Voice Box Catastrophe

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IDAC 11/5/2022

Story

Chief Complaint

- Hoarse voice x3 months

History of Present Illness

- 47-year-old Latino man presented to ENT Clinic with hoarse voice x3 months
- Chronic non-productive cough for the last 3 years
- Remainder of ROS negative (No fevers, rigors, dysphagia, or dyspnea)

Medical History

- Diabetes mellitus II Dx 1991 on insulin
  - Nephropathy
  - Neuropathy with Charcot's arthropathy
  - Retinopathy
- ESRD previously on HD via LUE AVF
- s/p L nephrectomy 2016 due to renal cysts
- DDRT 6/14/2021 (CMV +/+, EBV +/+)
  - s/p induction with Basilixamab and Methylprednisolone
  - Maintained on Tacrolimus, Mycophenolate mofetil, Prednisone
  - s/p completion of CMV PPx with Valganciclovir
  - PPx: TMP/SMX DS twice weekly

Medical History

- Chronic active hepatitis C s/p Sofosbuvir/Velpatasvir in SVR
- Covid 9/2021, recovered
- HTN
- Multiple pulmonary nodules
    - Non-calcified RLL
    - Calcified granuloma RLL
    - Hilar and subcarinal adenopathy

Past History

Surgical History

L nephrectomy 2016

DDRT 6/14/2021

Family History

Mother: Unremarkable

Father: Unremarkable

Allergies

NKDA

Home Medications

Tacrolimus 1 mg 4 CAP BID

Mycophenolate mofetil 250 mg BID

Prednisone 10 mg daily

TMP/SMX DS twice weekly

Insulin lispro 6 units TIDAC

Pepcid 20 mg BID

Loratadine 10 mg daily

Social History

Substance Use

Alcohol: Denies

Tobacco: Denies

Drugs/IDU: Denies

Residence

Bakersfield, CA

Travel

No travel outside CA

Occupation

Unemployed

Incarceration

2017

Denies

Animal exposure

Unpasteurized dairy products

STIs

Known sick contacts

Physical Examination

T: 36.8C, BP: 91/49, HR 92, RR: 18, Sp02: 100% on room air

NOSE: The turbinates are moderately hypertrophied. No mucous stranding.

ORAL: All mucosal surfaces are pink and moist without lesions. The tongue is freely mobile and symmetric.

NECK: No adenopathy.

THYROID: The thyroid gland is small and symmetric without masses.

RESPIRATORY: Nonlabored.

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CT

ENT

Flexible Laryngoscopy

- Diffuse edema
- Erythema of lateral margin of left true vocal cord
- Marked posterior commissure edema

Plan

- Omeprazole 40 mg daily
- Amoxicillin/Clavulanate 875 mg BID x21 days

ENT Follow Up

- No change in hoarseness

Flexible laryngoscopy

Vocal cord lesion DDx: Polyp

Plan

Direct laryngoscopy:

