



King Saud University
College of Dentistry
Dept. of Oral Medicine & Diagnostic Sciences
Division of Oral & Maxillofacial Radiology

Course Description

343 DDS- Clinical Oral and Maxillofacial Radiology II (2013-2014)

Course title: Clinical Oral & Maxillofacial Radiology II

Course No & Code: 343 DDS

Credit Hours: 2 h (1h lecture & 1h clinical)

Level: Third year undergraduate level

Prerequisite: 243 DDS Physics of Diagnostic Radiology & Oral and Maxillofacial Radiology

Academic Year: 2013-2014

Course Director (DUC): Ra'ed Al Sadhan- Associate Professor, OMF Radiology

Course Contributor (DUC): Dr. Hazem Marzouq- Assistant Professor, OMF Radiology

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1.0 General Description:

This is the second course of oral radiology which is a comprehensive course in radiographic interpretation and differential diagnosis of developmental and pathological lesions, and fractures of the jaws and associated structures. The course is covered by lectures in the first half of the year and practical and tutorials in the second half. The lectures in the first half will encourage the student to present and participate in case discussion sessions in the second half.

2.0 References:

1. Lectures

2. Required Textbooks:

Oral radiology- Principles and Interpretation. 6th Edition. *By White and Pharoah.*

Fundamentals of Sectional Anatomy, an Imaging Approach, 2005 (Only Chapter 2). *By Denise L. Lazo.*

3. Suggested reading:

Differential Diagnosis of Oral Lesions (*section on bony lesions*). *By Wood and Goaz.*

4. Recommended Web Links:

Oral Radiographic Differential Diagnosis (ORAD II):

<http://www.orad.org/index.html>

Marcilan Maxillofacial Radiology:

<http://www.marcilan.com>

European Academy of Dentomaxillofacial Radiology:

<http://www.eadmfr.eu/training/anatomy-cbct-images>

3.0 Content of Lectures:

Chapters and pages from Oral Radiology principles and Interpretation, 6th edition unless otherwise specified.

3.01 Sectional Anatomy- chapter 2 (Textbook: Fundamentals of Sectional Anatomy, an imaging approach, By Denise L. Lazo 2005):

- ♦ Sectional bony anatomy of axial, coronal and sagittal of the oral and maxillofacial structures

3.02 Inflammatory Lesions of the Jaws- chapter 20:

Review of: acute apical periodontitis, chronic apical periodontitis, periapical granulomas, and radicular cyst. Clinical features, radiographic appearance, and differential diagnosis of rarefying and sclerosing osteitis, osteomyelitis and osteoradionecrosis.

3.03 Odontogenic and Non-odontogenic Cysts- Ch 21

Definition, clinical features, radiographic features, and differential diagnosis of:

- ♦ Odontogenic cysts
 - Radicular cyst
 - Residual cyst
 - Dentigerous cyst
- ♦ Non-odontogenic cysts
 - Nasopalatine duct cyst (incisive canal cyst)
- ♦ Cyst-like lesions
 - Simple bone cyst (traumatic bone cyst)
 - Lingual salivary gland defect (Stafne cyst)-(p. 574)
 - Aneurysmal bone cyst- (p. 445)

3.04 Benign odontogenic Tumors- Ch 22

- Definition, clinical features, radiographic features (location, shape, periphery, internal structure, and effect on surrounding structures) and differential diagnosis of the following **benign odontogenic tumors**:

- ♦ Odontogenic epithelial tumors
 - Ameloblastoma
 - Adenomatoid odontogenic tumor (AOT)
 - Keratocystic odontogenic tumor (KOT)
- ♦ Mixed odontogenic tumors
 - Odontoma
- ♦ Odontogenic mesenchymal tumors
 - Odontogenic myxoma

3.05 Benign Non-odontogenic Tumors- Ch 22 (p. 410)

- Definition, clinical features, radiographic feature, and differential diagnosis of the following **hyperplastic** lesions (p. 367):

- ♦ Torus palatinus
- ♦ Torus mandibularis
- ♦ Enostoses
- ♦ Idiopathic osteosclerosis
- ♦ Exostoses

- Definition, clinical features, radiographic features, and differential diagnosis of the following **benign non-odontogenic tumors**:

- ♦ Tumors of neural origin:
 - Traumatic neuroma
- ♦ Mesodermal tumors:
 - Osteoma

3.06 Malignant Tumors- Ch 23

- Radiographic characteristics of **malignant tumors**, difference between benign and malignant tumors.

