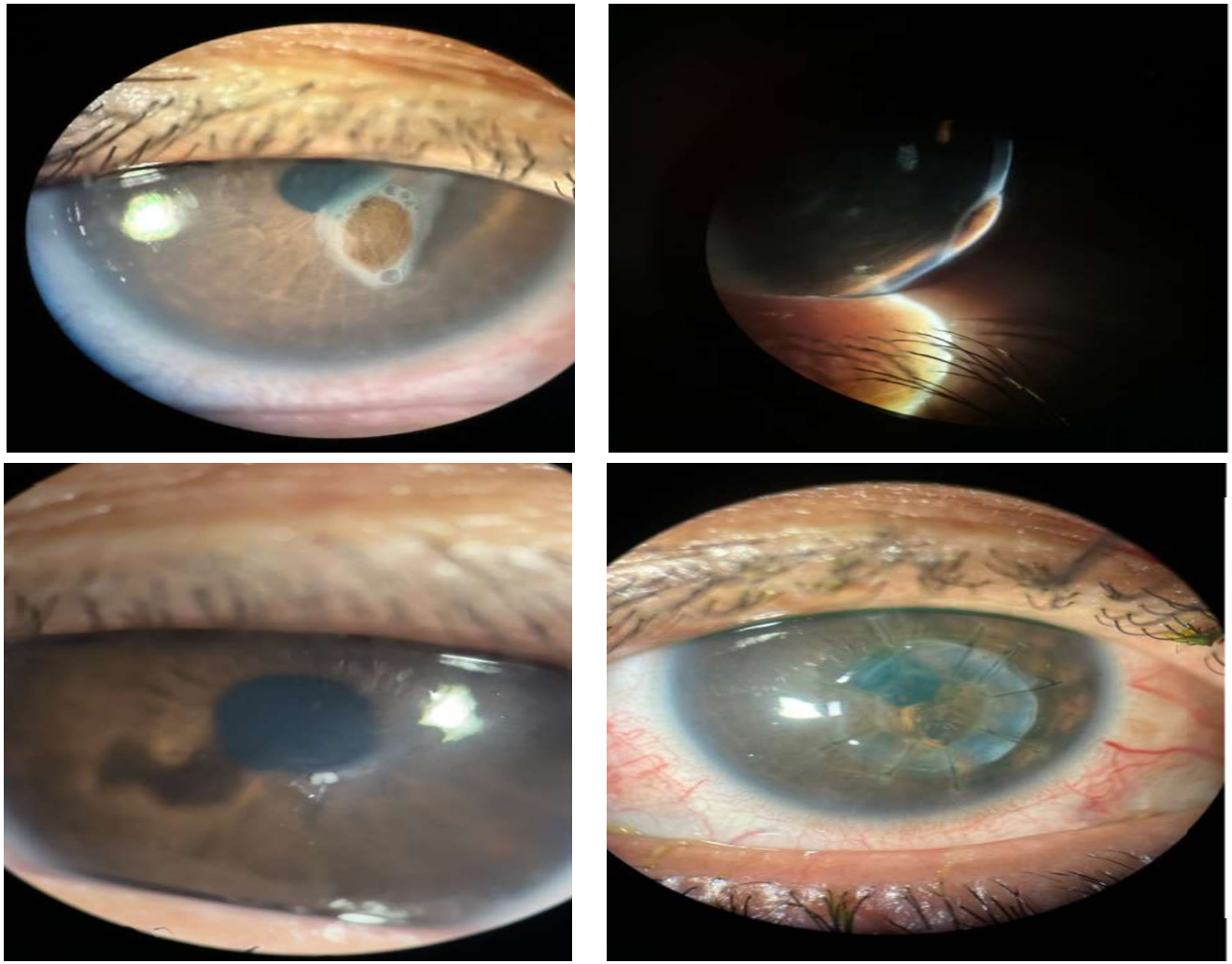


A small perforation will cause a clearing of the dense fluorescein that appears to be streaming away from the perforation site.

UpToDate®



Superficial Punctate Keratitis (multimedia AAO)



Courtesy of Alexander Davis, MD, PhD. UNM Department of Ophthalmology

➢ ***Admitted (Feb 2024):***

- Lab/serology ordered
- Consulted ENT for minor salivary gland biopsy from inner lip
- Started on methylprednisolone 1000 mg IV for total of 3 days, then switched to p.o. prednisone 40 mg daily.
- Started on rituximab 1000 mg IV per rheumatoid arthritis protocol
- PPI while on high dose steroids
- Switched PO MTX to Subq MTX 25 mg weekly

