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13.1 Introduction

Bony landmarks permit identification of overlying superficial structures. For example, the zygomatic arch is the upper limit of the parotid gland, the orbital rims mark the path of the infra- and supraorbital nerves, and the mastoid process reveals the emergence of the facial nerve. Similarly, the foramen imaged as bony notches affords a window to the orbital and mental nerves and arteries that run in the subcutaneous tissues.

The superficial musculoaponeurotic system (SMAS) interconnects the facial and neck musculature and is divided into two parts: the superficial SMAS, with the arterial supply and the deep SMAS, wherein lie most of the nerves. While the veins generally parallel the arteries, great variation occurs.

3D imaging is optimal to focus on the facial danger zones to avoid nerve damage. 2D cross-sectional imaging of the small facial nerves is difficult and C-plane reconstruction will confirm the linear and uninterrupted nature of the original picture.

13.2 Relevant Anatomic Structures and Regions

The following are important anatomical structures and regions for performing cosmetic procedures:

1. *Temporal branch of the facial nerve* located below a line drawn from approximately 0.5 cm below the tragus to 2 cm above the lateral eyebrow and above the zygoma (Fig. 13.1)
2. *Greater auricular nerve* located approximately 6.5 cm below the external auditory canal (Fig. 13.2)
3. *Marginal mandibular branch of the facial nerve* located mid mandible approximately 2 cm posterior to the oral commissure (Fig. 13.3)
4. *Zygomatic and buccal branches of the facial nerve* located in the triangle formed by connecting the dots of the malar

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Fig. 13.1 Drawing (sagittal axis of the temple and lateral cheek region) shows the location of the temporal branch of the facial nerve, besides other relevant structures

