Short Case Mastery: BDS Surgery Clinical Examination

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Cover

SHORT CASE MASTERY

From Inspection to Viva: The Complete Short Case Companion for BDS Surgery

9 short cases · Step-by-step examination approach · 450 viva questions graded Easy, Moderate and Hard



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Preface

The short case is where a BDS student either shines or freezes. In five to seven minutes the examiner watches how you introduce yourself, how you examine, how you present, and then asks a rapid series of questions. This book trains all four.

Each chapter has two parts. **Part A: The Approach** gives the examination sequence exactly as you should perform it at the bedside, followed by a model presentation and the differential diagnosis. **Part B: Viva Questions** gives 50 questions most likely to be asked on that case, graded so you can revise in layers:

- **Easy (Q1–20):** definitions, anatomy and basic signs. Every student must know these.
- **Moderate (Q21–40):** investigations, interpretation of signs and principles of management.
- **Hard (Q41–50):** the questions that separate a pass from a distinction.

Answers are deliberately short, in the words you should speak aloud. Content follows Bailey & Love's Short Practice of Surgery (27th Edition) and standard clinical-methods texts.

Read the approach, practise it on a friend, then test yourself on the questions. Short cases are not memorised; they are rehearsed.

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Golden Rules of the Short Case

Every short case follows the same skeleton; master it once and apply it to every patient.

The universal sequence (WIPER + Look, Feel, Move, Listen)

1. **W**ash your hands.
2. **I**ntroduce yourself, confirm the patient's name and age, and take consent.
3. **P**osition the patient correctly for the region (e.g. sitting with neck slightly extended for thyroid).
4. **E**xpose adequately while preserving dignity; ask for a chaperone where appropriate.
5. **R**eassure: ask "Is there any pain?" before touching.
6. **Inspection:** site, size, shape, surface, edge, colour, skin over it, scars, pulsation, movement with swallowing or tongue protrusion.

7. **Palpation:** always compare with the normal side; start away from the tender area; confirm the inspection findings, then temperature, tenderness, consistency, fluctuation, transillumination, compressibility, reducibility, fixity to skin and deep structures.
8. **Percussion and auscultation** where relevant (bruit over a thyroid, a vascular swelling).
9. **Regional lymph nodes:** never forget them.
10. **Complete the examination:** "I would like to examine the oral cavity, the other side, the cranial nerves and do a general physical examination."
11. **Thank the patient** and cover them.

How to present

Speak in one confident paragraph: "This is a 35-year-old lady with a swelling in front of the neck of 2 years' duration. On examination there is a 4 × 3 cm smooth, firm swelling that moves with swallowing but not with protrusion of the tongue. The lower border is palpable, there is no retrosternal extension, and no cervical lymphadenopathy. My provisional diagnosis is a solitary thyroid nodule, and my differentials are…"

Viva etiquette

- Answer the question asked, then stop. Long answers invite harder questions.
- If you do not know, say "I am not sure, sir/madam" rather than guessing wildly.
- Always list the most common cause first.
- Use correct terms: *fluctuation*, not "softness"; *transillumination*, not "light test".
- Never hurt the patient. Examiners fail students for roughness faster than for ignorance.

Chapter 1: Examination of a Swelling (Lump)

Any lump, anywhere, is examined by the same eleven questions; get these right and every other swelling chapter becomes easier.

Part A: The Approach

Short history (ask in 30 seconds): duration, mode of onset, progression (rapid growth suggests malignancy or inflammation), pain, change in size, other lumps, discharge, weight loss, loss of appetite.

Inspection

- Site (describe in relation to anatomical landmarks), number, size in cm, shape.
- Surface (smooth, lobulated, nodular) and edge (well or ill defined).

- Skin over the swelling: colour, stretching, punctum (sebaceous cyst), dilated veins, scars, ulceration.
- Visible pulsation or peristalsis; movement with respiration or muscle contraction.

Palpation

- Local temperature and tenderness (back of hand first, then fingers).
- Confirm site, size, shape, surface, edge.
- Consistency: soft, cystic, firm, hard, bony hard.
- Fluctuation (two-finger test in two planes at right angles); Paget's test for small swellings.
- Transillumination (in a dark room with a pen torch).
- Compressibility (empties on pressure, refills on release: haemangioma) versus reducibility (returns to cavity: hernia).
- Pulsation: transmitted versus expansile (fingers pushed apart).
- Fixity to skin (pinch skin over it) and to deep structures (contract underlying muscle; mobility reduces in a deep lump).
- Slip sign (lipoma edge slips under the finger).

Percussion and auscultation: dull versus resonant; bruit over a vascular lesion.

Regional lymph nodes and general examination: pallor, jaundice, other lumps, systemic spread.

Model presentation: "A 40-year-old man with a painless, slowly enlarging swelling on the back of 3 years' duration. It is a 6 × 5 cm soft, lobulated, non-tender swelling with a positive slip sign, not fixed to skin, not transilluminant, and regional nodes are not palpable. My diagnosis is a subcutaneous lipoma."

Differential diagnosis of a subcutaneous swelling: lipoma, sebaceous (epidermoid) cyst, dermoid cyst, neurofibroma, haemangioma, lymph node, abscess, soft tissue sarcoma.

Part B: 50 Viva Questions

Easy (Q1–20)

1. What is a swelling? Any abnormal enlargement of a part of the body, due to a lump, fluid, inflammation or hypertrophy.

2. What is the commonest benign soft tissue tumour? Lipoma.

3. What is the slip sign? When the edge of a lipoma is pressed, it slips away from under the palpating finger because of its lobulated, soft fatty nature.

4. What is a punctum? A small dark dot on the skin over an epidermoid (sebaceous) cyst, representing the blocked duct opening.

5. How do you test for fluctuation? Fix the swelling with two fingers of one hand and press the centre with a finger of the other; displacement felt in two planes at right angles confirms fluid.

6. Which swellings transilluminate? Those with clear fluid: cystic hygroma, hydrocele, ranula, meningocele, some branchial and thyroglossal cysts.

7. What are the cardinal signs of inflammation? Rubor (redness), calor (heat), dolor (pain), tumor (swelling) and functio laesa (loss of function).

8. Name the consistencies of a swelling. Soft, cystic, firm, rubbery, hard and bony hard.

9. What is an epidermoid cyst? A cyst lined by stratified squamous epithelium and filled with keratin, arising from an occluded pilosebaceous follicle.

10. Name common sites of a dermoid cyst. Lines of embryonic fusion: outer angle of the eye (external angular dermoid), midline of the neck, floor of the mouth.

11. What is a haemangioma? A benign proliferation of blood vessels; compressible, bluish, may show a bruit.

12. What is a neurofibroma? A benign tumour of nerve sheath; mobile across but not along the line of the nerve, may cause tingling on pressure.

13. What is an abscess? A localised collection of pus surrounded by granulation tissue.

14. What is the treatment of an abscess? Incision and drainage ("where there is pus, let it out"), with antibiotics if cellulitis or systemic features are present.

15. Why do we always examine lymph nodes? They indicate infection or malignant spread from the lump.

16. What is a sinus? A blind-ended tract lined by granulation tissue that opens onto an epithelial surface.

17. What is a fistula? An abnormal communication between two epithelial surfaces.

18. What is the difference between compressible and reducible? Compressible empties on pressure but stays in place (haemangioma); reducible disappears into another cavity (hernia).

19. Where is a lipoma most commonly found? The back, shoulder, neck and trunk, in subcutaneous tissue.

20. What investigation is usually first for a superficial lump? Ultrasound.

Moderate (Q21–40)

21. What is the difference between expansile and transmitted pulsation? Expansile pulsation pushes the fingers apart (aneurysm); transmitted pulsation lifts them in one direction (lump over an artery).

22. How do you test fixity to deep structures? Contract the underlying muscle; a swelling fixed to it becomes less mobile.

23. What is Paget's test? For a small swelling: press the centre; a solid lump feels harder in the centre, a cystic one softer.

24. Name the complications of an epidermoid cyst. Infection, ulceration, sebaceous horn, calcification and rarely malignant change.

25. Why must the cyst wall be removed completely? Remnants of the wall cause recurrence.

26. What features suggest a malignant swelling? Rapid growth, hard consistency, irregular surface, ill-defined edge, fixity, skin involvement and lymphadenopathy.

27. What is a sarcoma? A malignant tumour of mesenchymal (connective tissue) origin.

28. When should a lipoma be suspected to be a liposarcoma? Size over 5 cm, deep to fascia, rapid growth, pain or recurrence.

29. What is FNAC and its advantage? Fine-needle aspiration cytology; quick, cheap, outpatient diagnosis of cells.

30. What is the limitation of FNAC? It shows cells, not architecture; it cannot reliably differentiate follicular adenoma from carcinoma or grade lymphoma.

31. What is a Trucut (core) biopsy? A wide-bore needle biopsy giving a tissue core for histology and architecture.

32. When is incisional versus excisional biopsy done? Excisional for small lumps (whole lesion removed); incisional for large lumps where only a sample is taken.

33. What is a cold abscess? A tuberculous abscess without signs of acute inflammation (no heat, redness).

34. What is the classical site of a cold abscess in the neck? The posterior triangle, from tuberculous cervical lymph nodes (collar-stud abscess).

35. What is a collar-stud abscess? A tuberculous abscess that has burst through the deep fascia into the subcutaneous tissue, forming two communicating cavities.

36. What is a ganglion? A cystic swelling arising from a joint capsule or tendon sheath, containing gelatinous fluid, commonly on the dorsum of the wrist.

