Role of the cranial nerves in the autonomic distribution in the head
PARASYMPATHETIC PATHWAY FOR PUPILLARY CONSTRICITION AND ACCOMMODATION

- EWN (Eve's Nucleus of the Nervus Opticus)
  - Brainstem

- Cavernous sinus
  - Sup div of III
  - Inf div of III

- Ciliary ganglion
  - Synapse of parasympathetic
  - 10-12 short ciliary nerves
    - Postganglionic parasympathetic
    - Branch of nasociliary (sensory)
    - Sympathetic off artery (V/C)

PARASYMPATHETICS TO EYE

- Superior orbital fissure
- Edinger Westphal nucleus
- Cavernous sinus
- Internal carotid artery
- Trigeminal ganglion
- Sympathetic cervical ganglion

- Parasympathetic
- Cranial nerves
- Sympathetic

2 SPECIAL PARASYMPATHETICS
* Short ciliary ns for pupil constriction via inferior div of III
* Short ciliary ns for accommodation via inferior div of III
PARASYMPATHETIC PATHWAY FOR PAROTIDSECRETION

Brain stem

IX

Inferior salivary nucleus

Lesser petrosal

Vc

Auriculo-temporal

Parotid gland

Jugular foramen

Tympanic branch of IX entering the middle ear

Otic ganglion

Synapse of parasympathetic

• Postganglionic parasympathetic
• Branch of auriculotemporal (sensory)
• Sympathetic (vasoconstriction)

Cervical sympathetic ganglia
(All branches are postganglionic)

Somatic branches
(Vasomotor
Sudomotor
Pilomotor)

Visceral branches

Vascular branches

Into skull via internal carotid artery

Superior

C1

C2

C3

C4

On external carotid artery

Middle

C5

C6

Superior cardiac branch

On inf. thyroid artery

Middle cardiac branch

Inferior

C7

C8

On vertebral artery

Inferior cardiac branch
2 SPECIAL SYMPATHETICS
1. Long ciliary ns for pupil dilatation via nasociliary (Va)
2. Levator palpebrae superioris via superior div of III

INVolvEMENT OF CRANIAL NERVES IN AUTONOMIC DISTRIBUTION
IN Involve ment of Cranial Nerves in Autonomic Distribution

3

Hitchhikes sympathetic to levator palpebrae superioris

5

V a hitchhikes sympathetic to dilate pupil

7

9
IN Volvement of Cranial Nerves in Autonomic Distribution

3
- Hitchhikes sympathetic to levator palpebrae superioris
- Supplies parasympathetic to ciliary ganglion

5
- Supplies parasympathetic to Va hitchhikes sympathetic to dilate pupil

7
- Supplies parasympathetic to PPG

9
- Supplies parasympathetic to otic ganglion