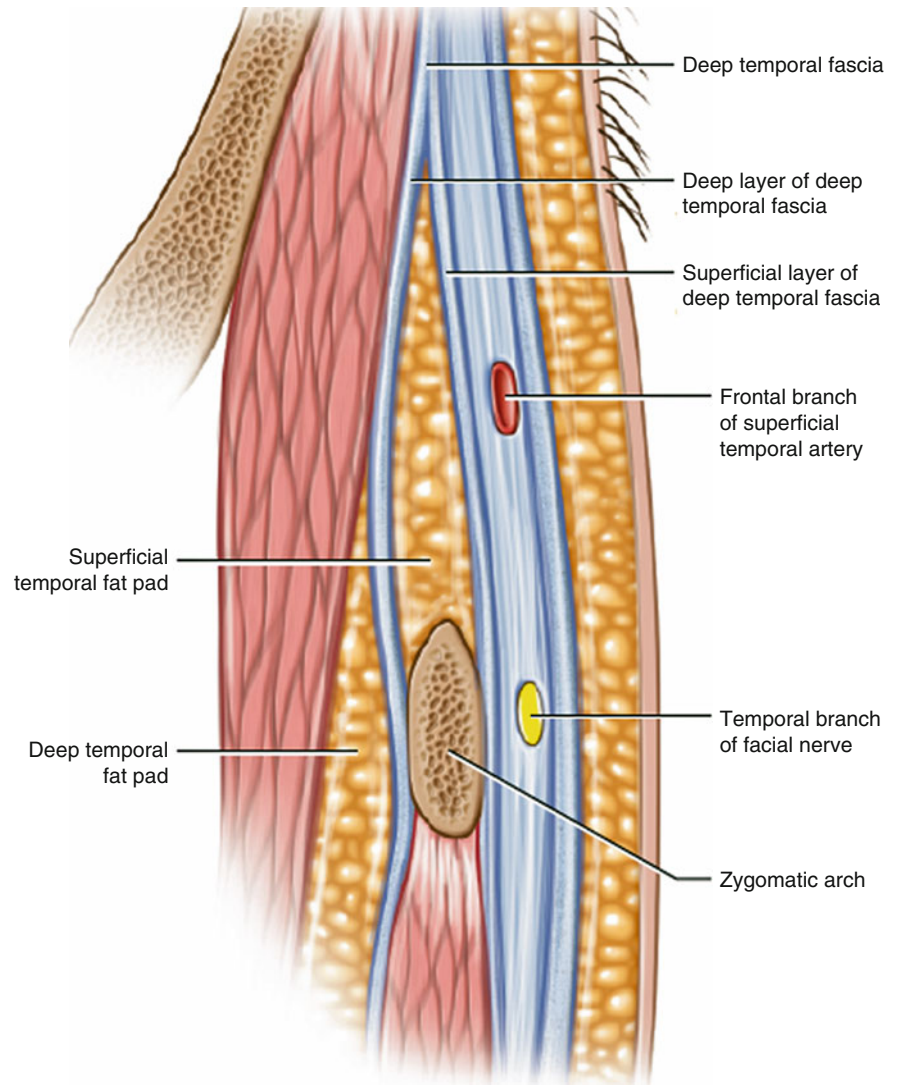
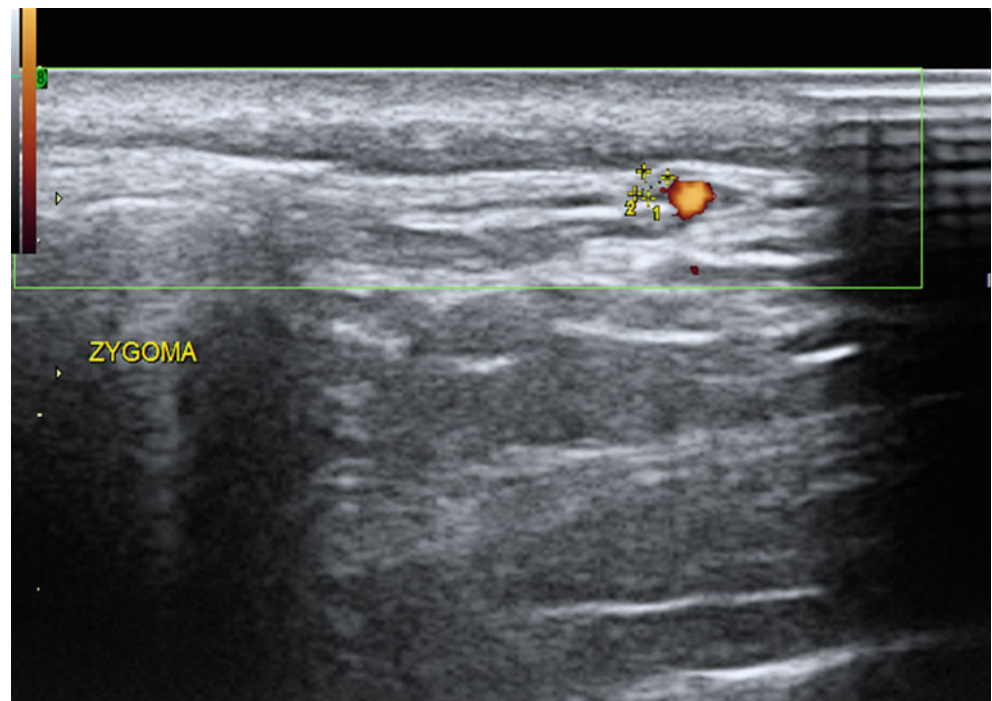