37. Name the types of haemangioma. Capillary (strawberry naevus), cavernous and venous malformations.

38. What is the natural history of a strawberry naevus? It appears after birth, grows rapidly, then usually involutes by 7 to 9 years.

39. What is the role of MRI in soft tissue lumps? Defines depth, extent and relation to vessels and nerves; essential before biopsy of a suspected sarcoma.

40. What is lymphadenitis? Inflammation of a lymph node, usually secondary to infection in its drainage area.

Hard (Q41–50)

41. Why should a suspected sarcoma not be biopsied casually? The biopsy tract must be excised at definitive surgery; a poorly placed incision can contaminate tissue planes.

42. What is Dercum's disease? Adiposis dolorosa: multiple painful lipomas, usually in middle-aged women.

43. What is von Recklinghausen's disease? Neurofibromatosis type 1: multiple neurofibromas, café-au-lait spots, axillary freckling and Lisch nodules.

44. Name complications of a neurofibroma. Sarcomatous change, pressure on nerves, cystic degeneration and haemorrhage.

45. What is a sebaceous horn? Dried, hardened sebum projecting from a ruptured sebaceous cyst.

46. What is Cock's peculiar tumour? An ulcerated, infected sebaceous cyst of the scalp with exuberant granulation tissue that mimics a squamous cell carcinoma.

47. What is the sign of emptying? A haemangioma or venous malformation empties on pressure and slowly refills on release.

48. What is the difference between a hamartoma and a neoplasm? A hamartoma is a disorganised overgrowth of tissue normal to the site and stops growing with the host; a neoplasm grows autonomously.

49. What is a keloid and how does it differ from a hypertrophic scar? A keloid extends beyond the original wound margins and rarely regresses; a hypertrophic scar stays within the margins and often improves.

50. How is a keloid treated? Intralesional triamcinolone, pressure garments, silicone sheets, intralesional excision with post-operative steroid or radiotherapy; simple excision alone recurs.

Chapter 2: Examination of an Ulcer

An ulcer is diagnosed largely by its edge, floor, base and regional lymph nodes; in the mouth, any ulcer persisting beyond 3 weeks is cancer until proved otherwise.

Part A: The Approach

Short history: duration, onset (trauma, spontaneous), pain, discharge, bleeding, recurrence, sharp tooth or ill-fitting denture, smoking, naswar, pan and betel nut chewing, diabetes, TB contact, weight loss.

Inspection

- Site, number, size, shape (round, oval, irregular, serpiginous).
- **Edge** (the most important feature): sloping, punched out, undermined, raised, rolled out (everted).
- **Floor** (the visible surface): healthy red granulation, slough, pale granulation, necrotic tissue, "apple jelly" nodules.
- Discharge: serous, purulent, blood-stained.
- Surrounding skin or mucosa: inflammation, induration, pigmentation, scarring, leukoplakia.

Palpation

- Tenderness, bleeding on touch.
- **Base** (what the ulcer rests on; felt between finger and thumb): soft or indurated.
- Fixity to deeper structures (bone, muscle).
- Edge and margin palpated for induration.

Regional lymph nodes: essential. Hard, fixed nodes suggest carcinoma.

Complete the examination: "I would also examine the vascular and nervous supply of the part, look for other ulcers, and do a general physical examination."

Model presentation: "A 60-year-old male smoker and naswar user with a painless ulcer on the lateral border of the tongue for 3 months. It is a 2 × 1.5 cm irregular ulcer with a raised, everted edge, necrotic floor and indurated base that bleeds on touch. There are hard, mobile ipsilateral submandibular nodes. My diagnosis is squamous cell carcinoma of the tongue."

Edge	Typical ulcer
Sloping	Healing traumatic or venous ulcer
Punched out	Syphilitic (gumma), trophic (neuropathic)

Edge	Typical ulcer
Undermined	Tuberculous
Raised, rolled (pearly)	Basal cell carcinoma
Everted (rolled out)	Squamous cell carcinoma

Part B: 50 Viva Questions

Easy (Q1–20)

1. What is an ulcer? A break in the continuity of the covering epithelium (skin or mucous membrane).

2. What are the parts of an ulcer? Margin, edge, floor and base.

3. What is the difference between floor and base? The floor is what you see; the base is what the ulcer rests on and is felt.

4. Which part of an ulcer is most important diagnostically? The edge.

5. What is the edge of a tuberculous ulcer? Undermined.

6. What is the edge of a squamous cell carcinoma? Raised and everted.

7. What is the edge of a basal cell carcinoma? Raised, rolled, pearly with telangiectasia.

8. What is the edge of a syphilitic gumma? Punched out.

9. What is a rodent ulcer? Basal cell carcinoma; it erodes locally like a rodent gnawing.

10. What is granulation tissue? New capillaries, fibroblasts and inflammatory cells forming in a healing wound.

11. What does healthy granulation tissue look like? Red, granular, bleeds easily, with minimal serous discharge.

12. Name three classes of ulcer clinically. Healing (spreading edge with granulation), spreading (inflamed, sloughy), and callous (chronic, pale, non-healing).

13. What is slough? Dead soft tissue, yellow-grey, adherent to the floor.

14. What is a traumatic ulcer in the mouth usually caused by? A sharp tooth, ill-fitting denture, or accidental biting.

15. What is an aphthous ulcer? A recurrent, painful, small shallow oral ulcer with a yellow floor and red halo.

16. Why examine lymph nodes in an ulcer? To detect infection or malignant spread.

17. What is a Marjolin's ulcer? A squamous cell carcinoma arising in a chronic scar or ulcer (e.g. burn scar).

18. What is the commonest site of oral cancer in Pakistan? The buccal mucosa (linked to naswar and pan chewing).

19. What is the first investigation for a chronic oral ulcer? Biopsy from the edge.

20. Why is biopsy taken from the edge? The edge contains both normal and abnormal tissue; the centre is often necrotic.

Moderate (Q21–40)

21. What is induration? Hardening of tissue around or beneath an ulcer, due to malignant infiltration or chronic inflammation.

22. What does an indurated base suggest? Malignancy (or a chronic specific ulcer such as syphilitic chancre).

23. Why does a tuberculous ulcer have an undermined edge? Caseation destroys the subcutaneous tissue faster than the overlying skin, leaving thin, bluish overhanging skin.

24. What is the floor of a tuberculous ulcer? Pale granulation with caseous material ("apple jelly" appearance).

25. What are the causes of a non-healing ulcer? Infection, ischaemia, malignancy, diabetes, malnutrition, foreign body, repeated trauma, steroids and radiation.

26. What is a trophic (neuropathic) ulcer? A painless, punched-out ulcer over a pressure point in an anaesthetic area (diabetes, leprosy).

27. Where is a venous ulcer typically found? The gaiter area, above the medial malleolus.

28. What is the typical arterial (ischaemic) ulcer? Painful, punched out, on toes or pressure points, with absent pulses.

29. Name premalignant lesions of the oral cavity. Leukoplakia, erythroplakia, oral submucous fibrosis, lichen planus (erosive) and chronic hyperplastic candidiasis.

30. Which premalignant lesion has the highest risk of malignancy? Erythroplakia.

31. What is the commonest histological type of oral cancer? Squamous cell carcinoma.

32. Name risk factors for oral cancer. Tobacco (smoked and smokeless, including naswar), betel quid and areca nut, alcohol, sharp teeth, poor oral hygiene and HPV.

33. What investigations are needed in a malignant oral ulcer? Biopsy, OPG (orthopantomogram), CT or MRI for local extent, chest X-ray or CT for metastasis, FNAC of nodes.

34. Which lymph nodes drain the tip of the tongue? Submental nodes.

35. Which nodes drain the lateral border of the tongue? Submandibular and deep cervical (jugulodigastric) nodes.

36. What is a chancre? The primary lesion of syphilis: a painless, indurated ulcer with clean floor and rubbery regional nodes.

37. Why do some ulcers bleed easily? Malignant ulcers have fragile, abnormal vessels.

38. What is a curling ulcer? An acute duodenal (stress) ulcer after major burns; not a skin ulcer.

39. How do you treat a traumatic oral ulcer? Remove the cause (smooth or extract the sharp tooth, adjust the denture) and review in 2 weeks; biopsy if not healed.

40. What is the 2-week rule? An oral ulcer not healing within 2 to 3 weeks after removing the cause must be biopsied.

Hard (Q41–50)

41. Why does a Marjolin's ulcer spread slowly to lymph nodes? Scar tissue has poor lymphatics, so nodal spread is delayed.

42. Why is a Marjolin's ulcer painless? Scar tissue has no nerve endings.

43. What is the TNM T-staging of oral cancer by size? T1 up to 2 cm, T2 over 2 to 4 cm, T3 over 4 cm, T4 invading adjacent structures (AJCC 8th edition also uses depth of invasion).

44. Why is depth of invasion important in oral SCC? Depth greater than 4 mm correlates with occult nodal metastasis and favours elective neck dissection.

45. What is a skip metastasis in tongue cancer? Spread to level III or IV nodes without involvement of levels I or II.

46. What is a Bazin's ulcer? Erythema induratum, a tuberculous ulcer on the calves of young women.

47. What is a Meleney's ulcer? Progressive bacterial synergistic gangrene after surgery, caused by microaerophilic streptococci and staphylococci.

48. What is the role of toluidine blue in oral lesions? A vital stain that highlights dysplastic and malignant areas to guide biopsy.

49. What is field cancerisation? The whole mucosa exposed to carcinogens is at risk, so second primary tumours occur.

50. What is the treatment principle of early oral SCC? Wide local excision with 1 cm margins, with neck dissection for nodal disease or deep tumours; radiotherapy for adverse features.

