

# OSCE

*for* Clinical

# DENTAL SCIENCES



*Editors*

**PVK Chakravarthy**

**Ajay Telang**

**Lahari A Telang**

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# **OSCE for Clinical Dental Sciences**

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**Dedicated to**  
*Our parents and teachers*

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# Foreword

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It is indeed an honor and privilege for me to pen a few words in this commendable publication titled *OSCE for Clinical Dental Sciences*. I would like to congratulate the authors for a job well done.

Educators have long advocated a new approach to higher education, which is more learner-centered and encourages the development of learning characters such as critical thinking, self-directed learning and problem solving. Globally, more dental institutions of higher learning are moving from traditional-based teaching to student-centered or learner-centered learning. Specific learning methods and instructional designs with related assessment methods are in place, in line with the competence that must be demonstrated in the graduating dentist.

As more dental curricula become revised to show integration in design, so assessment practices should change to reflect that nature. In practical or clinical assessments, traditional methods are replaced by performance-based assessments such as Objective Structured Clinical Examination (OSCE) and Objective Structured Practical Examination (OSPE). They provide means to test wide variety of knowledge and skills in a structured and standardized format. Use of clinical stations, with models and simulated patients, has enabled clinical skills to be assessed in a standardized manner.

This book will certainly help the students who are preparing to sit for OSCE exams. It will also be a guide for the faculty members who are introduced to OSCE system. The editors and contributors have drawn on a wealth of experience and expertise to make this book most resourceful. I once again congratulate them for producing this excellent book.

**Prof J Sabarinathan**

Chief Executive Officer

Penang International Dental College

Malaysia



# Preface

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Objective Structured Clinical Examination or OSCE, as it is commonly known, was first introduced by Harden and Gleeson (1979) in the field of medical education. Over the years, OSCEs have become a prototype for assessing competency as performance-based assessment for most health professional courses. Despite three decades of its existence and evolution, OSCE as a method of assessment, is yet to be implemented in many dental schools. The globalization of healthcare delivery and international recognition of dental professionals will require dental schools with the traditional teaching and assessment methods to move towards a student-centered learning and outcome-based curriculum. This requires the implementation of OSCEs as a performance-based assessment, in order to assess the integrated knowledge and soft skills. Our observation and feedback from our students as well as interaction with others in the profession highlighted that very few books help the student in preparing for such an assessment. This has been our inspiration behind attempting this book.

The aim of our book is to help dental students prepare for OSCEs at various levels by providing them with a wide variety of OSCEs with answers from content experts from different regions of the world. This, we believe, is the strength of our book as it brings together expert opinion, different styles and experiences in OSCE design, which is not restricted to a particular region. Our book will help the student prepare for similar examinations and hopefully contribute towards integrated learning and assessment in clinical dentistry. However, it is not to replace a textbook or to teach clinical skills and it may not help without a sound knowledge of relevant topics. We have followed a subject-wise layout of the OSCEs in order to help the student categorize the learning topics for ease in referring standard textbooks which are primarily written subject-wise.

The book also aims at giving constructive ideas to academicians who look forward to innovate, redesign, and implement OSCEs as a system of assessment.

We hope that the book helps in student learning and also inspires innovation.

**PVK Chakravarthy**  
**Ajay Telang**  
**Lahari A Telang**  
**Jayashri Nerali**

# Acknowledgments

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As is the case with any book, the genesis and motivation to produce this book came out of our teaching and mentoring roles. We have learned much from our students and we hope this book provides some useful information to future dental students. We wish to acknowledge all our patients, who have silently played their role in modifying our lives as learners and teachers.

We are most grateful to all our contributors, who believed in us and dedicated their time from their busy professional lives to make a solid contribution. We acknowledge Mr Ooi Woei Sheng, student of Penang International Dental College, for his time and hard work put in making the illustrations.

We thank all at Penang International Dental College and the editors at M/s Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India, for supporting us in publishing our book. We also thank our families, who were most patient with us over the long timeline to produce this book.