- Definition, clinical features, radiographic features, and differential diagnosis of the following **malignant tumors**:

- ♦ Carcinomas
 - Squamous cell carcinoma
 - Metastatic carcinoma
- ♦ Sarcomas

- Osteosarcoma

3.07 Trauma to the Facial Structures- Ch 29

- ◆ Introduction and general radiographic signs of fracture.
- ◆ Clinical and radiographic appearance of:
 - Mandibular fractures
 - Condylar fractures
 - Midface fractures
 - Zygomatic complex fractures

3.08 Bone Diseases with Jaw Manifestation- Ch 24

Definition, clinical features, radiographic features, and differential diagnosis of:

- ◆ Fibrous dysplasia
- ◆ Periapical cemental dysplasia
- ◆ Florid osseous dysplasia
- ◆ Cemento-ossifying fibroma
- ◆ Giant cell lesions:
 - Cherubism
 - Central giant cell granuloma
- ◆ Paget's disease
- ◆ Osteopetrosis

3.09 Soft Tissue Calcifications - Ch 28

General clinical and radiographic features of:

- ◆ Dystrophic calcifications:
 - Calcified lymph nodes
 - Dystrophic calcification in the tonsils
 - Calcified blood vessels (carotid arteriosclerosis)
- ◆ Idiopathic calcification:
 - Salivary sialolith
 - Phleboliths
- ◆ Metastatic calcification
- ◆ Heterotropic calcification:
 - Ossification of stylohyoid ligament
 - Myositis ossificans

3.10 Systemic Diseases Manifested in the Jaws - Ch 25

- ♦ Endocrine disorders
 - Hyperparathyroidism
 - Hypoparathyroidism
 - Hyperthyroidism
 - Hypothyroidism
 - Diabetes mellitus
- ♦ Metabolic bone diseases
 - Osteoporosis
 - Rickets and osteomalacia
 - Osteopetrosis
- ♦ Other systemic diseases
 - Sickle cell anemia
 - Thalassemia

3.11 Temporomandibular Joint (TMJ) Disorders and Imaging- Ch 26

- Radiographic *anatomy* of the TMJ

- Diagnostic *imaging* of the TMJ

- ♦ Hard tissue imaging
 - Panoramic and automatic double TMJ program
 - Conventional tomography
 - Computed tomography and cone beam computed tomography
- ♦ Soft tissue imaging
 - MRI

- *Abnormalities* of the TMJ

- ♦ Developmental abnormalities (bony)
 - Condylar hyperplasia and hypoplasia
 - Coronoid hyperplasia
 - Bifid condyle
- ♦ Soft tissue abnormalities
 - Disk displacement with reduction
 - Disk displacement without reduction
 - Disk perforation and deformities
- ♦ Remodeling

- ♦ Arthritic disorders
 - Osteoarthritis
 - Rheumatoid arthritis
- ♦ Trauma:
 - Dislocation
 - Fractures
 - Ankylosis

3.12 Salivary Gland Diseases and Imaging- ch 31

- ♦ Anatomy
- ♦ Diagnostic imaging
 - Plain film radiography
 - Intraoral radiography (periapical & occlusal)
 - Extraoral radiography (lateral oblique)
 - Indications, contraindications, limitations and appearance of:
 - Conventional sialography
 - CT
 - MRI
- ♦ Definition, clinical features, radiographic appearance and differential diagnosis of:
 - Sialolithiasis
 - Autoimmune sialadenitis (Sjogren's syndrome)
- ♦ Radiographic appearance of benign and malignant tumors of the salivary glands.

