Course title : Digital radiological diagnostics of head and neck tumors

Department : Department for General and Dental Radiology

Adress : Vinogradska cesta 29

Total ECTS points : 3

Course leader : Associate professor Dijana Zadravec, M.D., PhD

Course associates : 0

Teaching plan

	No. classes
Lecture	3
Seminar	6
Practical	6
Total	15

1 class = 45 minutes

Course description

The course Digital Radiological Diagnostics of Head and Neck Tumors enables the acquisition of knowledge about the physical principles of certain radiological diagnostic methods (X-ray, ultrasound, CT and MR), their application in patients with tumors of the head and neck, acquisition of CT / MR image analysis skills and the nature of the tumor process, the differential diagnosis and the degree of spread of the disease, as well as the possibilities and limitations of digital radiological imaging methods in tumor and non-tumor pathology of the head and neck.

Learning outcomes

1. List and describe the most common benign and most common malignant tumors of the head and neck

2. Understanding the possibilities and limitations of radiological diagnostic methods in cancer patients

3. Select an adequate radiological method in the diagnosis and follow-up of a particular patient with a head and neck tumor

4. Analyze the main characteristics of the tumor on radiological presentation and assess the staging of the disease

Course contet

Lecture

	Lecture topics	Number of classes/hours
1.	-Malignant tumors of the maxillofacial area and base of the skull - radiological approach	1

2.	-The value of MSCT and MR in the diagnosis of laryngeal and hypopharyngeal carcinoma	1
3.	-Digital imaging methods of odontogenic tumors	1
4.	-	-
5.	-	-
6.	-	-
7.	-	-
8.	-	-
9.	-	-
10.	-	-

1 sat = 45 minuta

Seminari

	Seminar topics	Number of classes/hours
1.	-Ultrasound diagnosis of the neck with special reference to lymph node metastases	1
2.	- Sensitivity and specificity of radiological methods (ultrasound, MSCT and MR) in the diagnosis of head and neck tumors	1
3.	-CBCT in the differentiation of odontogenic and non-odontogenic tumors	1
4.	- MR application in a cancer patient	1
5.	- Contrast agents in radiological diagnostics in oncology patients	1
6.	- Algorithms in diagnostics in oncology patients	1
7.	-	-
8.	-	-
9.	-	-
10.	-	-

1 sat = 45 minuta

Vježbe

	practicals topics	Number of classes/hours
1.	-Detection, analysis and differential diagnosis of oral tumors and sinonasal tumors on CT and MR imaging	2
2.	- Detection, analysis and differential diagnosis of benign and malignant odontogenic tumors on CT and MR imaging	2
3.	- Orthopantomography vs computed tomography in jaw tumors	2
4.	-	-
5.	-	-

6.	-	-
7.	-	-
8.	-	-
9.	-	-
10.	-	-

1 class = 45 minutes

Literature

1. Diagnostic Imaging: Head and Neck, H. Ric Harnsberger
   https://www.sciencedirect.com/book/9780323443012/diagnostic-imaging-head-and-neck
2. Head and Neck Cancer Imaging, Robert Hermans
   https://link.springer.com/book/10.1007%2F978-3-030-64735-3#editorsandaffiliations
3. Dental Radiology, Ivan Krolo i Dijana Zadravec,
   https://strucnaknjizara.com/en/proizvod/dental-radiology-ivan-krolo-i-dijana-zadravec/

CV (*curriculum vitae*) and bibliography of course leader

Dijana Zadravec, MD, PHD, is an Associate Professor of general and dental radiology (since 2018) and head of Department for General and Dental Radiology at the University of Zagreb, School of Dental medicine (since 2015). She was head of Department for Diagnostic and Interventional Radiology (2016-2021). She is head of Clinical unit for Neuroradiology and Neurointervention at the University Hospital Center Sisters of Mercy. She is also head of Referral center for radiologic prevention, diagnostics, therapy and rehabilitation of head and neck diseases of the Ministry of Health, Republic of Croatia, at the University Hospital Center Sisters of Mercy in Zagreb. Associate Professor Zadravec served as Deputy Director of University Hospital Center Sisters of Mercy (2016-2020).