Chapter 3: Neck Swelling and Cervical Lymph Nodes

In a neck swelling, first decide the triangle and the plane; that alone narrows the diagnosis to two or three conditions. In an adult over 40, a persistent lateral neck lump is a metastatic node until proved otherwise.

Part A: The Approach

Position: patient sitting on a stool, neck exposed down to the clavicles. Examine from the front for inspection and from behind for palpation of nodes.

Inspection

- Midline or lateral? Anterior or posterior triangle?
- Size, shape, surface, skin over it, scars, sinus.
- Movement with swallowing (thyroid, thyroglossal cyst) and with tongue protrusion (thyroglossal cyst).
- Visible pulsation (carotid body tumour, aneurysm).

Palpation

- Standard features: temperature, tenderness, size, consistency, fluctuation, transillumination.
- Relation to sternocleidomastoid: ask the patient to turn the chin against resistance to the opposite side; a swelling deep to the muscle becomes less prominent.
- Mobility: a carotid body tumour moves side to side but not up and down.
- Pulsation: transmitted versus expansile.

Systematic lymph node palpation (from behind, head slightly flexed to the side being examined): submental, submandibular, preauricular, postauricular, occipital, deep cervical chain (along sternocleidomastoid), posterior triangle, supraclavicular. For each palpable node describe number, size, consistency, tenderness, matting and fixity.

Complete the examination: examine the oral cavity, oropharynx, scalp, face, ears, thyroid, breasts, axillae, abdomen (liver and spleen) and request ENT examination including indirect laryngoscopy and nasopharyngoscopy.

Differential diagnosis by site

Region	Common swellings
Midline	Thyroglossal cyst, thyroid isthmus nodule, submental node, dermoid cyst, plunging ranula

Region	Common swellings
Anterior triangle	Lymph nodes, branchial cyst, carotid body tumour, submandibular gland, parotid tail, thyroid lobe
Posterior triangle	Lymph nodes (TB, lymphoma, metastasis), cystic hygroma, cervical rib, lipoma, subclavian aneurysm

Model presentation: "A 25-year-old man with multiple painless swellings on the right side of the neck for 4 months, with evening fever and weight loss. There are multiple matted, firm, non-tender nodes in the right posterior triangle, one with a fluctuant swelling over it. My diagnosis is tuberculous cervical lymphadenitis with a cold abscess."

Part B: 50 Viva Questions

Easy (Q1–20)

1. What are the boundaries of the anterior triangle? Midline of the neck, anterior border of sternocleidomastoid, and the lower border of the mandible.

2. What are the boundaries of the posterior triangle? Posterior border of sternocleidomastoid, anterior border of trapezius, and the middle third of the clavicle.

3. What is the commonest cause of a neck swelling? Lymph node enlargement.

4. What is the commonest cause of cervical lymphadenopathy in Pakistan? Reactive (infective) and tuberculous lymphadenitis.

5. Which midline swelling moves with tongue protrusion? Thyroglossal cyst.

6. Why does a thyroglossal cyst move with tongue protrusion? It is attached to the foramen caecum of the tongue via the thyroglossal tract and hyoid bone.

7. Where does a branchial cyst usually present? At the junction of the upper and middle third of the anterior border of sternocleidomastoid.

8. What does a branchial cyst contain? Turbid fluid rich in cholesterol crystals.

9. What is a cystic hygroma? A congenital lymphatic malformation, usually in the posterior triangle of infants; brilliantly transilluminant.

10. Name the levels of cervical lymph nodes. Level I submental and submandibular; II upper jugular; III middle jugular; IV lower jugular; V posterior triangle; VI central (anterior) compartment; VII superior mediastinal.

11. Where is Virchow's node? Left supraclavicular fossa, between the two heads of sternocleidomastoid.

12. What is Troisier's sign? An enlarged Virchow's node indicating metastasis from abdominal malignancy, especially stomach.

13. Which nodes are examined from behind? All cervical nodes are best palpated from behind with the head slightly flexed.

14. What is matting of lymph nodes? Nodes stuck together by periadenitis, typical of tuberculosis.

15. What is the consistency of nodes in lymphoma? Rubbery.

16. What is the consistency of metastatic nodes? Hard, often fixed.

17. What is a cold abscess? A tuberculous abscess without signs of acute inflammation.

18. Name a pulsatile swelling of the anterior triangle. Carotid body tumour (transmitted) or carotid aneurysm (expansile).

19. What is the first investigation for a neck lump? Ultrasound with FNAC.

20. What is a sternomastoid tumour? A fibrotic swelling in the sternocleidomastoid of a neonate after birth trauma, causing torticollis.

Moderate (Q21–40)

21. What are the stages of tuberculous lymphadenitis? Lymphadenitis, periadenitis (matting), cold abscess, collar-stud abscess and sinus formation.

22. How is TB lymphadenitis treated? Anti-tuberculous therapy for 6 months; aspiration of abscesses through non-dependent site; excision for residual nodes.

23. Why aspirate a cold abscess through a non-dependent site? To avoid a persistent discharging sinus.

24. What is the embryological origin of a branchial cyst? Remnant of the second branchial cleft (cervical sinus of His).

25. Where does a branchial fistula open? Externally at the lower third of anterior border of sternocleidomastoid; internally at the tonsillar fossa.

26. What is the treatment of a thyroglossal cyst? Sistrunk's operation.

27. What is Sistrunk's operation? Excision of the cyst, the tract and the central part of the hyoid bone up to the foramen caecum.

28. Why is the hyoid body removed? The tract passes through or around it; leaving it causes recurrence.

29. What is a carotid body tumour? A chemodectoma (paraganglioma) at the carotid bifurcation, mobile side to side but not vertically.

30. Why should a carotid body tumour never be biopsied? It is highly vascular and may bleed massively.

31. What is the investigation of choice for carotid body tumour? CT or MR angiography (shows splaying of carotid bifurcation, the lyre sign).

32. What is the role of a neck node in an occult primary? Metastatic squamous carcinoma in a neck node with no obvious primary requires panendoscopy and PET-CT to find the primary.

33. Why is excision biopsy of a node avoided in suspected metastatic SCC? It can seed the neck and compromise later neck dissection; FNAC is preferred.

34. When is excision biopsy of a node mandatory? Suspected lymphoma, as architecture is needed for typing.

35. What are B symptoms in lymphoma? Fever above 38°C, drenching night sweats, and weight loss over 10% in 6 months.

36. What is Pel-Ebstein fever? Cyclical fever seen in Hodgkin lymphoma.

37. What is the cell characteristic of Hodgkin lymphoma? Reed-Sternberg cell.

38. What is a cervical rib? An extra rib from the 7th cervical vertebra that can compress the subclavian artery or brachial plexus (thoracic outlet syndrome).

39. What is Ludwig's angina? Spreading cellulitis of the submandibular and sublingual spaces, usually from a lower molar infection, threatening the airway.

40. What is the first priority in Ludwig's angina? Securing the airway, then IV antibiotics and surgical decompression.

Hard (Q41–50)

41. What is a radical neck dissection? Removal of levels I to V nodes with sternocleidomastoid, internal jugular vein and accessory nerve.

42. What is a modified radical neck dissection? Removal of levels I to V nodes preserving one or more of accessory nerve, internal jugular vein or sternocleidomastoid.

43. What is a selective neck dissection? Removal of only the node levels at risk, e.g. supraomohyoid (levels I to III) for oral cancer.

44. What is the most troublesome morbidity of radical neck dissection? Shoulder dysfunction from accessory nerve sacrifice (shoulder drop, pain).

45. What is chylous fistula after neck dissection? Leakage of chyle from thoracic duct injury on the left side.

46. What is Shamblin classification? Grading of carotid body tumours by their relation to carotid vessels (I localised, II partially surrounding, III encasing).

47. What is Kikuchi disease? Histiocytic necrotising lymphadenitis: self-limiting tender cervical lymphadenopathy in young women.

48. What are Delphian nodes? Prelaryngeal nodes (level VI) in front of the cricothyroid membrane; involvement suggests laryngeal or thyroid malignancy.

49. What is a laryngocele? An air-filled dilatation of the laryngeal saccule, increasing in size on Valsalva; seen in trumpet players.

50. What is a pharyngeal pouch (Zenker's diverticulum)? A pulsion diverticulum through Killian's dehiscence, presenting as a left neck swelling with regurgitation of undigested food and gurgling.

Chapter 4: Thyroid Swelling

A thyroid short case is three examinations in one: the swelling, the patient's thyroid status, and the eyes. Never present a goitre without commenting on all three.

Part A: The Approach

Position: patient sitting, neck slightly extended, a glass of water ready.

Inspection (from the front)

- Site, size, shape (diffuse, multinodular, solitary nodule), surface, skin, scars.
- **Ask the patient to swallow:** the swelling moves up (attached to larynx by pretracheal fascia).
- **Ask the patient to protrude the tongue:** a thyroid swelling does not move; a thyroglossal cyst does.
- Lower border visible on swallowing? (If not, suspect retrosternal extension.)
- Dilated veins over the chest (retrosternal goitre).

Palpation (from behind, neck slightly flexed)

- Temperature, tenderness, size, surface, consistency, margins.
- Palpate each lobe by pushing the other lobe across (Lahey's method).
- Confirm movement on swallowing; try to get below the lower border.
- Tracheal position (from the front, in the suprasternal notch).
- **Carotid pulse (Berry's sign):** an absent pulse suggests malignant encasement.
- Kocher's test: gentle pressure on lateral lobes causes stridor if the trachea is compressed.

- Cervical lymph nodes.