Findings

Anterior commissure vocal cord polyps

Left true vocal cord lesion s/p biopsy

Pathology

Benign squamous epithelium

Underlying fibrous stroma

Negative for dysplasia or malignancy

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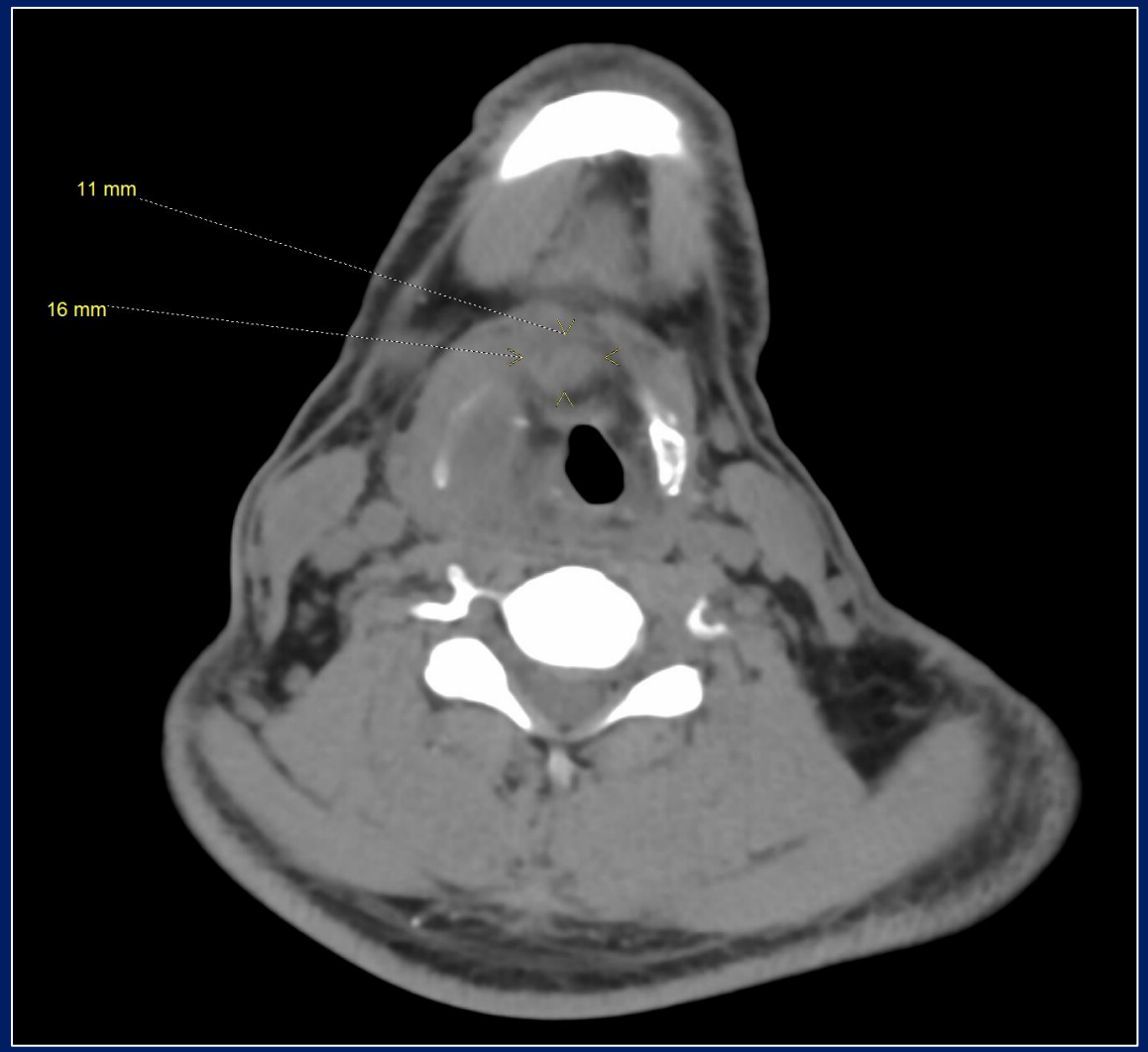
CT Neck w/o Contrast



Heterogenous soft tissue mass 11 x 16 mm with surrounding edema centered about the R limb of thyroid cartilage extending into R vocal cord

+2 Weeks

- Presented to an OSH with dyspnea x4 days

Physical Examination
- Stridor
- Respiratory distress

CT Neck
- 2.8 x 1.6 cm hypodense collection suggestive of cricoarytenoid vs laryngeal abscess + airway stenosis

Management
- Intubated and transferred to Kern Medical for ENT

Hospital Course

- Admitted to MICU service
- CT Neck w/o contrast: 4.4 x 3.0 cm diffuse soft tissue swelling suspicious for mass or pseudo-mass
- I&D B/L thyroid cartilage abscess
- Vancomycin + PIP/TAZ pending cultures

Labs

WBC	11.0
Hgb	10.9
HCT	32.9
PLT	264
MCV	88.4
ANC	1040
ALC	300
Bands	0%
PT	14.3
INR	1.11
PTT	34
Glucose	182

Na	141
K	4.3
Cl	111
CO2	24
BUN	34
Creatinine	0.74
eGFR	113
Ca	9.3
AST	15
ALT	12
ALP	74
T. Bili	0.2
T. Protein	6.8
Albumin	2.6

TSH	1.111
A1c	7.1
Urine ACR	39.5
HIV Ag/Ab	Negative
HBsAg	Negative
HCV Ab IgG	+
HCV RNA PCR	Not detected

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Differentials?

