Relevant Anatomy in Treating Blepharospasm

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Goals for Today

- Review the muscles responsible for facial expression
- Understand the role of these muscles in blepharospasm and targets for treatment
- Questions: BKORN@UCSD.EDU
Case Presentation

- 44 year old female
  - Referred from her primary care physician for a “droopy eyelid” consultation
  - Pt has reportedly been unable to work for over 2 years
  - Complains of difficulty with driving and focusing
  - Referred to psychologist --> psychiatrist
  - Prescribed antidepressants
  - Seen my ophthalmologist and treated for dry eye
  - Seen multiple physicians and told her “nothing was wrong with her and just go back to work.”
Case Presentation

![Image](image.jpg)
Muscles of Facial Expression:

- Procerus
- Occipitofrontalis (frontal portion)
- Orbicularis oculi (palpebral portion)
- Orbicularis oculi
- Levator labii superioris
- Zygomaticus minor
- Zygomaticus major
- Risorius
- Levator labii superioris
- Levator anguli oris (cut)
- Masseter
- Levator anguli oris
- Buccinator
- Depressor anguli oris
- Depressor labii inferioris
- Mentalis
- Platysma
- Corrugator supercilii
- Nasalis
- Temporalis
- Zygomaticus minor and major (cut)
Facial Nerve

- Seventh cranial nerve
- Controls muscles of facial expression
- Activation of this nerve mediates effects of blepharospasm
Why not eliminate facial nerve?

- Facial nerve palsy from parotid tumor removal
  - Lower lid ectropion
  - Eyelid retraction
  - Lagophthalmos
  - Tearing
  - Blurred vision
Orbicularis Oculi

- Most relevant to blepharospasm
- Circular muscle that surrounds eye
- Major muscle that closes eyelid
- Responsible for blink
- Protects eye against trauma
- Helps to pump tears through lacrimal passages into nose
- Located directed below our eyelid skin
Orbicularis Oculi
Corrugator Supercilii Muscle

- Pulls the eyebrow down and medial, inwards
- Contributes to vertical glabellar wrinkles (frown lines)
- Covered by thicker skin and subcutaneous tissue
Procerus Muscle

- Pulls down the skin between eyebrows
- Produces horizontal wrinkles on bridge of nose (bunny lines)
- Covered by thicker skin and subcutaneous tissue
Procerus Muscle

- Pulls down the skin between eyebrows
- Produces horizontal wrinkles on bridge of nose (bunny lines)
- Covered by thicker skin and subcutaneous tissue
Corrugator and Procerus
Zygomaticus Major and Minor Muscles

- Raises the angle of the mouth/cheek when smiling
- Creates dimples
- Covered by skin and cheek fat
Zygomaticus Major and Minor Muscles
Levator Labii Superioris Muscle

- Lifts the upper lip
- Dilates the nostril
- Under the skin transitioning between the nose and cheek
Orbicularis Oris Muscle

- Closes the mouth
- Puckers the lips
- Needed for sucking on a straw or whistling
Orbicularis Oris Muscle

- Closes the mouth
- Puckers the lips
- Needed for sucking on a straw or whistling
Orbicularis Oris Muscle
Depressor Anguli Oris Muscle

- Draws the corner of the mouth downward
- Deep to skin and subcutaneous fat
Depressor Anguli Oris Muscle
Plastysma Muscle

- Aids to depress lower jaw
- Draws down the lower lip and angle of the mouth
- Responsible for “grimacing”
Plastysma Muscle
Meige’s Syndrome

- **Blepharospasm**
  - Abnormal twitching of the muscles of facial expression, predominantly the orbicularis oculi, corrugator and procerus

- **Oromandibular dystonia**
  - Focal dystonia affecting head and neck, including lower face, jaw, tongue and larynx
  - Involuntary contractions involving the muscles of mastication
Muscles of Mastication
Apraxia of Eyelid Opening

- Most often seen in conjunction with blepharospasm
- Inability to initiate eyelid lifting (levator muscle)
- See prominent brow elevation (frontalis muscle) without effective eyelid opening
Unable to open eyes >10 years
Unable to open eyes >10 years
Unable to open eyes >10 years
Unable to open eyes >10 years
3 months after myectomy
Thank you!

“Our patients are our teachers.”