Academic year 2021./2022.

Course title: Histopathological analysis of periapical diseases

Department: Department of Endodontics and Restorative Dental Medicine

Adress: School of Dental Medicine University of Zagreb, Gundulićeva 5, 10 000 Zagreb

Total ECTS points: 2.0

Course leader: Professor Božidar Pavelić

Course associates

Teaching plan

	No. classes
Lecture	2
Seminar	4
Practical	4
Total	10

1 class = 45 minutes

Course description

The success of the therapeutic procedure of the periapical lesions depends on the correct diagnosis. In the clinical procedure, diagnosis is based on the clinical examination (inspection, palpation, percussion), radiological findings and tests to assess the pulp vitality. Depending on the cause of development and mode of occurrence, periapical lesions can be divided into inflammatory and non-inflammatory lesions. Precise differentiation is not possible in individual clinical cases. In certain cases, the biopsy finding is an important basis for making the correct diagnosis and thus the correct clinical therapeutic procedure. It is of great importance to have an excellent knowledge of the basic histological structure of the affected area in order to be able to separate it from the present pathological processes. Histological analysis also confirms the final diagnosis after a specific therapeutic procedure. The purpose of the doctoral study is to give an overview of the histological structure of periapical lesions and its possible specificity with clinical and radiological findings.

Learning outcomes

1. Describe histological and embryological stages during tooth development
2. Describe the histological characteristics of periapical lesion
3. Compare clinical, radiological and histopathological characteristics of periapical lesions
4. Explain the therapeutic procedure with regard to radiological, clinical and histopathological characteristics of periapical lesions.

Course contet

Lecture

	Lecture topics	Number of classes/hours
1.	Histological changes during tooth development	1
2.	Histological characteristics of periapical lesions	1
3.	-	-
4.	-	-
5.	-	-
6.	-	-
7.	-	-
8.	-	-
9.	-	-
10.	-	-

1 sat = 45 minuta

Seminari

	Seminar topics	Number of classes/hours
1.	Periapical lesions developed as a result of spreading an infection and / or inflammation	1
2.	Periapical lesions arising as a form of developmental anomalies	1
3.	Distinguishing between inflammatory, benign and malignant periapical lesions	1
4.	Diagnostic techniques and procedures in the analysis of periapical lesions	1
5.	-	-
6.	-	-
7.	-	-
8.	-	-
9.	-	-
10.	-	-

1 sat = 45 minuta

Vježbe

	Practicals topics	Number of classes/hours
1.	Radiological procedures in the diagnosis of periapical lesions	1

2.	Histological analysis of periapical lesions	1
3.	Analysis of similarities and differences between radiological and histological findings	1
4.	Guidance of the therapeutic procedure depending on the histological diagnosis	1
5.	-	-
6.	-	-
7.	-	-
8.	-	-
9.	-	-
10.	-	-

1 class = 45 minutes

Literature

1. Karamifar K, Tondari A, Saghiri MA. Endodontic Periapical Lesion: An Overview on the Etiology, Diagnosis and Current Treatment Modalities. Eur Endod J 2020; 2: 54-67.
2. Musu D, Rossi-Fedele G, Campisi G, Cotti E. Ultrasonography in the diagnosis of bone lesions of the jaws:a systematic review. Oral Surg Oral Med Oral Pathol Oral Radiol. 2016;122(1): 19–29.
3. Ruiz XF, Duran-Sindreu F, Shemesh H, García Font M, Vallés M, Roig Cayón M, et al. Development of Periapical Lesions in Endodontically Treated Teeth with and without Periodontal Involvement:A Retrospective Cohort Study. J Endod. 2017;43(8):1246–9.
4. Cavalla F, Letra A, R.M. Silva RM, and Garlet GP. *Determinants of Periodontal/Periapical Lesion Stability and Progression. J Dent Res.* 2021;100(1):29-36.
5. Brody, A., Zalatnai, A., Csomo, K. *et al.* Difficulties in the diagnosis of periapical translucencies and in the classification of cemento-osseous dysplasia. BMC Oral Health. 2019;19:139. https://doi.org/10.1186/s12903-019-0843-0.
6. Galler KM, Weber M, Korkmaz Y, Widbiller M, Feuerer M. Inflammatory Response Mechanisms of the Dentine–PulpComplex and the Periapical Tissues. *Int J Mol Sci.* 2021;*22*:1480. https://doi.org/10.3390/ijms22031480.
7. Natanasabapathy V, Arul B, Mishra A, Varghese A,Padmanaban S, Elango S, Arockiam S. Ultrasoundimaging for the differential diagnosis of periapical lesions ofendodontic origin in comparison with histopathology–asystematic review and meta-analysis. Int Endod J. 2021;54: 693–711.

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

Božidar Pavelić was born in Zagreb, Croatia, on May 8 1963. He enrolled at the School of Dental Medicine University of Zagreb in 1982 and graduated in 1987. In 1989 he was admitted to the Department of Dental Pathology, School of Dental Medicine, University of Zagreb as a clinical assistant. In 1991, he received Master of Science degree at the School of Dental Medicine in Zagreb, thesis: "Antimicrobial effect of calcium hydroxide on microorganisms S. mutans, S. faecalis and Candida albicans, in vitro". In 1995 became Specialist in Endodontology with Periodontology and Oral Pathology and has been employed at the Clinical Hospital Center Zagreb as a specialist in dental and oral pathology with periodontology in the Clinical Unit for Dental Diseases of the Clinic of Dentistry. In 1999, he received Doctor of Philosophy degree, thesis: "The role of tumor suppressor genes during the development of cystic jaw formations". In 2000, he became an Assistant Professor, in 2004 an Associate Professor and 2014 Full Professor at the Department of Endodontics and Restorative Dentistry.

Actively participates in undergraduate teaching within the courses: Karijesologija, Cariology, Pretklinička restorativna dentalna medicina, Restorativna dentalna medicina I, Restorativna dentalna medicina II, Preclinical restorative dental medicine, Restorative dental medicine I, Pretklinička endodoncija, Endodoncija I, Endodoncija II, Preclinical Endodontics.

He is the head of the course at the postgraduate PhD study Dental Medicine at the School of Dental Medicine in Zagreb entitled „Histopathological analysis of periapical diseases".

He is a member of Croatian Endodontic Association and European Society of Endodontology and nvited speaker and organizer of numerous international and domestic symposiums and working courses. Author and co-author several scientific and professional articles. His research interests include basic research and possible clinical use of ozone and cold atmospheric plasma in therapy of pulp and periapical diseases.

Under his mentorship, 2 doctoral thessis, 51 graduation theses were defended, 4 master theses and 2 postgraduate specialist theses were mentored.

He is coautor on 3 international university textbooks and has translated four chapters into two university textbooks.

Bibliography

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