Differentials

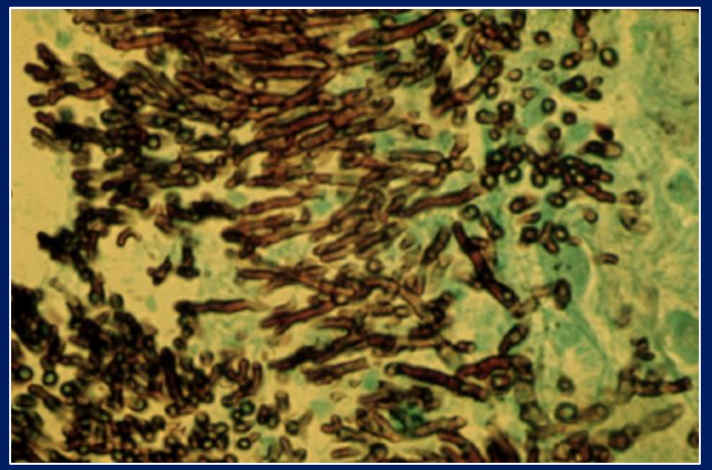
- MTB
- NTM (MAC)
- Actinomycosis
- Coccidioidomycosis
- Histoplasmosis
- Blastomycosis
- Aspergillosis
- Mucormycosis
- Cryptococcus
- Candida
- CMV
- EBV
- HSV

Additional Results

CMV DNA PCR	Negative
EBV VCA IgM	<36
EBV VCA IgG	272
EBV EBNA IgG	99.90
Sputum AFB smears & cultures x3	Negative x3

AFB Smear Laryngeal Drainage	Negative
Cocci ID IgM	Negative
Cocci ID IgG	Negative
Cocci CF Titer	<1:2
Sputum MTB PCR	Negative

Microbiology



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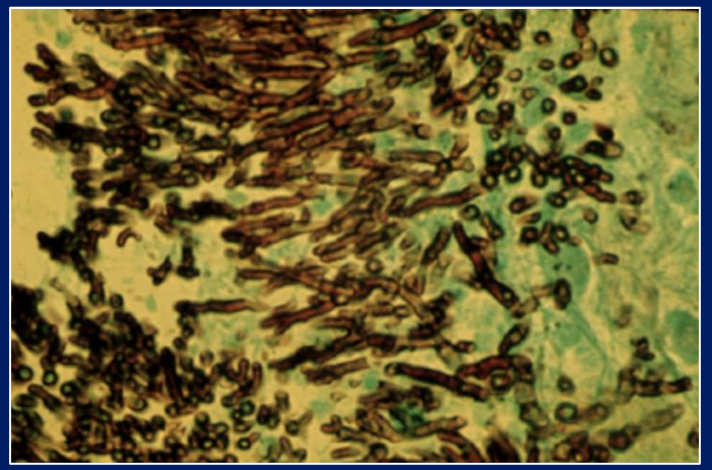
Microbiology



Aspergillus fumigatus

Hospital Course

- Started Isavuconazonium for laryngeal aspergillosis (Including thyroid cartilage and true vocal cord)
- Aspergillus isolates sent to reference lab for susceptibility testing
- s/p tracheostomy and gastrostomy placement
- Respiratory failure improved → T-tubing
- Discharged to an acute rehab facility

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Laryngeal Aspergillosis

Case Reports > Med Mycol. 2008 Aug;46(5):475-9. doi: 10.1080/13693780701851703.

Primary vocal cord aspergillosis caused by Aspergillus fumigatus and molecular identification of the isolate

Yuping Ran [1], Baiyan Yang, Suling Liu, Yaling Dai, Zongguo Pang, Jiayu Fan, Haoru Bai, Shixi Liu

> Indian J Otolaryngol Head Neck Surg. 2019 Oct;71(Suppl 1):868-871. doi: 10.1007/s12070-019-01626-w. Epub 2019 Feb 28.

A Rare Case of Vocal Cord Aspergillosis

Sanchay Chouksey [1], P Thulasidas [1]

Case Reports > Biomed J. 2015 Dec;38(6):550-3. doi: 10.1016/j.bj.2015.09.001. Epub 2016 Mar 15.

Primary aspergillosis of vocal cord: Long-term inhalational steroid use can be the miscreant

Arpita Saha [1], Kaushik Saha [2], Uttara Chatterjee [3]

Case Reports > BMJ Case Rep. 2021 Apr 9;14(4):e240434. doi: 10.1136/bcr-2020-240434.

Primary aspergillosis of the larynx causing acute airway distress

David Ranford [1], Chong Kang [2], Mairead Kelly [2], Luigi Volpini [2]

Case Reports > J Laryngol Otol. 1994 Oct;108(10):883-5. doi: 10.1017/s0022215100128403.

