



Review of Head & Neck Oncosurgery

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Highlights

- FNB, FHNO and AOMSI Exams
- MS ENT, FRCS ENT & Other International Exams
- European Board (FEB) & American Board Exams (AHNS)
- Thoroughly updated with Head and Neck Oncosurgery Therapeutic Modalities

Forewords

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TRUE/FALSE STATEMENTS

1. The temporal branch of the facial nerve crosses deep to the superficial temporal artery and vein in its course toward the lateral forehead.
2. Facial nerve schwannomas most commonly affect the geniculate ganglion and typically present with gradual facial palsy rather than acute onset.
3. Cross-facial nerve grafting is the first-line surgical intervention for chronic facial nerve paralysis lasting more than 12 months.
4. In facial reanimation surgery, the use of the masseter nerve for nerve transfer provides faster results than hypoglossal nerve transfer.
5. Facial nerve decompression surgery is most effective when performed within the first two weeks of complete facial nerve paralysis caused by temporal bone fractures.
6. In patients with facial nerve schwannomas, stereotactic radiosurgery is a definitive treatment to restore facial nerve function.
7. MRI with gadolinium is the imaging modality of choice for diagnosing facial nerve inflammation in Bell's palsy and schwannomas.
8. In patients with parotid malignancies, the facial nerve is routinely sacrificed to achieve oncologic clearance.
9. Synkinesis is a common complication of facial nerve regeneration, caused by aberrant reinnervation of unrelated muscle groups.
10. Facial nerve reanimation surgery using the hypoglossal nerve often leads to complete restoration of voluntary facial movement.

EXPLANATIONS

1. **False**
The temporal branch of the facial nerve crosses superficial to the superficial temporal artery and vein as it travels toward the lateral forehead.
2. **True**
Facial nerve schwannomas often involve the geniculate ganglion and cause progressive facial weakness due to slow-growing nerve compression, unlike the sudden onset seen in conditions like Bell's palsy.
3. **False**
Cross-facial nerve grafting is typically indicated in chronic paralysis of less than 12 months. Beyond this period, muscle atrophy limits its effectiveness, and static procedures or muscle transfers may be preferred.
4. **True**
The masseter nerve is closer to the facial nerve and allows quicker reinnervation compared to the hypoglossal nerve, which takes longer to achieve functional recovery.
5. **True**
Early decompression within 2 weeks has the best outcomes, as delayed surgery may lead to irreversible nerve damage.
6. **False**
Stereotactic radiosurgery is used to control tumor growth but does not restore nerve function. Symptom management and facial reanimation may still be necessary.
7. **True**
MRI with gadolinium provides high-resolution imaging of the facial nerve, revealing inflammation in Bell's palsy or fusiform enlargement in schwannomas.

8. False

The facial nerve is preserved whenever possible. Sacrifice is performed only when the nerve is directly infiltrated by the tumor.

9. True

Synkinesis occurs when regenerating facial nerve fibers innervate inappropriate muscle groups, leading

to unintentional movements during voluntary facial expressions.

10. False

Hypoglossal nerve transfer can restore some degree of facial movement, but the results are rarely complete. Functional deficits, such as asymmetry and impaired tongue movement, are common.

MULTIPLE CHOICE QUESTIONS

- 1. A 35-year-old female patient presented with facial nerve palsy along with clinical features as shown in below picture with swollen lips and fissured tongue. What is the most likely diagnosis of this condition?**



- a. Moebius syndrome
- b. Melkersson-Rosenthal syndrome
- c. Ramsay Hunt syndrome
- d. Van der Hoeve syndrome