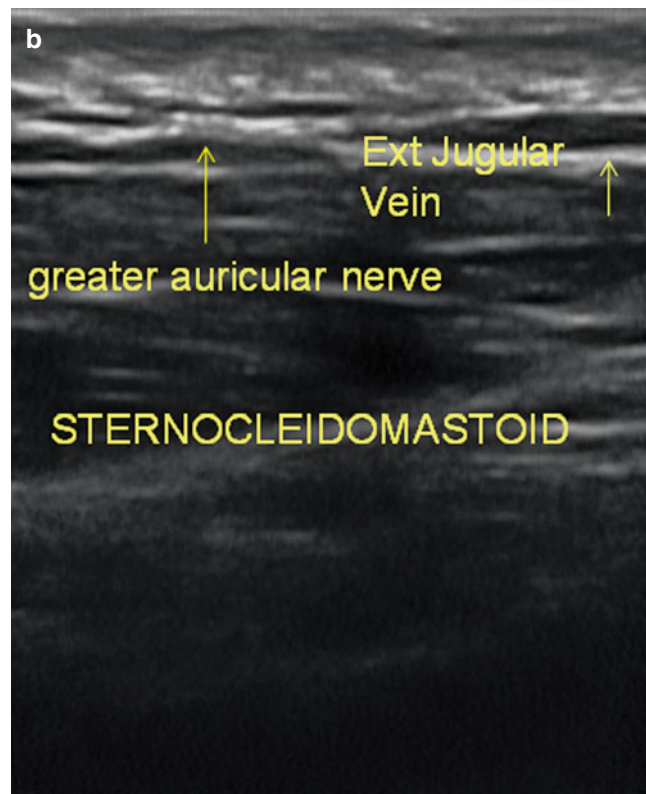
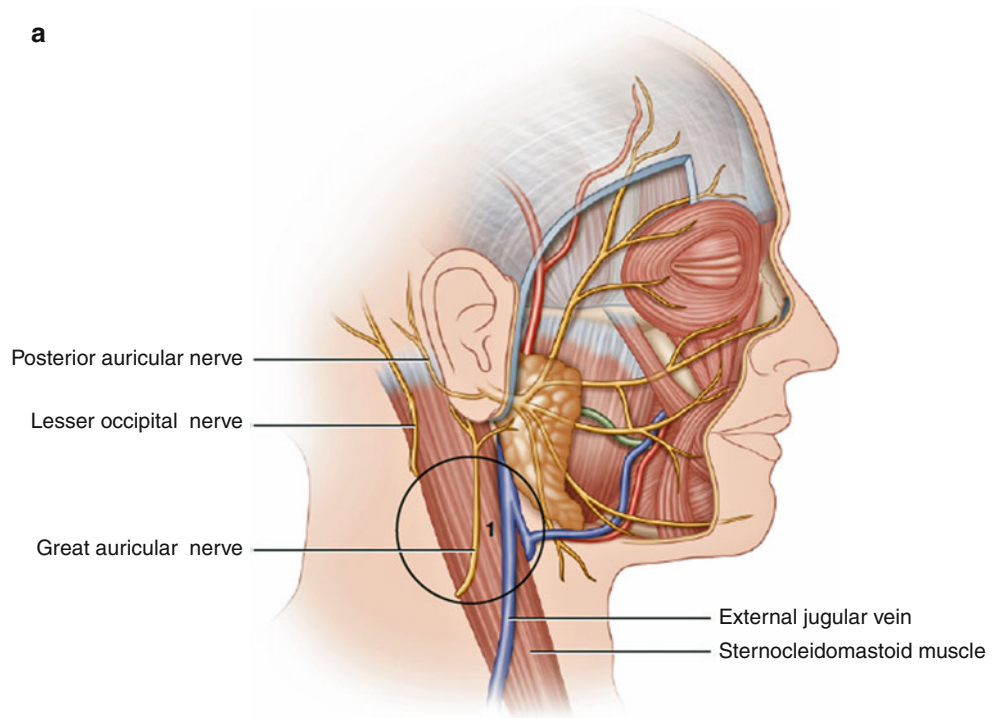