She has worked in medical education for the last 14 years. She is head of PhD doctoral study at School of Dental Medicine, University of Zagreb (theme *Digital radiologic diagnostic of head and neck tumors*) and head of postgraduate specialist study (theme *Radiologic digital imaging methods of head and neck*). She also takes part in other undergraduate and postgraduate courses at School of Dental medicine and School of Medicine at the University of Zagreb. According to the polls, she was honoured as the best lecturer at the School of Dental medicine, University of Zagreb, for the academic year 2012/13. In 2021 she received an award from Egyptian Society for Radiology and Nuclear Medicine for an outstanding scientific contribution.

She is a higher scientific collaborator since 2016, and served as Deputy Editor-in-Chief of Acta Clinica Croatica (2016-2021).

She is a various project and research collaborator: *The role of oxidative stress and opiorfine in the temporomandibular dysfunctions* (Croatian science foundation, 2015), *Diagnostic and terapy of the nonodontogenic painful conditions in the orofacial region* (2013), *Diagnostic of neurogenic and musculoskeletal painful diseases in the orofacial region* (2014) and *Orofacial pain and osteoarthritis of the temporomandibular joint* (2015). She is head of EU project Optimization and improvement of radiological diagnostics effectiveness of Croatian health care system **-** which is a part of Operational programme Efficient human resources, worth 32,5 million kunas (2019-2022).

Dijana Zadravec was born in Čakovec on September 5th, 1973, and is Croatian by nationality.

She graduated from math-natural science highschool „Josip Slavenski" in 1992 in Čakovec. She enrolled the School of Medicine at Zagreb University in 1992, from which she graduated in 1998. She worked as a general practitioner (1999-2000) and in an emergency department (2000-2003). She specialised in radiology (2003-2007) and subspecialised in neuroradiology (2009-2011).

Doctoral degree in Biomedicine and health was obtained at the Zagreb School of Medicine in 2010, the thesis being titled *„Comparative analysis of multislice computed tomography and magnetic resonance of malignant tumors of the maxillofacial region".*

She took postgraduate trainings in dental radiology at the Department of Oral Radiology at Helsinki University Center Hospital in Finland (2011), a course in Magnetic resonance imaging of Head and neck in Belgium (2014), and attended the Pierre Lasjaunias European course of Diagnostic and Interventional Neuroradiology, 13th Cycle, organized by ESNR (European Society of Neuroradiology) and therefore has a European Diploma in Neuroradiology (2016).

Her scientific interest is neuroradiology, dental radiology and head and neck radiology, especially head and neck oncology and temporomandibular joint disorders. She has a lot of experience in MRI and MSCT imaging analysis.

She is an author of university textbooks *Dental Radiology* (2016), *Neuroimunology* (2015) and *Professional diseases and diseases connected to dentists* (2015), *Melanoma* (2015), *Abdominal ultrasound* (2015) and *Dental radiology* (2020).

She had published more than 40 articles in internationally indexed journals.

She lectured and moderated at many domestic and international meetings and congresses, where she had given more than 60 presentations in Croatian and English. She has also organized several domestic meetings, as well as domestic meetings with international participation – annual Emergency radiology symposium (organized four times so far, since 2016) and Radiology academy course in Dubrovnik 2018. She has organized 1st Croatian neuroradiological congress with international participation online in Rovinj 2021.

She is a member of ESNR (European Society of Neuroradiology), ESHNR (European Society of Head and Neck Radiology), CSR (Croatian Society of Radiology) and member of Neuroradiology Section of CSR.

She is the president of the Croatian Neuroradiological Society, whose establishment she initiated.

She is the chief mentor to numerous radiology residents and neuroradiology subspecialization residents.

Dijana Zadravec actively uses Croatian and English language, both in speaking and writing, and has basic comprehension skills in French and German.