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# Abbreviations

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- ABC: Aneurysmal bone cyst
- AIDS: Acquired immune deficiency syndrome
- ALARA: As low as reasonably achievable
- ANB: A point Nasion B point
- ANUG: Acute necrotizing ulcerative gingivitis
- AOT: Adenomatoid odontogenic tumor
- APF: Acidulated phosphate fluoride
- BD: Twice daily
- BPE: Basic periodontal examination
- BSI: British Standards Institute
- CBCT: Cone beam computed tomography
- CDJ: Cemento-dentinal junction
- CGCG: Central giant cell granuloma
- CT: Computed tomography
- CVMI: Cervical vertebrae maturity indicator
- DMFT: Decayed missing filled teeth
- DNA: Deoxyribonucleic acid
- DPT: Dental panoramic tomogram
- EAL: Electronic apex locator
- EPT: Electric pulp test
- ESR: Erythrocyte sedimentation rate
- FDA: Food and Drug Administration
- FDI: World Dental Federation
- FPD: Fixed partial denture
- GIC: Glass ionomer cement
- H & E: Hematoxylin and eosin
- HBSS: Hanks balanced salt solution
- HIV: Human immunodeficiency virus
- HPV: Human papilloma virus
- HSV: Herpes simplex virus
- INR: International Normalized Ratio
- IOPA: Intraoral periapical
- IOTN: Index of orthodontic treatment need
- KCOT: Keratocystic odontogenic tumor
- MEC: Mucoepidermoid carcinoma
- MOH: Ministry of Health
- MPDS: Myofascial pain dysfunction syndrome
- MTA: Mineral trioxide aggregate
- NaOCl: Sodium hypochlorite
- NSAID: Non-steroidal anti-inflammatory drug
- OKC: Odontogenic keratocyst
- ORN: Osteoradionecrosis
- OPG: Orthopantomograph

- OSMF: Oral submucous fibrosis
- PCR: Polymerized chain reaction
- PAP stain: Papanicolaou stain
- PAS stain: Periodic Acid-Schiff stain
- PSP: Photostimulable phosphor
- RCT: Root canal treatment
- SABG: Secondary alveolar bone grafting
- SLOB: Same lingual opposite buccal
- SNA: Sella-nasion-A point
- SNB: Sella-nasion-B point
- TMD: Temporomandibular disease
- TMJ: Temporomandibular joint
- TNM: Tumor, Nodes, Metastasis
- WHO: World Health Organization

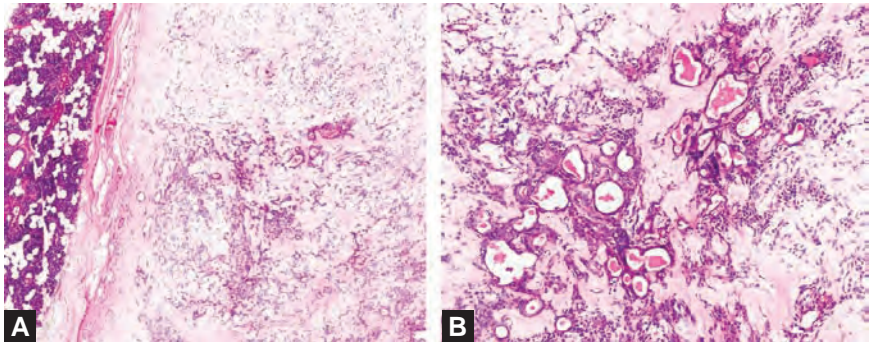
# 1

## Oral Pathology and Oral Medicine

### OSCE Station 1.1

A 58-year-old trucker came to the oral medicine clinic with complaint of a swelling on the left side of the face. He remembers that the swelling was as small as a peanut four years ago and has been slowly increasing in size since the last three years. He gives no history of discomfort, pain, discharge or fever associated with the swelling. The reason he seeks advice is because of facial asymmetry, appearance and he is worried about the fact that he is a chronic smoker for the last 30 years.