3.13 Maxillary Sinus Diseases and Imaging- Ch 27

- ♦ Review of normal development, anatomy, functions, and diagnostic imaging.
- ♦ Definition, clinical features, radiographic appearance and differential diagnosis of:
 - Inflammatory changes (thickened mucous membrane, sinusitis, empyema, polyps)
 - Antrolith
 - Mucous retention cyst
 - Mucocele
 - Odontogenic cyst
 - Benign neoplasms
 - Malignant neoplasms (squamous cell carcinoma)

5.0 Evaluation and Grades:

Activity		Marks	
First Semester			
1st CAT (written)		15	
2nd CAT (written)		15	
Second Semester			
Clinical Requirements	1 case of 20 CMS radiographic taking	5	17
	Evaluation of 20 CMS radiographic taking	2	
	Report writing for 2 assigned 20 CMS cases	4	
	1 panoramic radiographic taking	2	
	Evaluation of panoramic radiographic taking	2	
	Report writing for 1 assigned panoramic	2	
Case Presentations		13	
Final Clinical Exam		40	
Total		100	

DDS 343- Oral and Maxillofacial Radiology

Lectures Schedule

First Semester (2013-2014)

Week	Topic	Lecturer	Date
1	Introduction	Dr. Al-Sadhan	3 - 9 – 2013
2	Sectional Anatomy of the Oral & Maxillofacial Structures	Dr. Al-Sadhan	10 - 9 – 2013
3	Inflammation Lesions of the Jaws	Dr. Al-Sadhan	17 - 9 – 2013
4	Odontogenic and Non-odontogenic Cysts	Dr. Al-Sadhan	24 - 9 – 2013
5	Benign Odontogenic Tumors	Dr. Al-Sadhan	1- 10 – 2013
6	Benign Non-Odontogenic Tumors	Dr. Al-Sadhan	8 - 10 – 2013
HAJJ VACATION			
7	Malignant Tumors	Dr. Marzouq	22 - 10 – 2013
8	Soft Tissue Calcifications	Dr. Marzouq	29 - 10 – 2013
9	<i>First Continuous Assessment Exam</i>	Staff	19 - 11 – 2013
10	Trauma to the Facial Structures	Dr. Al-Sadhan	5- 11 – 2013
11	Bone Diseases with Jaw Manifestations	Dr. Marzouq	12- 11 – 2013
12	Systemic Diseases Manifested in the Jaws	Dr. Al-Sadhan	26 - 11– 2013
13	TMJ Imaging & Disorders	Dr. Al-Sadhan	3 - 12 – 2013
14	Salivary Glands Imaging & Disorders	Dr. Al-Sadhan	10 - 12 – 2013
15	Maxillary Sinus Disease & Imaging	Dr. Al-Sadhan	17 - 12 – 2013
	<i>Second Continuous Assessment Exam</i>	Staff	24- 12 – 2013

Practical Exercise Schedule Second Semester (2013-2014)

Week	Group A	Group B	Group C	Group D	Date
1	Panoramic Report Demonstration				
2	Introduction to Radiological Differential Diagnosis and Case Presentation: Detailed Description of a Jaw Lesion				
3	Clinic 1	Case Presentation 1	Assigned Case Reporting		
4	Assigned Case Reporting	Clinic 1	Case Presentation 1	Assigned Case Reporting	
5	Assigned Case Reporting		Clinic 1	Case Presentation 1	
6	Case Presentation 1	Assigned Case Reporting		Clinic 1	
7	Clinic 2	Case Presentation 2	Assigned Case Reporting		
8	Assigned Case Reporting	Clinic 2	Case Presentation 2	Assigned Case Reporting	
Mid-semester vacation					
9	Assigned Case Reporting		Clinic 2	Case Presentation 2	
10	Case Presentation 2	Assigned Case Reporting		Clinic 2	
11	Makeup Clinical Session		Assigned Case Reporting		
12	Assigned Case Reporting		Makeup Clinical Session		
13	Makeup Clinical Session		Assigned Case Reporting		
14	Assigned Case Reporting		Makeup Clinical Session		
15	Formative Assessment				
Final Exam					To be determined

Clinic: Requirements: one 20 CMS case and one panoramic radiograph taken on a patients

Assigned Case Reporting: Requirements: report writing of two assigned 20 CMS cases and one assigned panoramic case.

Case Presentation: Requirements: 2 case presentations.