➢ *Lab Results:*

CBC and DIFF						
WBC	6.8				10.7	(H) 14.1
RBC	(L) 3.80				(L) 3.90	4.27
HGB	(L) 11.7				(L) 11.9	13.1
HCT	36				37	42
MCV	96				95	99
MCHC	32.1				32.0	(L) 31.0
Platelet Count	241				225	272
RDWC	(H) 16.9				(H) 17.3	(H) 17.4
**DIFF IS:						Auto Diff
Other						
Neutrophil Count						(H) 13.2
Lymphocyte Count						(L) 0.8
Monocyte Count						(L) 0.1
Eosinophil Count						0.0
Basophil Count						0.0
Neutrophil %						93
Lymphocyte %						5
Monocyte %						1
Eosinophil %						0
Basophil %						0
Variant Lymph %						
Other Hematology						
Sed Rate - Auto						19
C-Reactive Protein						0.4
Electrolytes Plus						
Sodium	138				140	138
Potassium	4.3				4.3	4.1
Chloride	104				105	101
Carbon Dioxide (lab)	27				27	26
Blood Urea Nitrogen	11				17	14
Creatinine	0.57				0.62	0.63
Glucose (lab)	* (H) 107				* (H) 119	* (H) 119
Calcium	9.0				9.0	9.4

Phosphorus						
Anion Gap	7				8	11
Est Creatinine Clearance	* 113				* 91	* 90
Est Glomerular Filtration Rate	NOT CALCULA				* 124	* 123
Liver Function Tests						
Total Protein			7.0			
Albumin			(L) 3.0			
AST (SGOT)			24			
ALT (SGPT)			20			
Alkaline Phosphatase			80			
Bilirubin, Total			0.4			
Bilirubin, Direct			<0.2			
Bilirubin, Indirect			Unable to cal			
Isoenzymes						
Troponin T, High Sensitivity						
Special Chemistry						
SPE - Total Protein				7.6		
SPE Interpretation				No abnormal		
Serum Immunofixation Electrophoresis				No abnormal		
Serum Albumin				3.8		
Alpha-1 globulin				0.30		
Alpha-2 globulin				0.74		
Beta globulin				0.78		
Gamma globulin				(H) 2.01		
M-protein 1				None		
M-protein 2				None		
Urine Chemistry						
Urine Creatinine - random						* 150.0
Urine Protein/Creat Ratio						0.09
Urine Total Protein - random						* 13.7

➢ *Serology results:*

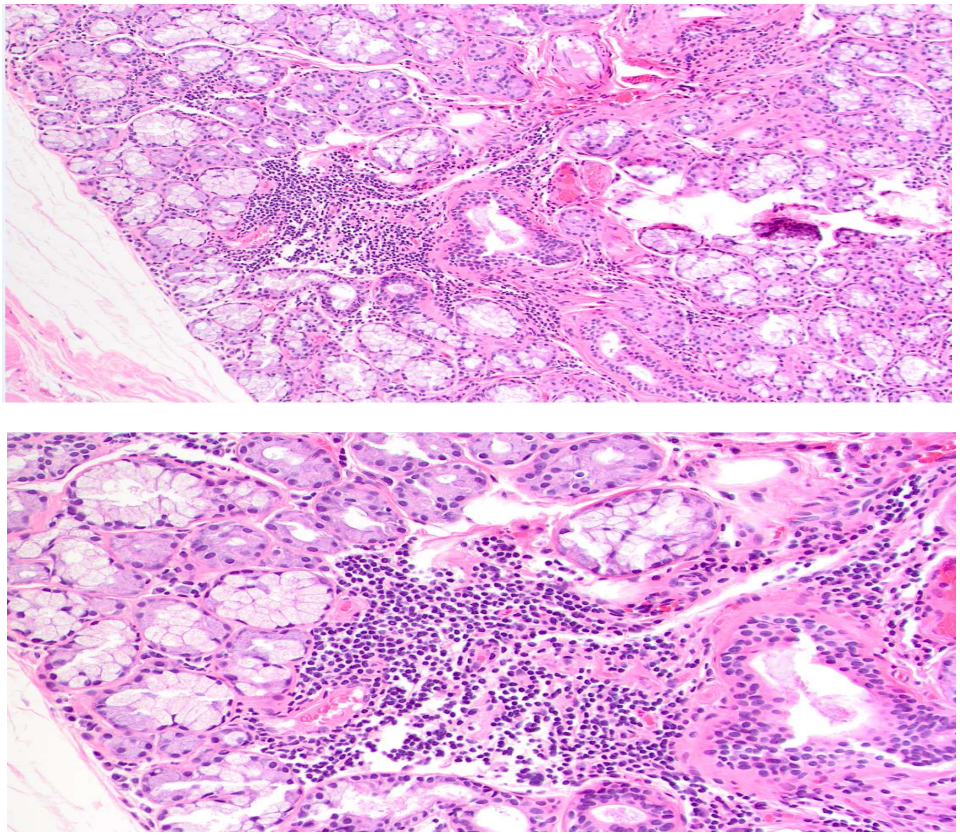
Immunoassay										
Free T4										* (H) 1.8
HCG Quantitative						<1				<1
Rheumatoid Factor										(H) 81
Antinuclear Antibody Screen						(A) Positive: (				(A) Positive
ANA titer 1						(A) >=1:2560				(A) 1:1280
ANA pattern 1						(A) ANA patte				(A) ANA patte
Anti-DNA						* (H) 40				
DNA Titer						(A) 1:640				
Antineutrophil Cytoplasm AB						Negative				
Antiproteinaase-3 Antibody						<0.2				
Antimyeloperoxidase Antibody						<0.2				
Anti-Smith Antibody						<0.2				
Anti-RNP Antibody						<0.2				
SS-A (RO) Precipitin						(H) >8.0				
SS-B (LA) Precipitin						(H) 5.7				
Immunoglobulin G			* (H) 1,789							
Immunoglobulin M			(H) 281							
Complement 3						* 113				
Complement 4						* 13				
Cyclic Citrullinated Peptide										0.5
Kappa				1.78						
Lambda				1.58						
Kappa Lambda Ratio				1.13						
TSH										* 3.060