**Specimen:** Incisional biopsy



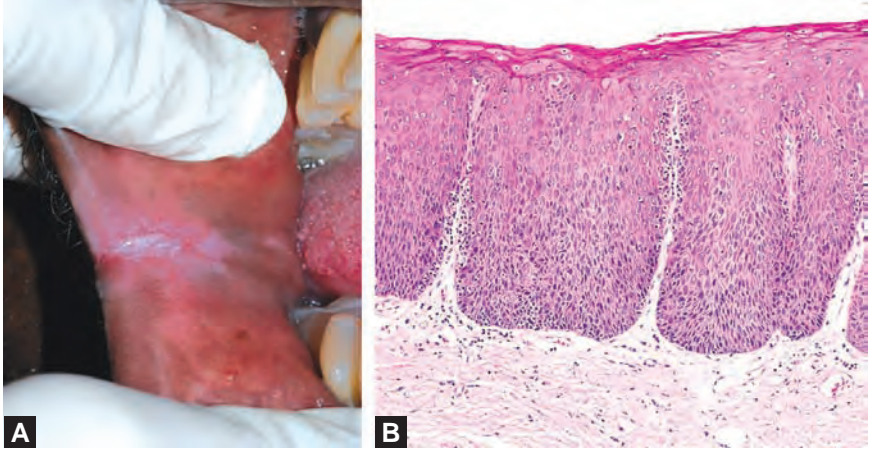
**Figs 1.1A and B**

### QUESTIONS

1. What is the histopathological diagnosis based on features noted in Figures 1.1A and B?
2. What is the histogenesis of the tumor?
3. What is the role of smoking in development of this lesion? What is the treatment and prognosis?

## OSCE Station 1.2

A 40-year-old Indian man came to a dental clinic with a complaint of mobile teeth. On clinical examination you also notice a nonscrapable white patch on the right commissure measuring about 2 cm × 1 cm. He gives a history of smoking approximately ten cigarettes a day for the last 10–15 years. He is keen on quitting his habit and also seeks advice.



Figs 1.2A and B

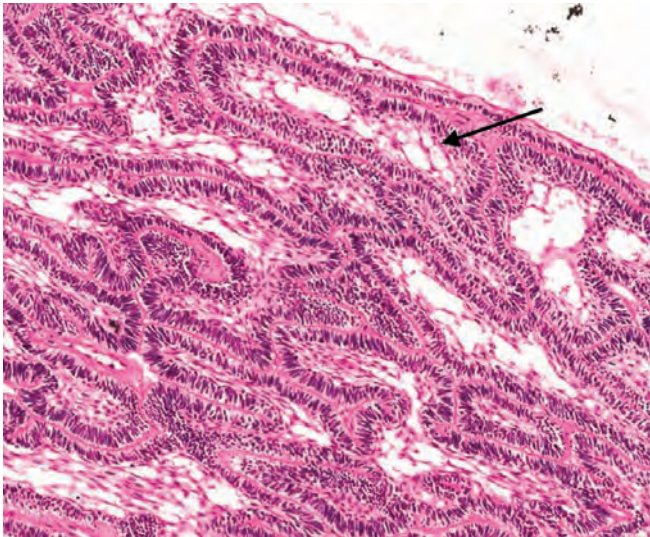
### QUESTIONS

1. Name three nonscrapable white lesions presenting in the oral cavity.
2. What type of biopsy is indicated for this case?
3. What is the clinical term used for diagnosis of this lesion? What is the histopathological diagnosis?
4. Mention three microscopic features noted on the given slide (Figure 1.2B).
5. Name one commercially available product that can help in quitting his habit.

## OSCE Station 1.3

A 45-year-old man came to the oral medicine clinic with a complaint of slow growing mass in the left mandible measuring 3 cm × 3 cm. He mentions that he was told by a dentist about an impacted lower left third molar 2 years ago, but he ignored removing it as it was never painful. Now he suspects it to be the cause of the trouble. Radiographs showed a large multilocular radiolucency associated with unerupted 38.