Fig. 13.1 (continued)

- eminence, posterior border of the mandibular angle, and oral commissure (Fig. 13.4)
5. *Supraorbital and supratrochlear nerves* located at the superior orbital rim above the mid pupil (Fig. 13.5)
 6. *Infraorbital nerve* located at the inferior orbital rim below the mid pupil (Fig. 13.6)
 7. *Mental nerve* located midmandible below the second pre-molar (Fig. 13.7) [1–3]

Fig. 13.2 (a) drawing, (b) ultrasound (longitudinal view) of the greater auricular nerve, located approximately 6.5 cm below the external auditory canal



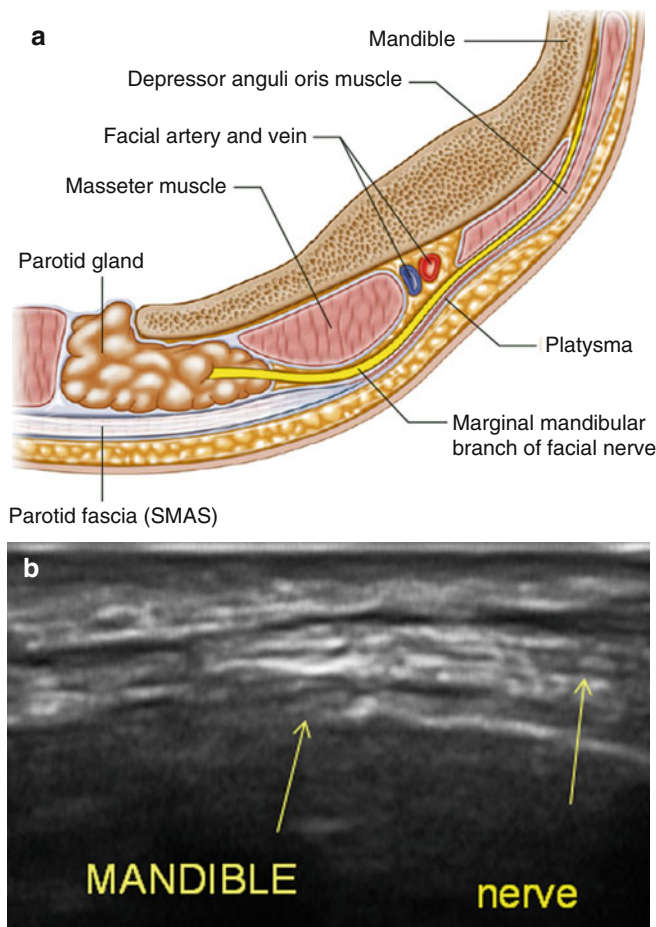


Fig. 13.3 (a) Drawing, (b) Ultrasound (longitudinal view) of the marginal mandibular branch of the facial nerve located in the mid mandible approximately 2 cm posterior to oral commissure

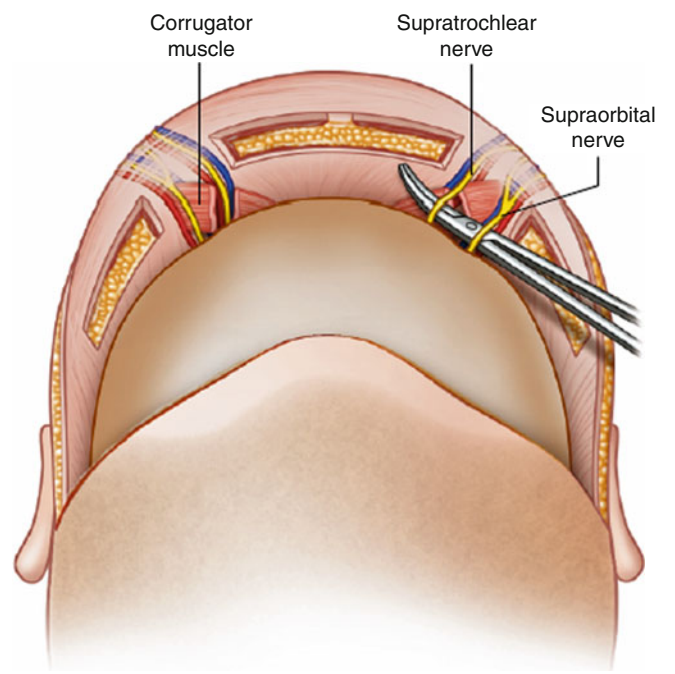


Fig. 13.4 Drawing of the supraorbital and supratrochlear nerves located at the superior orbital rim above mid pupil

