

# Grand Rounds



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# History

- CC: Blurry vision and large pupil for 1 week
- HPI: 67 y/o WF c/o slightly blurry vision for 1 week. Her granddaughter noted she had a large left pupil. She denied pain.
- POHx: Refractive Error
- PMH: HTN, atrial flutter, breast cancer
- FHx: No significant eye disease
- SocHx: No tobacco, EtOH, or other substances

# History

- Medications: Verapamil
- Allergies: Penicillin
- ROS: Positive for drooping right eyelid for 3-4 weeks. No headache, eye pain, nausea, numbness, tingling, or weakness.

# Exam

VA(cc): 20/25 OU

Pupils: OD 3.5 → 2.5 mm  
OS 5.5 → 4 mm

EOM: Full OU

SLE: Ptosis of the right upper lid and inverse ptosis of the right lower lid

# History



- Clinical photograph showing anisocoria and ptosis of the right eyelid

# History



- Clinical photograph showing anisocoria and ptosis of the right eyelid. The patient is attempting to open her eyes.

# Assessment

- Assessment: Anisocoria and right sided ptosis
- DDx:
  - Horner Syndrome
  - Physiologic anisocoria
- Plan:
  - Apraclonidine testing
  - MRI/MRA

# Course

- MRI/MRA was unremarkable
- Apraclonidine testing showed...

# History



- After apraclonidine instillation, the anisocoria reverses.

# History



- After apraclonidine instillation, the ptosis improves.