➢ ***LOWER LIP MUCOSA; BIOPSY:***

- MINOR SALIVARY GLAND

WITH FOCUS SCORE OF 1

COMMENT: The morphologic findings would be compatible with diagnosis of
Sjogrens syndrome in the proper clinical and serological context. Clinical correlation is recommended.



Courtesy of Aysha Mubeen, MD. UNM Pathology Department

- ***Hospital Course:***

- Pt was discharged with diagnosis of ***Seropositive RA with overlap Sjogren's syndrome*** to follow-up with her primary rheumatologist on following medications:

- Folic acid 1 mg once a day
- Hydroxychloroquine 300 mg daily
- Methotrexate 25 mg/1ml Subcutaneous, q week
- Neomycin/polymyxin B/dexamethasone ophthalmic 1 application, Affected Eye, QID
- Ocular lubricant 1 Drop Left Eye, QID, PRN Dry eyes
- Pantoprazole 40 mg once a day
- PredniSONE 40 mg once a day
- Bactrim DS 800 mg-160 mg 1 tab 3x/WK

- Feb 2024
  - cornea perforation
  - corneal patch graft #4 and temporary tarsorrhaphy

- She received her 2nd dose of RTX

- May 2024
  - permanent lateral tarsorrhaphy OD in setting of progressive thinning and bulge of PKP OD

- Current:
  - Prednisone 7.5 mg daily
  - Methotrexate 25 mg sq wkly
  - Folic acid 1mg daily
  - HCQ 300 mg daily
  - Rituximab 1000mg iv q 2 weeks every 6months

Discussion and Conclusion

- This case highlights a number of diagnostic and management challenges.
  - Corneal melting disease is, as illustrated, a severe problem for patients.
  - Accurate and timely diagnosis with aggressive management is critical.

- RA-associated Kertitis often has a poor visual outcome and its appearance may herald the transformation of a patient's RA into the systemic vasculitic phase

- RA-associated Keratitis should be managed with aggressive immunosuppression if the associated morbidity and mortality are to be avoided. Cell-mediated mechanisms appear to be important in the aetiopathogenesis of Keratitis

- The effective control of the underlying disease and early diagnosis of the dry eye syndrome in RA patients may prevent serious corneal complications such as corneal ulceration

- The initiation of treatment with steroids and immunosuppressants was found to halt the progression of keratolysis, and assisted re-epithelization

- Help from multidisciplinary physicians including rheumatologists & ophthalmologists as required is essential factors to maintain ocular integrity and avoid a poor outcome.

References:

Squirrell DM, Winfield J, Amos RS. Peripheral ulcerative keratitis 'corneal melt' and rheumatoid arthritis: a case series. Rheumatology (Oxford). 1999 Dec;38(12):1245-8. doi: 10.1093/rheumatology/38.12.1245. PMID: 10587553.

Karampatakis V, Konidaris V, Michailidou M, Gerofotis A, Daniilidis M. Peripheral corneal ulceration associated with rheumatoid arthritis. Am J Case Rep. 2013 Aug 12;14:318-21. doi: 10.12659/AJCR.883998. PMID: 23986797; PMCID: PMC3755700.

Trese M, Schimmel O, Gupta C. Extensive autoimmune keratolysis with subsequent corneal perforation managed with tectonic endothelial keratoplasty. Am J Ophthalmol Case Rep. 2021 Feb 5;21:101031. doi: 10.1016/j.ajoc.2021.101031. PMID: 33604490; PMCID: PMC7873382.

Wajnsztajn D, Nche E, Solomon A. Corneal complications of rheumatoid arthritis. Curr Opin Allergy Clin Immunol. 2022 Oct 1;22(5):304-313. doi: 10.1097/ACI.0000000000000844. Epub 2022 Aug 16. PMID: 35980013.

Thank you!