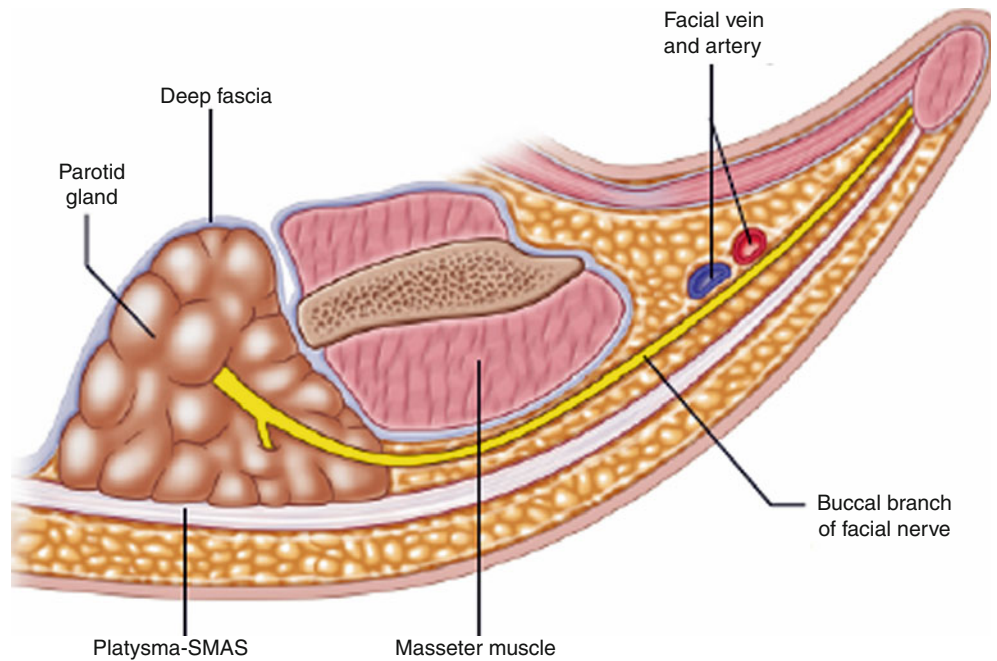


Fig. 13.5 Drawing of the zygomatic and buccal branches of facial nerve located in the triangle formed by connecting the dots of the malar eminence, posterior border of mandibular angle and oral commissure

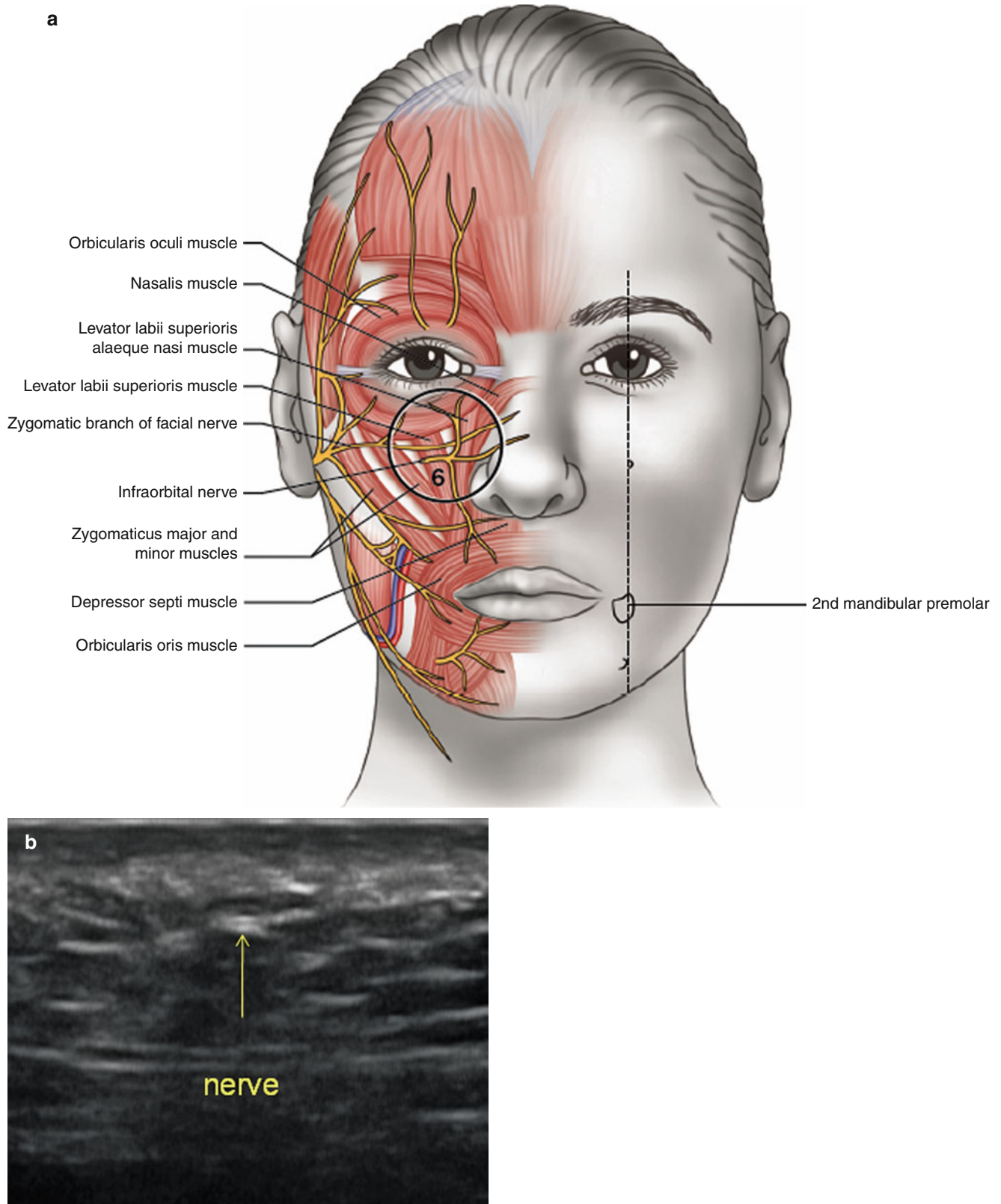


Fig. 13.6 (a) drawing (b) ultrasound (transverse view) of the infraorbital nerve (*arrow*) located at the inferior orbital rim below the mid pupil