Aspergillosis of the larynx

R Benson-Mitchell [1], N Tolley, C B Croft, A Gallimore

> Respirol Case Rep. 2014 Dec;2(4):123-5. doi: 10.1002/rcr2.70. Epub 2014 Sep 10.

Laryngeal aspergilloma: a complication of inhaled fluticasone therapy for asthma

David Darley [1], David Lowinger [1], Marshall Plit [1]

Case Reports > BMJ Case Rep. 2021 Apr 9;14(4):e240434. doi: 10.1136/bcr-2020-240434.

Primary aspergillosis of the larynx causing acute airway distress

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Laryngeal Aspergillosis

Case Reports > Ann Otol Rhinol Laryngol. 2005 Mar;114(3):219-22.
doi: 10.1177/000348940511400309.

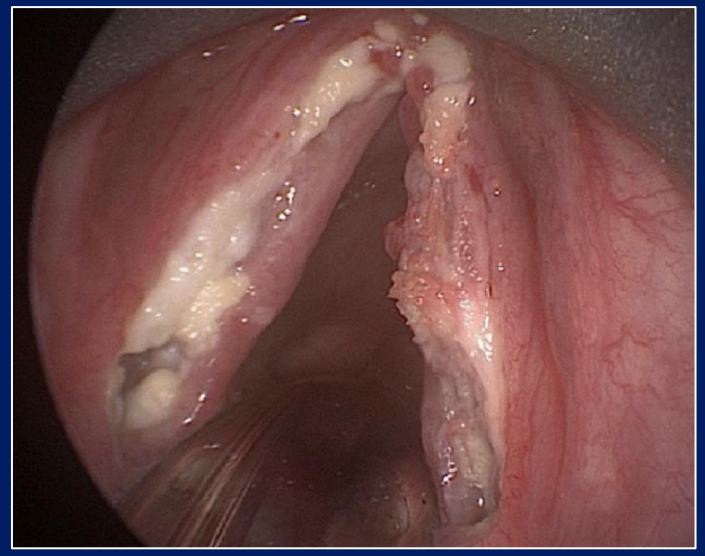
Purulent chondritis of the laryngeal framework cartilages

Ron Eliashar [1], Menachem Gross, Abraham Goldfarb, Jean-Yves Sichel

- 3-patient case series
- All with purulent chondritis of the laryngeal cartilages
- CTs revealed abscess formation between inner and outer perichondria of thyroid cartilage
- *Aspergillus fumigatus* identified as the causative pathogen in 1 of the patients
- Treated with I&D + prolonged medical therapy

Laryngeal Aspergillosis

- Isolated laryngeal aspergillosis is rare (<50 cases documented in English literature)
- Most commonly secondary infection from lungs or tracheobronchial tree
- Most commonly involved true vocal cords
- *Aspergillus fumigatus*
- Risk factors:
    - Immunosuppression
    - Smoking
    - Radiation therapy
    - Prolonged inhaled corticosteroid use



Laryngeal Aspergillosis

- Main presenting symptom: Dysphonia
- Pathogenesis: Inhalation of conidia → Invasion of respiratory mucosa
- Complications: Respiratory distress with airway compromise
- Diagnosis: Often by biopsy for suspected malignancy
- Treatment:
    - Medical management preferred
    - Caution with surgical resection to preserve voice

Left to right: Improvement after 1 and 2 months of Itraconazole

Treatment

- Voriconazole, Itraconazole, Isavuconazonium, Amphotericin B liposomal
- Combination therapy not currently recommended
- Duration may be prolonged (6-12 months)
- TXA (Mild-moderate hemoptysis)
- Bronchial artery embolization (Severe hemoptysis)
- Surgical resection for single aspergillomas

- Voriconazole + Tacrolimus = Significant DDI
  - May increase tacrolimus levels
  - QT prolongation
  - Nephrotoxicity

Clinical Update

PCP Telehealth Visit 1 Month post Hospital Discharge

- Discharged from ARF
- Doing well at home
- No acute complaints
- MMF held per transplant team
- Isolate speciated to *Aspergillus fumigatus*
- Complaint with Isavuconazonium (Susceptibility testing still pending)

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Proto-aspergillum as described in Leviticus

Ladle (simpulum), sprinkler (aspergillum), axe (securis), and pontiff's cap (apex), 49 BC

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