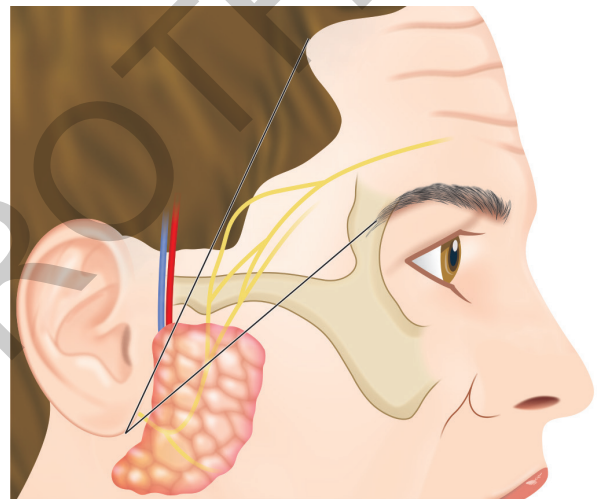
- 2. Which of the following is described as Type 2 Katz Catalano classification?**

- a. Buccal loop
- b. Forms Zygomatic loop
- c. Straight branching of facial nerve
- d. Multiple loops

- 3. Which of the following is not true about Facial schwannoma?**

- a. Typically arise from tympanic segment of facial nerve
- b. Mass along the course of facial nerve
- c. Post-contrast MRI depicts strongly enhancing mass like cholesteatoma
- d. All of the above is correct

- 4. Which of the following branch of facial nerve can be detected by below shown picture?**



- a. Marginal mandibular
- b. Buccal
- c. Zygomatic
- d. Temporal

- 5. In parotid surgery, which structure lies immediately superior to the buccal branch of the facial nerve?**

- a. Retromandibular vein
- b. Zygomatic arch
- c. Masseter muscle
- d. External carotid artery

- 6. "Safety zone" for avoiding injury to the marginal mandibular branch of the facial nerve is defined as a region:**

- a. Above the hyoid bone
- b. Inferior to the angle of the mandible
- c. Within 1–2 cm below the lower border of the mandible
- d. At the midpoint of the zygomatic arch

7. Which of the following correctly describes the anatomical position of the temporal branch of the facial nerve?

- It crosses deep to the superficial temporal artery at the zygomatic arch
- It lies within the superficial musculoaponeurotic system (SMAS) layer
- It runs immediately inferior to the lateral orbital rim
- It is consistently protected by the temporalis fascia in the lateral brow region

8. Which imaging feature is most specific for identifying facial nerve schwannomas?

- Cystic degeneration on CT
- Fusiform enlargement of the facial nerve canal on MRI

- Enhancement along the nerve path on contrast-enhanced CT
- Bone erosion at the stylomastoid foramen

9. Which nerve is responsible for elevating the corner of the mouth and is at risk during parotidectomy?

- Buccal branch
- Marginal mandibular branch
- Zygomatic branch
- Temporal branch

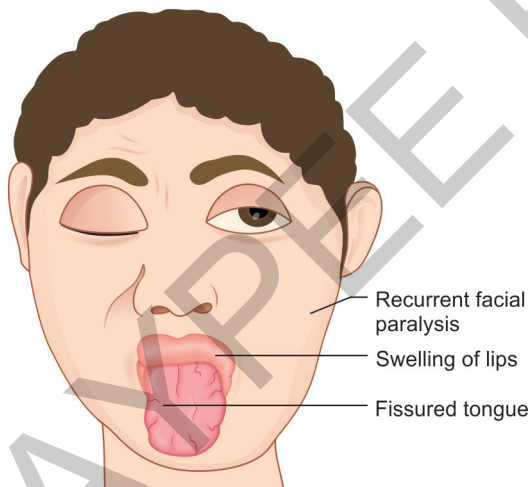
10. Pitanguy line is primarily used as a surgical landmark to identify which branch of the facial nerve?

- Buccal branch
- Cervical branch
- Temporal branch
- Zygomatic branch

EXPLANATIONS

1. Ans. (b) Melkersson-Rosenthal syndrome

The clinical findings suggestive of Melkersson-Rosenthal syndrome include recurrent facial palsy, fissured tongue, and swelling of the lips.