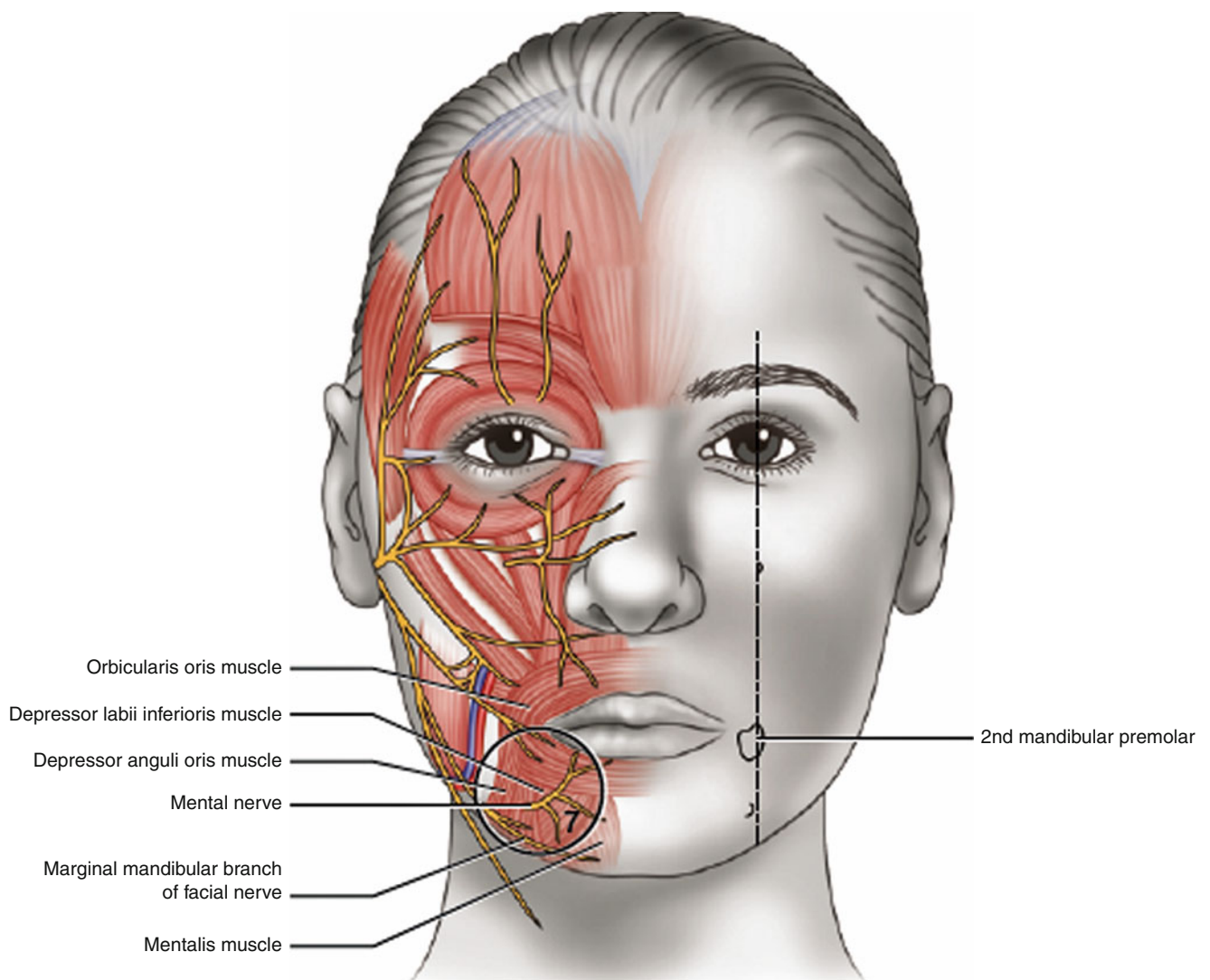


Fig. 13.7 Drawing of the mental nerve located midmandible below the second premolar

References

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