Percussion: over the manubrium for retrosternal extension. **Auscultation:** bruit over the upper pole (toxic goitre).

Thyroid status: pulse (rate, rhythm), warm moist palms, fine tremor of outstretched hands, proximal myopathy, reflexes; in hypothyroidism dry skin, slow relaxing reflexes, bradycardia.

Eye signs: lid retraction (Dalrymple), lid lag (von Graefe), exophthalmos, Joffroy's sign (no forehead wrinkling on looking up), Möbius sign (failure of convergence), Stellwag's sign (infrequent blinking), ophthalmoplegia, chemosis.

Model presentation: "A 35-year-old woman with a swelling in front of the neck for 2 years, clinically euthyroid. There is a 4 × 3 cm smooth, firm swelling in the right lobe, moving with swallowing but not with tongue protrusion, lower border palpable, trachea central, carotid pulsation palpable, no lymphadenopathy, no eye signs. My diagnosis is a solitary thyroid nodule, euthyroid; differentials are a dominant nodule of multinodular goitre, follicular adenoma, colloid cyst and carcinoma."

Part B: 50 Viva Questions

Easy (Q1–20)

1. What is a goitre? Any enlargement of the thyroid gland.

2. Why does the thyroid move with swallowing? It is enclosed in the pretracheal fascia, which is attached to the larynx.

3. What is the commonest cause of goitre worldwide? Iodine deficiency.

4. What is the normal weight of the thyroid? About 20 to 25 g.

5. Name the parts of the thyroid gland. Two lateral lobes, isthmus and sometimes a pyramidal lobe.

6. At which level is the isthmus? Over the 2nd to 4th tracheal rings.

7. What is the blood supply of the thyroid? Superior thyroid artery (external carotid), inferior thyroid artery (thyrocervical trunk) and sometimes thyroidea ima.

8. What are the thyroid hormones? Thyroxine (T4), tri-iodothyronine (T3) and calcitonin (from C cells).

9. What is the first investigation in a goitre? Thyroid function tests (TSH, free T4).

10. What is the investigation of choice for a thyroid nodule? Ultrasound followed by FNAC.

11. Name the clinical types of goitre. Diffuse, multinodular and solitary nodule; toxic or non-toxic.

12. What is Graves' disease? Autoimmune hyperthyroidism caused by TSH receptor-stimulating antibodies, with diffuse goitre and eye signs.

13. What is Hashimoto's thyroiditis? Autoimmune thyroiditis causing hypothyroidism, with anti-TPO antibodies.

14. Name the symptoms of hyperthyroidism. Weight loss despite good appetite, heat intolerance, palpitations, sweating, tremor, irritability and diarrhoea.

15. Name the symptoms of hypothyroidism. Weight gain, cold intolerance, constipation, lethargy, dry skin, hoarse voice and menorrhagia.

16. What is lid lag? Upper lid lags behind the eyeball on looking downwards (von Graefe's sign).

17. What is exophthalmos? Forward protrusion of the eyeball with sclera visible below the iris.

18. What is the commonest thyroid cancer? Papillary carcinoma.

19. Which nerve is at risk in thyroidectomy causing hoarseness? Recurrent laryngeal nerve.

20. Which nerve injury causes loss of voice pitch? External branch of the superior laryngeal nerve.

Moderate (Q21–40)

21. What is Berry's sign? Absence of carotid pulsation due to encasement by a malignant thyroid.

22. What is Pemberton's sign? Raising both arms above the head causes facial congestion and distress in retrosternal goitre.

23. What is the Bethesda system? A six-category system for reporting thyroid FNAC: I non-diagnostic, II benign, III AUS/FLUS, IV follicular neoplasm, V suspicious for malignancy, VI malignant.

24. Why can FNAC not diagnose follicular carcinoma? Diagnosis needs capsular or vascular invasion, seen only on histology.

25. What are the features of papillary carcinoma on histology? Orphan Annie eye nuclei, nuclear grooves, psammoma bodies.

26. How does papillary carcinoma spread? Mainly lymphatic.

27. How does follicular carcinoma spread? Mainly haematogenous to bone and lung.

28. Which thyroid cancer is associated with MEN 2? Medullary carcinoma.

29. What is the tumour marker for medullary carcinoma? Calcitonin (and CEA).

30. What is the tumour marker for follow-up of differentiated thyroid cancer? Thyroglobulin, after total thyroidectomy.

31. What are the indications for thyroidectomy? Malignancy or suspicion, pressure symptoms, toxicity not controlled medically, retrosternal extension and cosmesis.

32. How is a toxic patient prepared for surgery? Antithyroid drugs (carbimazole) to achieve euthyroidism, beta-blockers, and Lugol's iodine for 10 days before surgery in Graves'.

33. Why is Lugol's iodine given before surgery? It reduces gland vascularity and makes it firmer (Wolff-Chaikoff effect).

34. What is thyroid storm? A life-threatening exacerbation of hyperthyroidism with fever, tachycardia, arrhythmias and confusion, usually in an unprepared patient.

35. How is thyroid storm treated? IV fluids, cooling, beta-blockers, propylthiouracil, Lugol's iodine, hydrocortisone and ICU care.

36. What causes post-thyroidectomy hypocalcaemia? Injury or devascularisation of parathyroid glands.

37. What are signs of hypocalcaemia? Perioral tingling, Chvostek's sign (facial twitch on tapping facial nerve) and Trousseau's sign (carpal spasm with BP cuff).

38. What is the most dangerous early complication of thyroidectomy? Reactionary haemorrhage causing a tension haematoma and airway obstruction.

39. How is a tension haematoma managed? Open the wound and evacuate the clot immediately at the bedside, then return to theatre.

40. What happens in bilateral recurrent laryngeal nerve palsy? Cords lie in the paramedian position causing stridor and airway obstruction; tracheostomy may be required.

Hard (Q41–50)

41. What is the relationship of the recurrent laryngeal nerve to the inferior thyroid artery? Variable; it may pass in front, behind or between branches, so the artery is ligated away from the gland or branches are ligated close to the capsule.

42. What is Berry's ligament? The posterior suspensory ligament fixing the thyroid to the cricoid and upper tracheal rings; the recurrent laryngeal nerve lies close to it.

43. What is the tubercle of Zuckerkandl? A posterior projection of the lateral lobe, a landmark for the recurrent laryngeal nerve, which lies medial to it.

44. What is the role of radioactive iodine after thyroid cancer surgery? Ablation of thyroid remnants and treatment of iodine-avid metastases in differentiated cancer.

45. Why is TSH suppressed after surgery for differentiated thyroid cancer? TSH stimulates growth of residual differentiated tumour cells.

46. What is a Hürthle cell neoplasm? A variant of follicular neoplasm made of oncocytic cells, more often bilateral and node positive.

47. What is anaplastic carcinoma? A highly aggressive undifferentiated cancer of the elderly, rapidly growing, often unresectable.

48. What is a lateral aberrant thyroid? Thyroid tissue in a lateral neck node, which is actually a metastasis from papillary carcinoma.

49. What is a non-recurrent laryngeal nerve? A right inferior laryngeal nerve arising directly from the vagus in the neck, associated with an aberrant right subclavian artery.

50. What is Plummer's disease? Toxic multinodular goitre (or toxic adenoma), usually without eye signs, in older patients, often with cardiac features such as atrial fibrillation.

Chapter 5: Parotid Gland

The parotid short case is won by three acts: lifting the ear lobe, examining the facial nerve, and looking inside the mouth at the duct opening and the tonsillar fossa.

Part A: The Approach

Short history: duration, pain, swelling with meals (obstruction), dry mouth, fever (parotitis), rapid growth, facial weakness (malignancy).

Inspection

- Swelling in front of and below the ear, behind the angle of the mandible.
- **Ear lobe lifted outwards** (a key sign of parotid origin).
- Obliteration of the retromandibular groove.
- Skin: redness, sinus, ulceration, fixity.
- Face: asymmetry, drooping angle of mouth (facial nerve palsy).

Palpation

- Temperature, tenderness, size, surface, consistency (a pleomorphic adenoma is firm and bosselated; a Warthin's tumour is soft and cystic).
- Mobility and fixity to skin, masseter (clench the teeth) and mandible.
- **Bimanual palpation** (one finger inside the mouth on the tonsillar fossa, the other outside) for deep lobe extension.

- Palpate the parotid duct (Stensen's) over the anterior border of the clenched masseter.

Inside the mouth: duct opening opposite the upper second molar; look for redness, pus or a stone; tonsil pushed medially (deep lobe tumour, the dumb-bell tumour).

Facial nerve: raise eyebrows, close eyes tightly, show teeth, blow out cheeks, whistle. Any weakness strongly suggests malignancy.

Lymph nodes: preauricular and deep cervical.

Model presentation: "A 45-year-old woman with a painless swelling below the left ear for 5 years. A 4 × 3 cm firm, bosselated, non-tender swelling lifting the ear lobe, mobile, not fixed to skin or masseter, the facial nerve intact, duct opening normal, no deep lobe extension, no lymphadenopathy. My diagnosis is pleomorphic adenoma of the superficial lobe of the left parotid."

Differential diagnosis: pleomorphic adenoma, Warthin's tumour, parotitis (viral, bacterial), sialectasis, Sjögren's syndrome, malignant tumour, preauricular lymph node, sebaceous cyst, masseteric hypertrophy.

Part B: 50 Viva Questions

Easy (Q1–20)

1. What is the largest salivary gland? The parotid.

2. What type of saliva does the parotid produce? Serous.

3. What is the name and opening of the parotid duct? Stensen's duct; opens opposite the crown of the upper second molar.

4. Which nerve runs through the parotid? The facial nerve.

5. Name the five terminal branches of the facial nerve. Temporal, zygomatic, buccal, marginal mandibular and cervical.

6. Why is the ear lobe lifted in a parotid swelling? The gland lies around the ear lobe, so enlargement pushes it outwards.