**Specimen:** Incisional biopsy



**Fig. 1.3**

### QUESTIONS

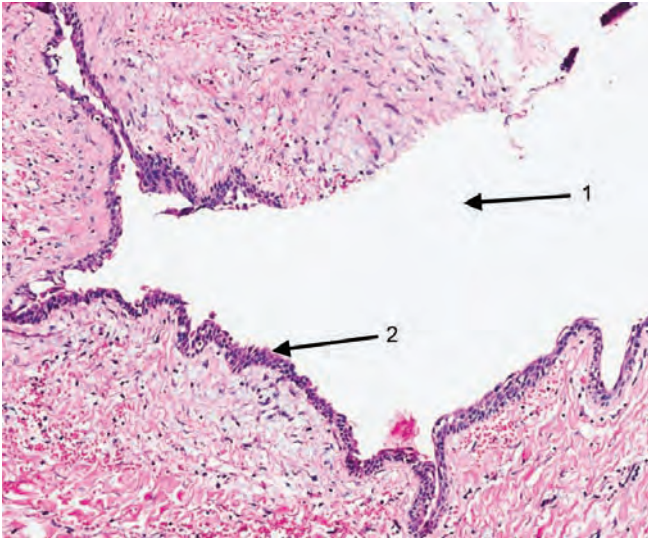
1. Name three lesions associated with impacted teeth. Why are impacted/ unerupted teeth recommended for removal?
2. Identify the pathology based on the photomicrograph and label the marked structure.
3. Name four histopathological types of this lesion.
4. Which is the most common odontogenic tumor?



## OSCE Station 1.4

George is a 19-year-old health science foundation student, very active sportsman with keen interest in badminton. He gets an opportunity to train with student teams from the European Union in Denmark. For visa formalities he is asked to get his routine health check up done where his dental check-up showed 3 cm × 2 cm radiolucency associated with his impacted 48.

The incisional biopsy report was dentigerous cyst and recommended surgical treatment. He is worried and fears he won't be able to make it for the training camp which is four weeks away.



**Fig. 1.4**

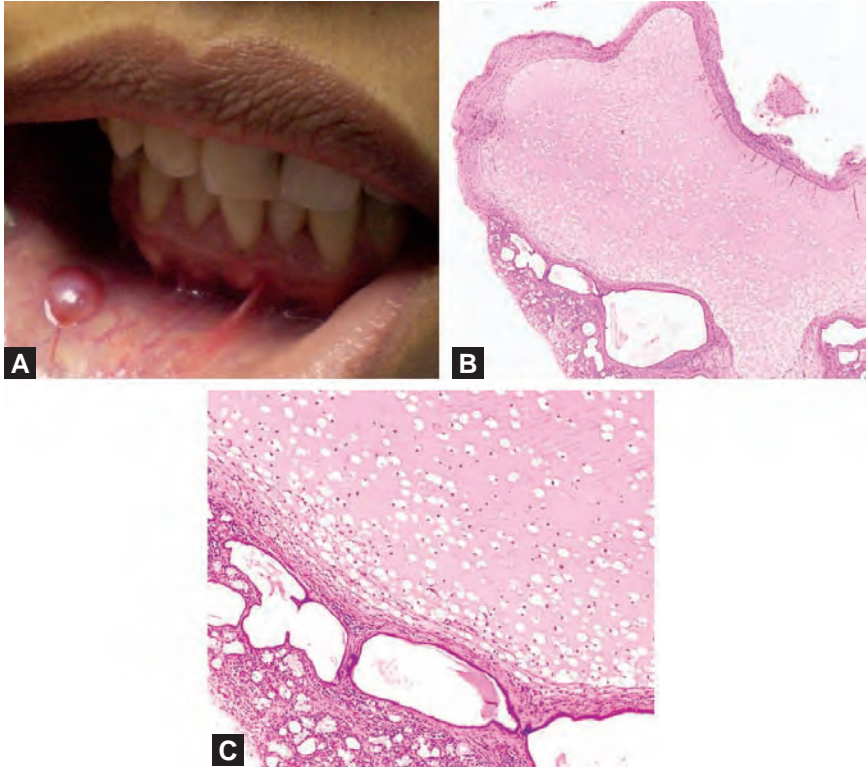
### QUESTIONS

1. What is a dentigerous cyst? What is the treatment?
2. Do you think George will be able to attend the training camp? Why?
3. Is the picture given consistent with the histopathological diagnosis? Justify mentioning two points. Label the marked structures.

## OSCE Station 1.5

A 17-year-old girl was brought to the oral medicine clinic with complaint of a swelling on the lower lip (1 cm × 1 cm) since last three weeks. She has a history of trauma to the region a month ago.