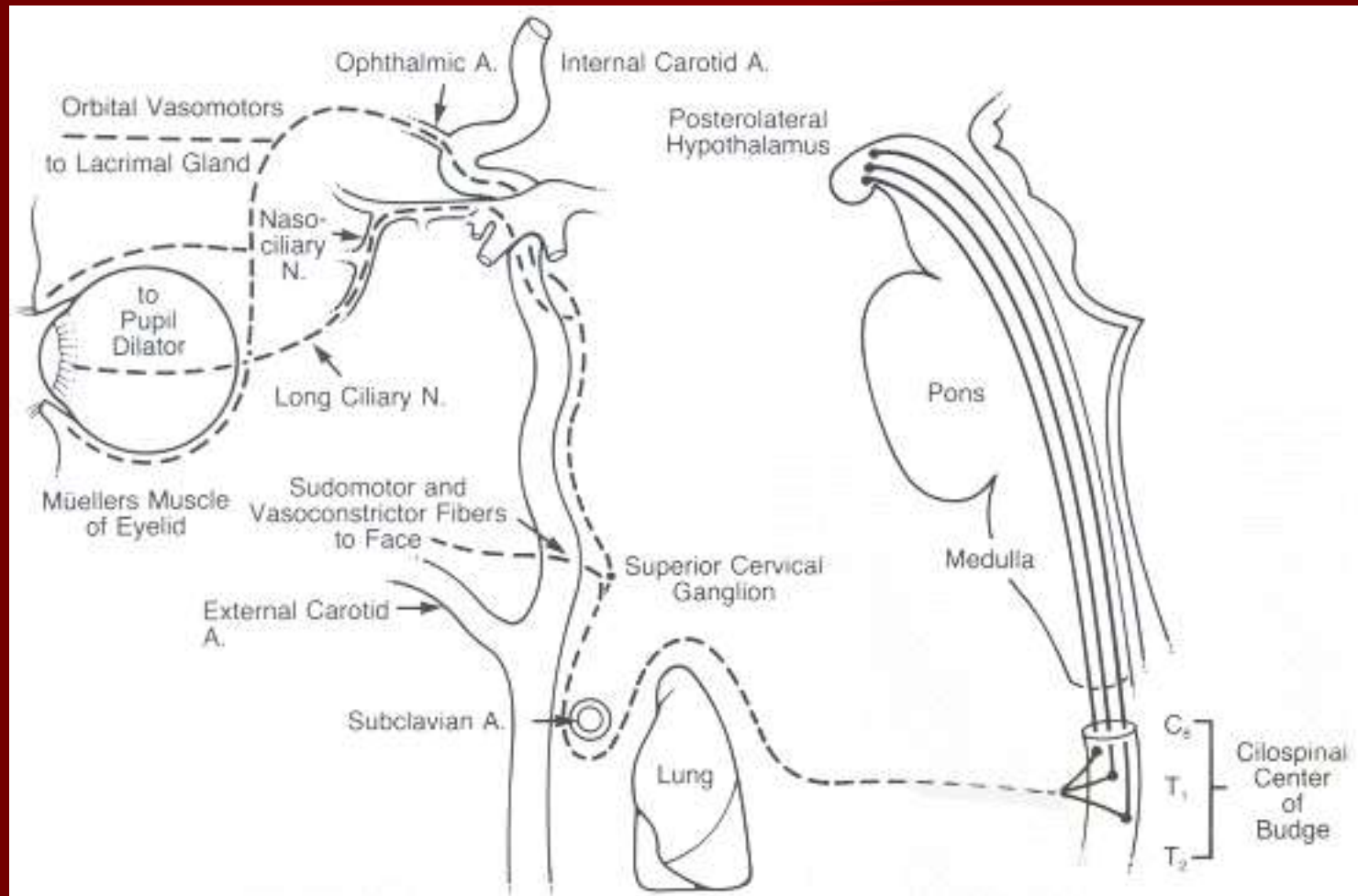
# Course

- Hydroxyamphetamine to localize the lesion cannot be given for 24-48 hours after apraclonidine testing
- CT-Chest → Negative
- Dx: CVA of small penetrating artery

# Horner Syndrome

- Syndrome of ptosis, miosis, and anhidrosis secondary to disruption of the oculosympathetic pathway
- Classically 2 mm of upper lid ptosis (Mueller's muscle) and there may also be lower lid “ptosis”
- May have accompanying symptoms of numbness, weakness, ataxia, cough, pain etc.

# Sympathetic Pathway



# Causes

- 1<sup>st</sup> order – CVA (usually medullary), CNS tumors, spinal cord disease
- 2<sup>nd</sup> order – lung disease, metastatic disease, surgery, trauma, aortic aneurysm
- 3<sup>rd</sup> order – degenerative changes within the carotid artery wall, internal carotid dissection, head/neck cancer, trauma

# Congenital Horner Syndrome

- Iris heterochromia
- Can be secondary to neuroblastoma

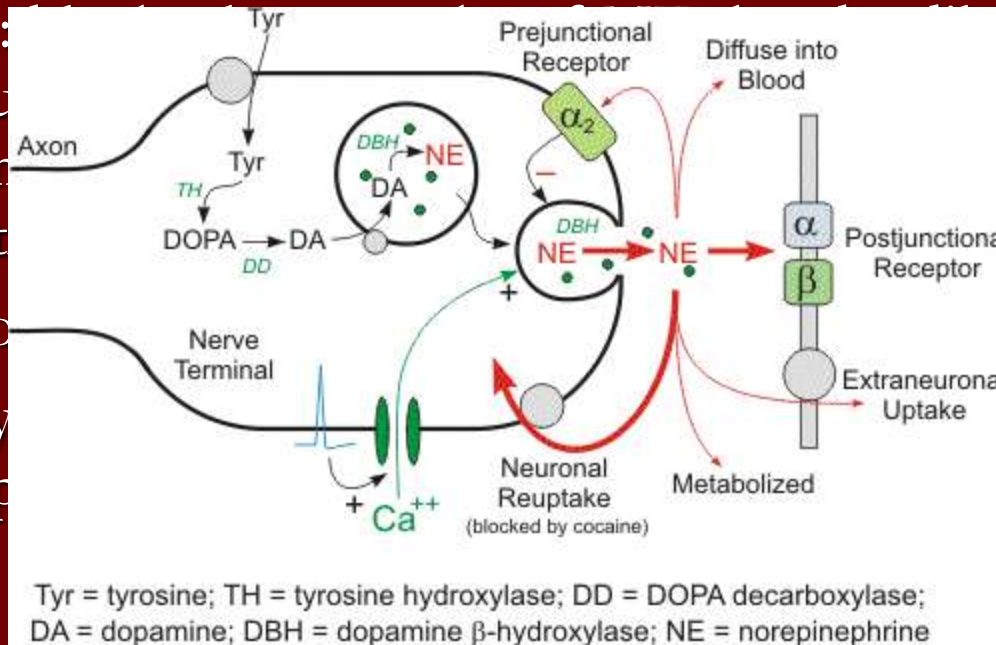


# Diagnosis

## ■ Stage I – confirming the diagnosis

- Apraclonidine: weak  $\alpha_1$ -agonist with no appreciable effect on a normal eye, but dilating the Horner pupil

- Cocaine: dilating a normal pupil, but less than 1 mm in a Horner diagnosis



## ■ Stage II – localizing the lesion

- Hydroxyamphetamine: dilating a normal pupil, but less than 1 mm in a Horner diagnosis

dilating a normal pupil. Greater dilation is

NE at the

# Diagnosis



- Perspiration detection with starch and iodine

Heiner. *Blurry Vision and Abnormal Sweating*. *Annals of Emergency Medicine* 53:6, June 2009, Pages 713-726

# Treatment

- Müller muscle-conjunctival resection
  - Predict outcome with phenylephrine
  - May damage accessory lacrimal glands
    - [http://www.youtube.com/watch?v=D748H2\\_5j38&feature=related](http://www.youtube.com/watch?v=D748H2_5j38&feature=related)
- Fasanella-Servat procedure
  - <http://www.youtube.com/watch?v=eWBId9e0eUk>

Thank You

# References

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