7. What is the commonest parotid tumour? Pleomorphic adenoma.

8. Why is it called pleomorphic? It contains both epithelial and mesenchymal (myxoid, chondroid) elements.

9. What is the second commonest benign parotid tumour? Warthin's tumour (adenolymphoma).

10. Which parotid tumour is associated with smoking? Warthin's tumour.

11. What is the rule of 80? About 80% of salivary tumours are in the parotid, 80% of parotid tumours are benign, and 80% of those are pleomorphic adenomas.

12. What is mumps? Viral (paramyxovirus) parotitis, usually bilateral, in children.

13. What is acute suppurative parotitis? Bacterial infection (Staphylococcus aureus) in dehydrated, elderly or post-operative patients with poor oral hygiene.

14. How is facial nerve function tested? Raise eyebrows, close eyes tightly, show teeth, blow out cheeks.

15. What does facial nerve palsy with a parotid lump suggest? Malignancy.

16. What is the first investigation for a parotid lump? Ultrasound and FNAC.

17. What is the operation for a benign superficial lobe tumour? Superficial parotidectomy.

18. Why is enucleation not done for pleomorphic adenoma? It has an incomplete capsule with pseudopodia; enucleation leads to recurrence.

19. What is the commonest malignant parotid tumour? Mucoepidermoid carcinoma.

20. What is a dumb-bell tumour? A deep lobe tumour passing through the stylomandibular tunnel and bulging into the oropharynx, pushing the tonsil medially.

Moderate (Q21–40)

21. Name the structures within the parotid from superficial to deep. Facial nerve, retromandibular vein, external carotid artery.

22. What is the landmark for finding the facial nerve trunk? The tragal pointer (nerve lies about 1 cm deep and inferior to it), the posterior belly of digastric, and the tympanomastoid suture.

23. What is Frey's syndrome? Gustatory sweating: flushing and sweating of the cheek on eating after parotidectomy.

24. What is the cause of Frey's syndrome? Aberrant regeneration of parasympathetic secretomotor fibres into sweat glands of the skin.

25. How is Frey's syndrome diagnosed? Minor's starch-iodine test.

26. How is Frey's syndrome treated? Botulinum toxin injection or antiperspirants; prevented by SMAS or fat grafting interposition.

27. What is the parasympathetic supply of the parotid? Glossopharyngeal nerve via lesser petrosal nerve, otic ganglion and auriculotemporal nerve.

28. What is the greater auricular nerve and its significance? A sensory nerve (C2, C3) often sacrificed in parotidectomy, causing ear lobe numbness.

29. What is the risk of malignant change in pleomorphic adenoma? About 3 to 5% after 10 to 15 years (carcinoma ex pleomorphic adenoma).

30. Features of malignant change in pleomorphic adenoma? Sudden growth, pain, fixity, facial nerve palsy, lymphadenopathy.

31. Why is open biopsy of a parotid lump avoided? It risks tumour spillage, recurrence and facial nerve injury.

32. Which imaging is best for deep lobe tumours? MRI.

33. What is Warthin's tumour on technetium scan? A "hot" spot, as it concentrates the isotope.

34. What is Sjögren's syndrome? Autoimmune destruction of salivary and lacrimal glands causing dry mouth and dry eyes, with bilateral parotid enlargement.

35. What is the risk in long-standing Sjögren's? Development of MALT lymphoma.

36. What is the commonest site of salivary stones? The submandibular gland (80%), not the parotid.

37. Why are stones rarer in the parotid? Parotid saliva is serous and less viscous, with fewer calcium salts.

38. What is sialectasis? Dilatation of the salivary ducts from recurrent infection, showing a "snowstorm" or "tree in bloom" on sialography.

39. What is the most common complication after parotidectomy? Temporary facial nerve weakness (neuropraxia).

40. Name other complications of parotidectomy. Haematoma, salivary fistula, sialocele, Frey's syndrome, numbness of ear lobe and depression deformity.

Hard (Q41–50)

41. What is the faciovenous plane of Patey? The plane between the superficial and deep lobes containing the facial nerve, used surgically.

42. What is total conservative parotidectomy? Removal of both superficial and deep lobes while preserving the facial nerve.

43. What is radical parotidectomy? Removal of the whole gland including the facial nerve, for malignancy invading the nerve, followed by nerve grafting (great auricular or sural nerve).

44. Which salivary cancer shows perineural spread? Adenoid cystic carcinoma.

45. What is the histological pattern of adenoid cystic carcinoma? Cribriform (Swiss-cheese) pattern.

46. What is mucoepidermoid carcinoma made of? Mucous cells, epidermoid cells and intermediate cells; graded low, intermediate or high.

47. What is extracapsular dissection? Removal of a benign superficial tumour with a cuff of normal tissue without formally dissecting the nerve; used for small mobile tumours by experienced surgeons.

48. What is the treatment of a sialocele? Repeated aspiration with pressure dressing, anticholinergics, or botulinum toxin.

49. What is the House-Brackmann scale? A six-grade scale of facial nerve function, from I normal to VI total paralysis.

50. What is the role of post-operative radiotherapy in parotid cancer? For high-grade tumours, close or positive margins, perineural invasion, nodal disease and recurrent tumours.

Chapter 6: Submandibular Gland

The one manoeuvre that makes this short case is bimanual palpation: a submandibular gland is bimanually palpable, a submandibular lymph node is not.

Part A: The Approach

Short history: swelling and pain during or before meals that settle afterwards (salivary colic), bad taste or pus in the mouth, dry mouth, dental problems, smoking.

Inspection

- Swelling in the submandibular triangle, below the body of the mandible.
- Skin: redness, sinus, scar.
- Inside the mouth: floor of mouth, opening of Wharton's duct on the sublingual papilla beside the frenulum; look for a stone, redness or pus.

Palpation

- Temperature, tenderness, size, surface, consistency.
- **Bimanual palpation:** gloved index finger in the floor of the mouth, lateral to the tongue, the other hand under the mandible pushing upward. The gland is felt between the two fingers.
- Palpate along the course of Wharton's duct for a stone.
- Press the gland and watch the duct opening for saliva or pus.
- Mobility, fixity to the mandible.

Nerves: lingual nerve (sensation of anterior two-thirds of the tongue), hypoglossal nerve (protrusion of tongue), marginal mandibular branch of facial nerve (angle of mouth).

Lymph nodes: submental, submandibular and deep cervical.

Model presentation: "A 40-year-old man with recurrent painful swelling below the right jaw during meals for one year. There is a 3 × 3 cm firm, mildly tender swelling in the right submandibular triangle, bimanually palpable, with a hard stone felt along Wharton's duct and turbid saliva from the duct opening. My diagnosis is right submandibular sialolithiasis with chronic sialadenitis."

Differential diagnosis: submandibular lymph node, sialolithiasis, chronic sialadenitis, pleomorphic adenoma, malignant tumour, plunging ranula, Ludwig's angina, dental abscess.

Part B: 50 Viva Questions

Easy (Q1–20)

1. What type of saliva does the submandibular gland produce? Mixed (serous and mucous), mainly serous.

2. What is the name of the submandibular duct? Wharton's duct.

3. Where does Wharton's duct open? On the sublingual papilla, beside the frenulum of the tongue.

4. How long is Wharton's duct? About 5 cm.

5. Which salivary gland is most prone to stones? The submandibular gland (about 80% of stones).

6. What is salivary colic? Pain and swelling of the gland at meal times due to obstruction of the duct.

7. How do you differentiate the gland from a lymph node? The gland is bimanually palpable; a node is not.

8. What are the parts of the submandibular gland? A large superficial part and a small deep part, continuous around the posterior border of mylohyoid.

9. What is a sialolith? A calculus in a salivary gland or duct.

10. What are salivary stones made of? Calcium phosphate and carbonate with an organic matrix.

11. What percentage of submandibular stones are radio-opaque? About 80%.

12. Which X-ray shows a submandibular duct stone? Lower occlusal (intraoral) view.

13. What is a ranula? A mucus extravasation cyst of the sublingual gland in the floor of the mouth, bluish like a frog's belly.

14. What is a plunging ranula? A ranula that extends through or behind mylohyoid into the neck.

15. Which nerve is closely related to Wharton's duct? The lingual nerve, which crosses it (passes lateral, below, then medial).

16. Which nerve can be damaged during submandibular gland excision causing drooping of the lower lip? Marginal mandibular branch of the facial nerve.

17. What is the treatment of a stone near the duct opening? Intraoral removal by incising the duct over the stone.

18. What is the treatment of a stone within the gland or of chronic sialadenitis? Excision of the submandibular gland.

19. What is the commonest benign tumour of the submandibular gland? Pleomorphic adenoma.

20. Which incision is used for submandibular gland excision? A skin crease incision 3 to 4 cm (two fingers) below the lower border of the mandible.

Moderate (Q21–40)

21. Why are stones commoner in the submandibular gland? Its saliva is more alkaline, viscous and calcium-rich, and the duct is long with an uphill course against gravity.

22. Why is the incision made two fingers below the mandible? To avoid the marginal mandibular nerve, which may loop below the mandible.

23. What is the relation of the facial artery to the gland? It grooves the posterior part of the deep surface of the gland; the facial vein lies superficial to the gland.