**Specimen:** Excisional biopsy from lower lip.



Figs 1.5A to C

### QUESTIONS

1. What is the rationale behind doing an excisional biopsy?
2. What is the histopathological diagnosis?
3. What is the pathogenesis of the lesion?
4. What is the treatment and prognosis?

# OSCE Station 1.6

Mr Lee (ID No: K012345) a 44-year-old businessman visited your dental clinic with chief complaint of a growth in the mouth since last five months. He is a known case of diabetes and hypertension under medication and smokes 3-5 cigarettes a day for the last 20 years.

An asymptomatic, non-tender, pedunculated soft tissue growth measuring 1 cm x 1 cm was seen on the right buccal mucosa of normal color, texture and soft in consistency. Excisional biopsy done and submitted for histopathology.

## QUESTIONS

1. Please fill out the biopsy request form for this case.
2. Which solution will you use to fix the specimen?

### BIOPSY REQUEST FORM

#### PATIENT DETAILS

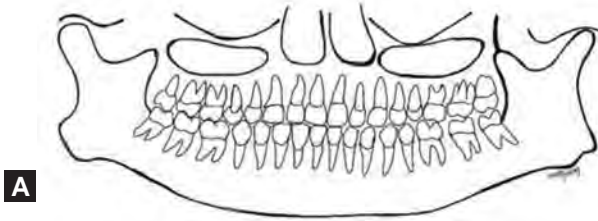
<b>Name:</b>	<b>Age:</b>	<b>Gender:</b>
<b>ID No:</b>	<b>Date of Biopsy:</b>	<b>For lab use only:</b>
<b>Referred by:</b>		

#### CLINICAL DESCRIPTION

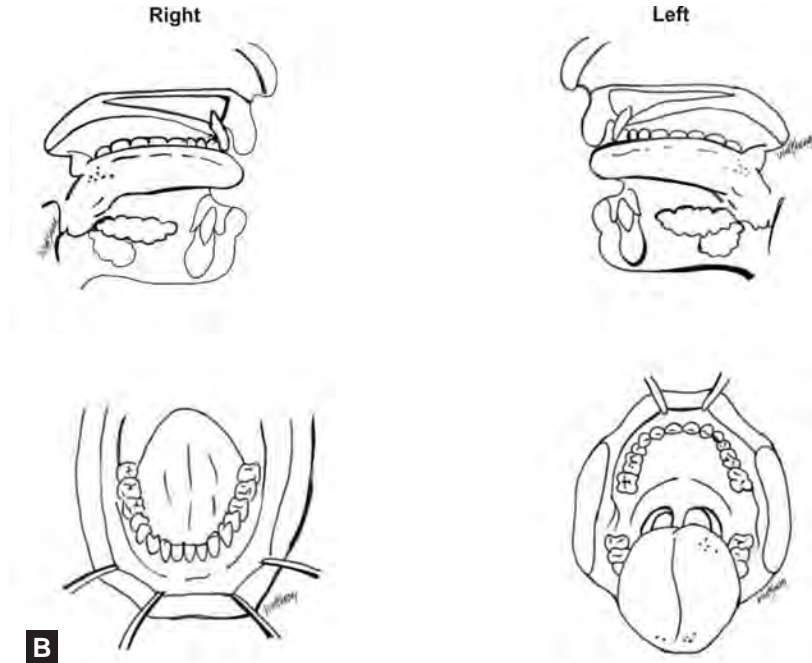
Soft tissue lesion	
Color	Morphology
• White	• Flat
• Red	• Raised
• Pink	• Ulcer
• Others _____	• Others _____
Tooth Number _____	Radiographic Changes _____

Hard tissue lesion	
• Lucent	• Opaque
• Mixed	• Radiograph submitted ? Yes/ No
Tooth Number _____	Radiographic Changes _____

**Radiographic site: (Mark)**



**Biopsy tissue site : (Encircle)**



**Figs 1.6A and B**

**TYPE OF SPECIMEN SUBMITTED**

**Biopsy**

- Incisional
- Excisional

**Cytology**

- PAP Stain (Dysplasia/Carcinoma)
- PAS Stain (Infectious)
- HPV

**Immunofluorescence**

- Perilesional
- Clinically normal

**RELEVANT HISTORY (Include habit history)**

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**DIFFERENTIAL DIAGNOSIS (Minimum two)**

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