2. Ans. (b) Forms Zygomatic loop

Katz Catalano Classification	
Type I (25%)	Branches are separate
Type II (14%)	Buccal branch fuses with Zygomatic branch
Type III (44%)	Major communicating, buccal & other branches
Type IV (14%)	Complex branching between all branches
Type V (3%)	More than 1 Major trunk

3. Ans. (c) Post-contrast MRI depicts strongly enhancing mass like cholesteatoma

Middle ear Schwannomas typically originate from the tympanic segment of the facial nerve. An important imaging feature is the presence of a mass along the course of the facial nerve, which helps distinguish it from cholesteatoma. On post-contrast MRI, a Schwannoma appears as a strongly enhancing mass, whereas cholesteatomas do not enhance with contrast.

4. Ans. (d) Temporal

Correia and Zani (1973) described the temporal branches of the facial nerve as located within an area defined by two diverging lines: one extending from the earlobe to the lateral brow and the other to the lateral end of the highest forehead crease. While generally accurate, this rule does not account for the auricular ramus. In most of this triangular region, the nerve lies immediately subcutaneous, lacking protection from overlying muscle or the parotid gland.

5. Ans. (b) Zygomatic arch

The buccal branch runs parallel to the zygomatic arch and is located immediately inferior to it.

6. Ans. (c) Within 1–2 cm below the lower border of the mandible

Marginal mandibular branch typically lies within 1–2 cm below the mandible and is at risk during sub-mandibular surgery or procedures near the mandible.

7. Ans. (b) It lies within the superficial musculoaponeurotic system (SMAS) layer

Temporal branch runs within the SMAS layer and is vulnerable during procedures such as rhytidectomy or brow lifts.

8. Ans. (b) Fusiform enlargement of the facial nerve canal on MRI

Fusiform enlargement along the facial nerve canal is characteristic of schwannomas and is best visualized on MRI. Many lesions, including inflammatory conditions (e.g., Bell's palsy, perineural spread of malignancy), can show enhancement along the course of the facial nerve. While it suggests an abnormality of the nerve, it does not specifically point to a schwannoma. Additionally, CT lacks the soft-tissue resolution of MRI, making it less reliable for

identifying the fusiform morphology characteristic of schwannomas.

9. Ans. (c) Zygomatic branch

Zygomatic branch innervates the zygomaticus major muscle, which elevates the corner of the mouth.

10. Ans. (c) Temporal branch

Pitanguy line is an important surgical landmark that approximates the course of the temporal branch of the facial nerve as it travels from the parotid gland to innervate the forehead muscles. It is drawn from the central tragus to the lateral end of the eyebrow, with the nerve typically located about 1–1.5 cm inferior to the line. This landmark is crucial in procedures like facelifts and brow lifts to avoid nerve injury, which could result in forehead asymmetry and inability to elevate the eyebrow.

Review of Head & Neck Oncosurgery

Recognizing the scarcity of comprehensive resources tailored specifically for superspecialty and specialist ENT exam preparation, we developed this book with the primary goal of equipping aspirants to excel in these competitive exams. Given that many of these exams feature repeated questions, we have meticulously compiled and highlighted them to help candidates focus on high-yield topics.

This book provides in-depth coverage of various aspects of head and neck oncosurgery, offering expert guidance for effective preparation. To enhance comprehension, we have incorporated tables, key points, illustrations, and flowcharts, simplifying complex concepts for better retention. We extend our sincere gratitude to all contributors for their dedication and hard work in making this book a valuable resource for exam success. Enhance your learning with our 'Test Your Knowledge' sections, designed to reinforce key concepts.

Kantamani Bala Teja, the Chief Editor and author of this book, completed his MBBS from PSIMS & RF, Vijayawada, Andhra Pradesh, followed by an MS in ENT from ASRAM Medical College, Andhra Pradesh. He pursued his MCh in head and neck oncosurgery from the prestigious Tata Memorial Hospital, Mumbai, Maharashtra, India, where he was awarded a Gold Medal for his excellence.

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**MEDARC HEALTH
SCIENCES LTD**

Email: info@medarcpublishing.com

ISBN 978-1-917851-02-2