24. Name three nerves at risk in submandibular gland excision. Marginal mandibular, lingual and hypoglossal nerves.

25. What does lingual nerve injury cause? Numbness of the anterior two-thirds of the tongue.

26. What does hypoglossal nerve injury cause? Deviation of the protruded tongue to the same side and wasting of that half.

27. What is the parasympathetic supply of the submandibular gland? Facial nerve via chorda tympani, joining the lingual nerve, synapsing in the submandibular ganglion.

28. What is the proportion of malignancy in submandibular tumours? About 50%, much higher than in the parotid.

29. What is the commonest malignant submandibular tumour? Adenoid cystic carcinoma.

30. What is Küttner tumour? Chronic sclerosing sialadenitis of the submandibular gland, a hard swelling mimicking cancer; part of IgG4-related disease.

31. What is sialography? Radiographic imaging of the ductal system after injecting contrast into the duct.

32. When is sialography contraindicated? In acute infection.

33. What is sialendoscopy? Endoscopic examination of salivary ducts for diagnosing and removing stones and strictures.

34. What is the role of ultrasound in salivary disease? First-line imaging: detects stones, duct dilatation, abscess and masses, and guides FNAC.

35. What is the treatment of a ranula? Excision of the sublingual gland with the ranula; marsupialisation has higher recurrence.

36. Why does a ranula recur after simple excision? The source, the sublingual gland, is left behind.

37. What is Wharton's duct's relation to the hypoglossal nerve? The nerve lies below the duct on hyoglossus.

38. What is the effect of dehydration on salivary glands? Reduced flow, predisposing to ascending bacterial infection.

39. What is the treatment of acute submandibular sialadenitis? Hydration, sialogogues (lemon drops), warm compresses, massage, antibiotics and drainage if an abscess forms.

40. What is the boundary of the submandibular triangle? Anterior and posterior bellies of digastric and the lower border of the mandible.

Hard (Q41–50)

41. Describe the course of the lingual nerve relative to Wharton's duct. It lies lateral to the duct, hooks beneath it and then runs medial to it (the double crossing).

42. What is the risk of removing a stone through the floor of the mouth posteriorly? Lingual nerve damage, because the nerve lies close to the posterior duct.

43. What is lithotripsy for salivary stones? Extracorporeal or intraductal shock-wave fragmentation of stones, preserving the gland.

44. What is the investigation of choice for a submandibular mass suspected to be malignant? Ultrasound-guided FNAC or core biopsy plus MRI or CT for staging.

45. Why is a submandibular tumour usually removed with the whole gland? The gland is small and the risk of malignancy is high, so the gland is the unit of excision.

46. What is the management of a malignant submandibular tumour? Wide excision of the gland and the submandibular triangle contents with neck dissection and post-operative radiotherapy as needed.

47. What is the significance of the lingual nerve in adenoid cystic carcinoma? The tumour tracks along it (perineural spread), so it may need resection with frozen section of margins.

48. What is sialadenosis? Non-inflammatory, painless bilateral enlargement of salivary glands, seen in diabetes, alcoholism, bulimia and malnutrition.

49. What is xerostomia and its causes? Dry mouth from Sjögren's syndrome, radiotherapy, anticholinergic drugs, dehydration and anxiety.

50. What is the importance of xerostomia for dentists? It causes rampant dental caries, candidiasis, mucositis and denture problems; patients need fluoride and saliva substitutes.

Chapter 7: Examination of the Oral Cavity

Examine the mouth in a fixed order every time, so that no subsite is missed; most examiners fail students for forgetting the floor of mouth and the retromolar trigone.

Part A: The Approach

Preparation: good light (head mirror or torch), two tongue depressors, gloves, gauze. Ask the patient to remove dentures.

Systematic order (outside to inside)

1. Lips: colour, angles (angular cheilitis), ulcers, mucocele.
2. Mouth opening: inter-incisor distance (normal 35–50 mm, or three fingers); trismus.
3. Labial and buccal mucosa: retract with depressors; look for leukoplakia, erythroplakia, submucous fibrosis bands, ulcers, parotid duct opening.
4. Gingivae and teeth: sharp or carious teeth, periodontal disease, missing teeth, dentures.
5. Hard and soft palate: ulcers, swellings, perforation, cleft, torus palatinus; movement of soft palate on saying "aah".
6. Tongue: dorsum, lateral borders (pull out with gauze), ventral surface; movements and deviation on protrusion; fasciculation and wasting.

7. Floor of mouth: ask patient to touch the palate with the tongue tip; Wharton's ducts, ranula, swellings.
8. Retromolar trigone, tonsils, faucial pillars and posterior pharyngeal wall.

Palpation (gloved finger): palpate any lesion for induration, tenderness, bleeding; bimanual palpation of the floor of mouth, cheek and submandibular gland.

Neck: always palpate cervical lymph nodes.

Model presentation: "A 50-year-old man who chews naswar, with a white patch on the left buccal mucosa for 1 year. There is a 3 × 2 cm white, non-scrapable, slightly raised plaque at the site where he keeps naswar; no ulceration or induration; mouth opening 40 mm; neck nodes not palpable. My diagnosis is homogeneous leukoplakia of the left buccal mucosa."

Part B: 50 Viva Questions

Easy (Q1–20)

1. What are the subsites of the oral cavity? Lips, buccal mucosa, upper and lower alveolus and gingivae, retromolar trigone, floor of mouth, hard palate and anterior two-thirds of the tongue.

2. Where does the oral cavity end posteriorly? At the junction of the hard and soft palate above, the circumvallate papillae below, and the anterior faucial pillars laterally.

3. What is leukoplakia? A white patch or plaque that cannot be characterised clinically or pathologically as any other disease (WHO definition).

4. What is erythroplakia? A red velvety patch that cannot be characterised as any other condition; highest malignant potential.

5. What is oral submucous fibrosis? A chronic progressive fibrosis of the oral mucosa caused by areca nut, producing blanching, stiffness and trismus.

6. What is trismus? Restricted mouth opening due to spasm or fibrosis of the muscles of mastication.

7. What is the normal mouth opening? 35 to 50 mm (about three fingerbreadths).

8. What is a mucocele? A mucus retention or extravasation cyst of a minor salivary gland, usually on the lower lip.

9. What is angular cheilitis? Fissuring at the corners of the mouth due to candida, vitamin B deficiency, iron deficiency or ill-fitting dentures.

10. Which cranial nerve supplies the muscles of the tongue? Hypoglossal nerve (XII), except palatoglossus (vagus).

11. Which way does the tongue deviate in hypoglossal palsy? Towards the side of the lesion.

12. Name a common white lesion that can be scraped off. Pseudomembranous candidiasis (thrush).

13. Name common causes of oral ulcers. Aphthous, traumatic, herpetic, tuberculous, malignant and drug-induced.

14. What is the commonest oral cancer? Squamous cell carcinoma.

15. What is the commonest site of tongue cancer? The lateral border of the middle third.

16. What is torus palatinus? A benign bony outgrowth in the midline of the hard palate.

17. What is torus mandibularis? A bony outgrowth on the lingual surface of the mandible near the premolars.

18. What is a ranula? A mucus extravasation cyst of the sublingual gland in the floor of the mouth.

19. What is tongue-tie? Ankyloglossia: a short lingual frenulum restricting tongue movement.

20. What is geographic tongue? Benign migratory glossitis: map-like red patches with white borders that change pattern.

Moderate (Q21–40)

21. Name the types of leukoplakia. Homogeneous and non-homogeneous (speckled, nodular, verrucous).

22. Which type of leukoplakia carries a higher risk? Non-homogeneous (speckled) leukoplakia.

23. What factors increase the risk of malignancy in leukoplakia? Floor of mouth or ventral tongue site, speckled or verrucous type, size over 2 cm, female sex, dysplasia on biopsy and non-smoker.

24. How is leukoplakia managed? Stop tobacco, remove irritants, biopsy; excision or laser ablation for dysplasia; lifelong follow-up.

25. What are the clinical stages of oral submucous fibrosis? Early blanching and burning; then palpable vertical fibrous bands; then trismus with rigid mucosa and depapillated tongue.

26. What is the management of oral submucous fibrosis? Stop areca nut, intralesional steroids and hyaluronidase, mouth-opening exercises, surgical release of bands in advanced cases; regular cancer surveillance.

27. What is naswar? A smokeless tobacco product (tobacco, slaked lime and ash) kept in the buccal or labial sulcus; strongly linked to oral cancer in Pakistan.

28. What is verrucous carcinoma? A slow-growing, well-differentiated, exophytic variant of SCC with a warty surface and rare metastasis.

29. What is the lymphatic drainage of the tongue? Tip to submental, lateral parts to submandibular and deep cervical, posterior third to deep cervical nodes bilaterally.

30. Why can tongue cancer spread to both sides of the neck? Lymphatics near the midline and the posterior third cross over.

31. What is the significance of trismus in oral cancer? It suggests involvement of the pterygoid muscles or infratemporal fossa (advanced disease).

32. What is the significance of ear pain in tongue cancer? Referred otalgia via the lingual and auriculotemporal nerves (both branches of mandibular nerve), suggesting advanced or deep infiltration.

33. What is the treatment of a mucocele? Excision with the underlying minor salivary gland.

34. Name causes of macroglossia. Hypothyroidism, acromegaly, amyloidosis, lymphangioma, haemangioma and Down syndrome.

35. What is median rhomboid glossitis? A smooth, red, diamond-shaped area in the midline of the dorsum anterior to the circumvallate papillae, associated with candida.

36. What is lichen planus in the mouth? An immune-mediated condition with lacy white striae (Wickham's striae) on the buccal mucosa; erosive form has slight malignant potential.

