MUSCLES OF MASTICATION

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PRINCIPAL MUSCLES OF MASTICATION-
- Four paired muscles:
  - Masseter
  - Temporals
  - Medial Pterygoid (internal pterygoid)
  - Lateral Pterygoid (external pterygoid)

ACCESSORY MUSCLES OF MASTICATION-
1) Buccinator
2) Digastric
3) Mylohyoid.
4) Geniohyoid.
MASSETER

- Quadrilateral muscle.
- Consists of 3 layers of fibers.

**ORIGIN:**

**Superficial layer (largest):**
- Lower border of anterior 2/3rd of zygomatic arch.
- Adjoining maxillary process of zygomatic bone.

**Middle layer:**
- Lower border of posterior 1/3rd of zygomatic arch.

**Deep layer:**
- Deep surface of zygomatic arch.
MASSETER contd...

**INSERTION:** Lateral surface of the ramus of the mandible.

**NERVE SUPPLY:** Masseteric branch of anterior division of mandibular nerve.
MASSETER contd...

**ACTIONS:**

- **Elevation** of the mandible.
- **Protraction** of mandible (by superficial fibers).
- **Retraction** of mandible (by deep fibers).
APPLIED ASPECTS OF MASSETERS

TRISMUS

- Tonic spasm of both masseters in tetanus.
TEMPORALIS

- A **fan-shaped** muscle.
- **Bipennate** muscle.

**ORIGIN:**

- **Floor of temporal fossa** below the inferior temporal line.
- From overlying **temporal fascia**.
- It covers the majority of the **temporal** bone and lesser portions of the **frontal** and **parietal** bones.

**INSERTION:**

- On the coronoid process of the mandible.
- Anterior border of ramus of mandible.
TEMPORALIS contd...

NERVE SUPPLY:
- Deep temporal branches of mandibular nerve.

ACTIONS:
- Elevation of mandible.
- Retraction (Retrusion (pull back)) of the mandible (by posterior fibers).
MEDIAL PTERYGOID (INTERNAL PTERYGOID)

ORIGIN:

- Arises by 2 heads - Superficial head.
  - Deep head.

SUPERFICIAL HEAD (small):

- From tuberosity of maxilla.
- Lateral surface of pyramidal process of palatine bone.

DEEP HEAD (large):

- Medial surface of lateral pterygoid plate.

INSERTION: Medial surface of the ramus of the mandible below and behind the mandibular foramen and mylohyoid groove.
NERVE SUPPLY:

- Branch from trunk of mandibular nerve.

ACTION:

- Elevation of mandible (closing of mouth).

- Protrusion of mandible (along with lateral pterygoid).

- Side to side movements of mandible (chewing) (lateral and medial pterygoid muscles of two sides contract alternately).
LATERAL PTERYGOID (EXTERNAL PTERYGOID)

○ Key muscle of infratemporal region.

ORIGIN:

○ Arises by 2 heads - Upper head.
  - Lower head.

UPPER HEAD:-

• Infratemporal surface and infratemporal crest of greater wing of the sphenoid.

LOWER HEAD:-

• Lateral surface of lateral pterygoid plate.
Lateral pterygoid muscle
LATERAL PTERYGOID contd...

**INSERTION:**
- Pterygoid fovea at anterior surface of Neck of mandible.
- Capsule and articular disc of temporo-mandibular joint.

**NERVE SUPPLY:**
- Branch from anterior division of mandibular nerve.
LATERAL PTERYGOID contd...

**ACTIONS:**

- Depression of mandible (opening of mouth).
- Protrusion of mandible (along with medial pterygoid)
- Side to side movements of mandible (chewing) (lateral and medial pterygoid muscles of two sides contract alternately).
Superior orbital fissure
Ophthalmic division (V₁)
Trigeminal (semilunar or gasserian) ganglion
**Trigeminal nerve (V)**
Pons
Maxillary division (V₂)
Mandibular division (V₃)
Foramen ovale
Foramen rotundum
Anterior trunk to chewing muscles

**Distribution of sensory fibers of each division**

- Mandibular division (V₃)
- Lateral pterygoid muscle
- Medial pterygoid muscle
- Masseter muscle
- Anterior belly of digastric muscle

Inset shows motor branches of the mandibular division (V₃)

- Temporalsis muscle

Infraorbital nerve
Superior alveolar nerves
Lingual nerve
Inferior alveolar nerve
Fig. 117. — Muscle pterygoïden interne.
Thank You