37. What is a fibroepithelial polyp? A common benign pedunculated swelling of the buccal mucosa along the occlusal line due to chronic trauma.

38. What is a pyogenic granuloma? A rapidly growing, red, bleeding granulation tissue lesion, common on the gingiva in pregnancy (pregnancy epulis).

39. What is an epulis? A localised swelling on the gingiva; types include fibrous, pyogenic, giant cell and congenital.

40. What is the role of OPG in oral cancer? It shows mandibular erosion and dental status before surgery.

Hard (Q41–50)

41. What is a marginal mandibulectomy? Removal of the alveolar margin of the mandible preserving the lower border, for tumours abutting but not deeply invading bone.

42. What is a segmental mandibulectomy? Removal of a full-thickness segment of mandible for tumours with gross bone invasion, followed by reconstruction (e.g. fibula free flap).

43. What is a commando operation? Composite resection of tongue or floor of mouth, mandible and neck nodes in continuity.

44. Why is the floor of mouth a high-risk site? Carcinogens pool there in saliva, and it has rich lymphatics.

45. What is the ideal margin in oral cancer surgery? A clinical margin of 1 cm, aiming for a histological margin over 5 mm.

46. What is the role of sentinel node biopsy in oral cancer? It identifies occult nodal disease in early (T1–T2, N0) tumours, avoiding unnecessary neck dissection.

47. What is the most common reconstruction for a hemiglossectomy defect? Radial forearm free flap.

48. What is osteoradionecrosis? Death of irradiated bone (usually mandible) exposed through mucosa, often after dental extraction.

49. How is osteoradionecrosis prevented? Complete dental assessment and extractions before radiotherapy, fluoride care, and avoiding extractions after radiotherapy where possible.

50. What is the role of HPV in oral and oropharyngeal cancer? HPV-16 is a major cause of oropharyngeal (tonsil, base of tongue) cancer with a better prognosis; it plays a small role in oral cavity cancer.

Chapter 8: Examination of the Cranial Nerves

For a BDS student, the facial, trigeminal, hypoglossal and glossopharyngeal-vagus nerves matter most; the examiner will nearly always ask you to demonstrate the facial nerve and tell upper from lower motor neuron palsy.

Part A: The Approach

Position: patient seated facing you at eye level. Explain each test and demonstrate if needed.

Nerve	Quick test at the bedside
I Olfactory	Identify familiar smells (soap, coffee) with each nostril separately

Nerve	Quick test at the bedside
II Optic	Visual acuity (Snellen), fields by confrontation, pupillary light reflex, fundoscopy
III, IV, VI	Eye movements in an H pattern; ptosis; pupil size; diplopia
V Trigeminal	Sensation in V1, V2, V3; clench teeth (masseter, temporalis); open jaw against resistance (pterygoids); corneal reflex; jaw jerk
VII Facial	Raise eyebrows, close eyes tightly, puff cheeks, show teeth, whistle; taste of anterior two-thirds of tongue
VIII Vestibulocochlear	Whisper test, Rinne and Weber tests
IX, X	Say "aah" (uvula moves up centrally); gag reflex; voice; swallowing
XI Accessory	Shrug shoulders against resistance (trapezius); turn head against resistance (sternocleidomastoid)
XII Hypoglossal	Inspect tongue at rest for wasting and fasciculation; protrude (deviation); push against cheek

Facial nerve in detail: look for asymmetry, loss of nasolabial fold, drooping angle of mouth. Test the forehead: if the forehead is spared, the lesion is upper motor neuron.

Trigeminal nerve in detail: test light touch and pin prick in all three divisions comparing both sides; motor by palpating masseter and temporalis while clenching; jaw deviates to the weak side on opening.

Model presentation: "A 30-year-old man with sudden weakness of the right side of the face for 5 days after exposure to cold wind. He cannot raise the right eyebrow or close the right eye fully, Bell's phenomenon is visible, the right nasolabial fold is flattened and the angle of mouth droops. The forehead is involved. Other cranial nerves are normal. My diagnosis is right lower motor neuron facial palsy, likely Bell's palsy."

Part B: 50 Viva Questions

Easy (Q1–20)

1. How many cranial nerves are there? Twelve pairs.

2. Which cranial nerves are purely sensory? I, II and VIII.

3. Which are purely motor? III, IV, VI, XI and XII.

4. Which are mixed? V, VII, IX and X.

5. Which nerve supplies the muscles of mastication? Mandibular division of the trigeminal nerve (V3).

6. Name the muscles of mastication. Masseter, temporalis, medial and lateral pterygoids.

7. Which nerve supplies the muscles of facial expression? Facial nerve (VII).

8. What is the corneal reflex? Touching the cornea with cotton causes blinking of both eyes: afferent V1, efferent VII.

9. What is Bell's palsy? An idiopathic acute lower motor neuron facial nerve palsy.

10. What is Bell's phenomenon? Upward rolling of the eyeball on attempted eye closure, visible when the eyelid cannot close.

11. How do you differentiate UMN from LMN facial palsy? In UMN palsy the forehead is spared (bilateral cortical supply); in LMN palsy the whole half of the face is weak.

12. Which nerve carries taste from the anterior two-thirds of the tongue? Chorda tympani (facial nerve), travelling with the lingual nerve.

13. Which nerve carries general sensation from the anterior two-thirds of the tongue? Lingual nerve (V3).

14. Which nerve carries taste and sensation from the posterior third of the tongue? Glossopharyngeal nerve (IX).

15. What is the gag reflex? Touching the posterior pharyngeal wall causes gagging: afferent IX, efferent X.

16. Which way does the uvula deviate in vagus palsy? Towards the normal side (away from the lesion).

17. Which way does the jaw deviate in V3 motor palsy? Towards the paralysed side on opening.

18. Which nerve is tested by shrugging the shoulders? Spinal accessory nerve (XI).

19. Which nerve is anaesthetised in an inferior alveolar nerve block? Inferior alveolar nerve (branch of V3), often with the lingual nerve.

20. What is trigeminal neuralgia? Paroxysmal, severe, electric-shock-like facial pain in one or more divisions of V, triggered by touch, chewing or brushing.

Moderate (Q21–40)

21. What is the drug of choice for trigeminal neuralgia? Carbamazepine.

22. What are the surgical options for trigeminal neuralgia? Microvascular decompression, radiofrequency rhizotomy, glycerol injection, balloon compression and gamma-knife radiosurgery.

23. What is the commonest cause of trigeminal neuralgia? Compression of the trigeminal root by a vascular loop (superior cerebellar artery).

24. Name causes of LMN facial palsy. Bell's palsy, parotid tumour or surgery, Ramsay Hunt syndrome, trauma (temporal bone fracture), otitis media and cholesteatoma.

25. What is Ramsay Hunt syndrome? Herpes zoster of the geniculate ganglion: facial palsy with vesicles in the ear and on the palate, and ear pain.

26. What is the treatment of Bell's palsy? Oral prednisolone within 72 hours; eye protection (lubricants, taping, patch at night); antivirals are optional.

27. Why is eye care important in facial palsy? The eye cannot close, risking exposure keratitis and corneal ulceration.

28. What is the prognosis of Bell's palsy? About 70 to 85% recover completely, mostly within 3 months.

29. How can an inferior alveolar block cause temporary facial palsy? The needle goes too far posteriorly into the parotid gland and anaesthetises the facial nerve.

30. What is the management of that temporary facial palsy? Reassurance, protect the eye with a patch until the anaesthetic wears off (a few hours).

31. Name branches of the mandibular nerve. Buccal, auriculotemporal, lingual, inferior alveolar, nerve to mylohyoid and motor branches to muscles of mastication.

32. Which divisions of the trigeminal nerve pass through which foramina? V1 superior orbital fissure, V2 foramen rotundum, V3 foramen ovale.

33. What causes numbness of the lower lip (numb chin syndrome)? Inferior alveolar nerve involvement by mandibular fracture, third molar surgery, malignancy or metastasis.

34. What is the jaw jerk and its significance? Tapping the chin with mouth slightly open causes a jerk; an exaggerated jerk indicates an upper motor neuron lesion above the pons.

35. What is Horner's syndrome? Ptosis, miosis, anhidrosis and enophthalmos from sympathetic chain interruption (not a cranial nerve, but often asked).

36. Which cranial nerve is damaged in a cavernous sinus thrombosis from a dental infection? III, IV, VI and V1, V2, with VI the most commonly affected.

37. What is the danger area of the face? The upper lip and nose area; infection spreads via facial and ophthalmic veins to the cavernous sinus.

38. What does recurrent laryngeal nerve palsy cause? Hoarseness of voice (unilateral) or stridor (bilateral).

39. What is hypoglossal nerve palsy's tongue appearance? Wasting and fasciculation on the affected side, deviation to that side on protrusion.

40. Name causes of hypoglossal nerve palsy relevant to surgery. Submandibular gland excision, carotid endarterectomy, neck dissection and tumours at the skull base.

Hard (Q41–50)

41. Describe the intracranial course of the facial nerve briefly. From the pons it enters the internal acoustic meatus, runs through the facial canal (labyrinthine, tympanic, mastoid segments) and exits through the stylomastoid foramen.

42. Name the branches of the facial nerve within the facial canal. Greater petrosal nerve, nerve to stapedius and chorda tympani.

43. How do you localise a facial nerve lesion? Loss of lacrimation (above geniculate ganglion), hyperacusis (above nerve to stapedius), loss of taste (above chorda tympani), only facial muscles weak (at or below stylomastoid foramen).

44. What is crocodile tears syndrome? Lacrimation while eating, due to aberrant regeneration of salivary fibres to the lacrimal gland after facial palsy.

45. What is the House-Brackmann grading used for? Grading facial nerve function from I (normal) to VI (total paralysis).

46. What is Frey's syndrome related to which nerve? The auriculotemporal nerve; aberrant parasympathetic fibres re-innervate sweat glands after parotid surgery.

47. What is the Melkersson-Rosenthal syndrome? Recurrent facial palsy, orofacial swelling and fissured tongue.

48. What is Möbius syndrome? Congenital bilateral facial (VII) and abducens (VI) palsy.

49. What is the nerve supply of the palate? Sensory: greater and lesser palatine nerves and nasopalatine nerve (V2). Motor: vagus via pharyngeal plexus, except tensor veli palatini (V3).

50. What is jugular foramen (Vernet's) syndrome? Palsy of IX, X and XI due to a lesion at the jugular foramen (glomus tumour, metastasis), causing dysphagia, hoarseness and weak trapezius and sternocleidomastoid.

Chapter 9: Bone Swelling and the Jaw

A bony swelling cannot be moved separately from the bone; the key bedside questions are whether the cortex is expanded or destroyed, whether there is eggshell crackling, and whether teeth or the inferior alveolar nerve are involved.

Part A: The Approach

Short history: duration, pain, rate of growth, trauma, fever and discharge (osteomyelitis), loosening of teeth, numbness of lower lip, difficulty in chewing, previous radiotherapy or bisphosphonate use.

Inspection

- Facial asymmetry, site (body, angle, ramus of mandible; maxilla), size, shape, skin over it, sinuses.
- Intraorally: expansion of buccal or lingual cortex, displaced or missing teeth, mucosal ulceration, discharge.

Palpation

- Temperature, tenderness, consistency (bony hard).
- **Swelling cannot be moved separately from the bone.**
- Surface: smooth (benign) or irregular (malignant).
- **Eggshell crackling** on pressure: thinned expanded cortex (ameloblastoma, cysts).
- Bimanual palpation (one finger intraoral, one extraoral).
- Mobility of teeth.
- **Sensation of the lower lip and chin** (mental nerve): numbness suggests malignancy or inferior alveolar nerve involvement.
- Regional lymph nodes.

Complete the examination: temporomandibular joint movements, mouth opening, occlusion, and examination of other bones.

Model presentation: "A 30-year-old man with a slowly growing painless swelling of the left lower jaw for 3 years. There is a 5 × 4 cm bony hard swelling at the angle and body of the mandible with buccal and lingual expansion and eggshell crackling, teeth displaced but not mobile, lip sensation intact, no lymphadenopathy. My diagnosis is ameloblastoma of the left mandible; differentials are odontogenic keratocyst, dentigerous cyst and giant cell lesion."

Differential diagnosis of a jaw swelling: odontogenic cysts (radicular, dentigerous, keratocyst), ameloblastoma, central giant cell granuloma, fibrous dysplasia, osteomyelitis, osteosarcoma, squamous carcinoma invading bone, Burkitt lymphoma, metastasis.

Part B: 50 Viva Questions

Easy (Q1–20)

1. How do you know a swelling arises from bone? It is bony hard and cannot be moved separately from the bone.

2. What is eggshell crackling? A crackling feel when pressing a thinned, expanded cortical plate over a cyst or tumour.

3. What is the commonest cyst of the jaws? Radicular (periapical) cyst.

4. What is a radicular cyst associated with? The apex of a non-vital tooth.

5. What is a dentigerous cyst? A cyst around the crown of an unerupted tooth, attached at the cemento-enamel junction.

6. Which tooth is commonly associated with a dentigerous cyst? Mandibular third molar.

7. What is an ameloblastoma? A benign but locally aggressive odontogenic epithelial tumour.

8. Where does ameloblastoma commonly occur? The angle and ramus of the mandible.

9. What is the classical X-ray appearance of ameloblastoma? Multilocular radiolucency with a soap-bubble or honeycomb appearance.

10. What is the first X-ray for a jaw swelling? OPG (orthopantomogram).

11. What is osteomyelitis? Infection of bone and bone marrow.

12. What is a sequestrum? A piece of dead bone separated from living bone.

13. What is an involucrum? New subperiosteal bone formed around a sequestrum.

14. What is the commonest organism in osteomyelitis? Staphylococcus aureus.

15. Why is osteomyelitis commoner in the mandible than the maxilla? The mandible has a thick cortex and a poorer blood supply (mainly the inferior alveolar artery).

16. What is fibrous dysplasia? Replacement of normal bone by fibrous tissue and immature woven bone, causing painless expansion.

17. What is the X-ray appearance of fibrous dysplasia? Ground-glass appearance with ill-defined margins.

18. What is the commonest malignant primary bone tumour of the jaw? Osteosarcoma.

19. What is the X-ray sign of osteosarcoma? Sunray (sunburst) appearance and Codman's triangle.

20. What is Burkitt lymphoma? A highly aggressive B-cell lymphoma, the endemic type presenting as a rapidly growing jaw swelling in African children, linked to EBV.

Moderate (Q21–40)

21. What are the histological types of ameloblastoma? Follicular and plexiform (commonest), acanthomatous, granular, basal cell and desmoplastic.

22. What is the treatment of ameloblastoma? Resection with 1 to 1.5 cm bony margin (marginal or segmental mandibulectomy) and reconstruction; enucleation alone recurs.

23. What is the unicystic ameloblastoma? A variant in younger patients, often around an unerupted tooth, with a better prognosis and sometimes treated conservatively.

24. What is an odontogenic keratocyst? A cyst with a thin, parakeratinised lining, high recurrence rate and growth along the medullary cavity, now also called keratocystic odontogenic tumour in older classifications.

25. Why does odontogenic keratocyst recur? Thin friable lining, satellite (daughter) cysts and difficult complete removal.

26. What is Gorlin-Goltz syndrome? Naevoid basal cell carcinoma syndrome: multiple keratocysts, multiple basal cell carcinomas, bifid ribs and calcified falx cerebri.

27. How are jaw cysts treated? Enucleation (removing the whole lining) or marsupialisation (decompression) for large cysts.

28. What is marsupialisation? Opening the cyst and suturing its lining to the oral mucosa to allow decompression and shrinkage.

29. What are the causes of osteomyelitis of the jaw? Dental infection, fractures, post-extraction infection, diabetes, immunosuppression and radiotherapy.

30. How is chronic osteomyelitis of the mandible treated? Long-term antibiotics guided by culture, sequestrectomy, saucerisation and removal of infected teeth.

31. What is Garre's osteomyelitis? Chronic sclerosing osteomyelitis with periosteal new bone formation (onion-skin appearance), usually in young patients from a carious molar.

32. What is osteoradionecrosis? Non-healing exposed dead bone after radiotherapy due to hypoxic, hypocellular, hypovascular tissue.

33. What is medication-related osteonecrosis of the jaw (MRONJ)? Exposed necrotic bone in patients on bisphosphonates or denosumab, often after dental extraction.

34. What is central giant cell granuloma? A benign lesion of the jaws with multinucleated giant cells, usually anterior mandible in young patients.

35. Which systemic condition must be excluded in a giant cell lesion of the jaw? Hyperparathyroidism (brown tumour); check serum calcium and PTH.

36. What is cherubism? Familial bilateral painless multilocular expansion of the jaws in children, giving a cherubic face.

37. What is the significance of lower lip numbness with a jaw swelling? Inferior alveolar nerve involvement, strongly suggesting malignancy (Vincent's sign).

38. What is the role of CT in jaw lesions? It shows cortical expansion or erosion, extent, soft tissue involvement and helps plan resection.

39. What is the classical site of fracture of the mandible? The condylar neck, followed by the angle and body.

40. What are the signs of a mandibular fracture? Pain, swelling, deranged occlusion, step deformity, sublingual haematoma, abnormal mobility and lower lip numbness.

Hard (Q41–50)

41. Why is a sublingual haematoma pathognomonic of a mandibular fracture? Bleeding from the fracture spreads beneath the floor of the mouth mucosa; it is rarely seen otherwise.

42. What are favourable and unfavourable fractures of the mandible? Determined by fracture line direction relative to muscle pull; favourable lines resist displacement, unfavourable lines are pulled apart by masseter and medial pterygoid.

43. What is the principle of treatment of mandibular fractures? Restore occlusion, then reduce and fix with open reduction and internal fixation (miniplates following Champy's lines) or intermaxillary fixation.

44. What is the McCune-Albright syndrome? Polyostotic fibrous dysplasia, café-au-lait spots with irregular "coast of Maine" borders, and endocrine hyperfunction (precocious puberty).

45. What is the treatment principle of fibrous dysplasia? Observation until growth stops, then cosmetic recontouring; radiotherapy is contraindicated because of sarcomatous change.

46. What is the prognosis-defining feature in jaw osteosarcoma? Achieving negative surgical margins; jaw osteosarcoma metastasises less often than long-bone osteosarcoma.

47. What is Paget's disease of the jaw? Disordered bone remodelling causing enlargement (often maxilla), cotton-wool appearance on X-ray, raised alkaline phosphatase and hypercementosis of teeth.

48. What is a Stafne bone cavity? A developmental depression on the lingual aspect of the posterior mandible containing salivary tissue, seen as a well-defined radiolucency below the inferior alveolar canal; no treatment needed.

49. What is the free flap of choice for mandibular reconstruction? Free fibula osteocutaneous flap.

50. What is hyperbaric oxygen used for in jaw disease? Adjunct treatment of osteoradionecrosis and prevention before extractions in irradiated jaws, improving tissue oxygenation and angiogenesis.

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JazakAllah. Best wishes for your examinations.