Prevalence of Pathologies Associated with Impacted Third Molars in Kosovo Population: an Orthopantomomographic Study

Učestalost patoloških promjena povezanih s impaktiranim trećim kutnjacima među kosovskim stanovništvom: ortopantomografska studija

Introduction

Third molars have the highest incidence of impaction in human dentition and their values have been on a rise (1-4).

As a result, the most frequent procedure in oral surgery worldwide is a removal of impacted third molars (5, 6). An impacted tooth, that is, the impacted third molar is a pathological condition in which tooth fails or is not excepted to erupt into the dental arch based on clinical and radiographic findings (7). Failure of these teeth to erupt might be a consequence of late maturation of these teeth, an increased crown size, distal eruption of dentition lack of space, malposition or limited skeletal growth (2, 8-10).

An impacted maxillary and mandibular molar may take a variety of positions and levels of impaction, which can result with a range of pathologies associated with their impac-

Uvod

U ljudskoj dentici najčešća je impakcija trećih kutnjaka i njihov broj je u porastu (1 – 4). Kao posljedica toga, najčešći oralno-kirurški zahvat diljem svijeta jest uklanjanje trećih kutnjaka (5, 6). Impaktirani zub, odnosno treći kutnjak, patološko je stanje u kojemu zub ne uspijeva, ili se na temelju kliničkih i radiografskih nalaza ne očekuje da nikne u zubni luk (7). Neuspjeh nicanja tih zuba može biti posljedica njihova kasnog sazrijevanja, povećane veličine krune, distalnog nedostatka prostora, malformacije ili ograničenog rasta skeleta (2, 8 – 10).

Impaktirani maksilarni i mandibularni kutnjak može imati različite položaje i razinu impakcije, što može rezultirati nizom povezanih patoloških promjena (2, 5). Najčešće patološke promjene povezane s trećim kutnjacima su karijes...
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Impaktiranih zuba ili susjednoga zuba, resorpcija drugog kutnjaka, gubitak parodontne kosti susjednoga zuba i odontogenne ciste

A great deal of discussion has been taking place worldwide about the suggestion for retention or extraction of impacted third molar and it remains ongoing (2, 11-12). An extremely wide-ranged and balanced review of this topic has been published by Mercier and Precious (14). In their article they emphasized that from 149 publications they have referred to, they concluded that for particular patient significant risks and benefits must be considered individually. Furthermore, oral surgeons are those who should act in the patient's best interests during the evaluation of the third molar extraction (14).

In 1979, the National Institute for Dental Research, supported a conference dedicated to third molar, with main intention to reach an agreement about when should third molar extraction be advised and under what circumstances (15). Since then guidelines for management of impacted third molars have been published (16, 17), the National Institute of Clinical Excellence (16) and the Scottish Intercollegiate Guidelines Network (17) have established the guidelines for removal of third molar, which were reviewed in 2005, and today they are foundations for ethical clinical practice. Considering the danger and cost (see Table 3) associated with third molar extractions, they concluded that there was no proper indication to support prophylactic removal of asymptomatic impacted third molars. On the other hand, the above mentioned guidelines did not consider recommendations by the American Association of Oral and Maxillofacial surgeons, supporting extraction of asymptomatic third molars considering that they are a potential cause of chronic inflammation, affecting patients to a range of periodontal and systemic problems in the future. The conclusions from the above mentioned studies were that extraction of third molars should only be carried out in the presence of pathology (18-21).

Therefore, it is of utmost importance to be familiar with the prevalence of pathologies associated with impacted third molars (1).

Despite the fact that until today there have been several studies concerning the potential development of pathologies associated with impacted third molars in populations from different countries (1, 22-34), the evidence is frequently inconsistent. Nitzan et al (27) report a prevalence of 8% of root resorption of second molar adjacent to impacted third molar. A long term study by Kahl B et al. (35), where they evaluated tooth resorption on asymptomatic third molars in orthodontically treated patients, resulted with a prevalence of 8% resorption of upper second molar and 9.5% of lower second molar. However, Sewerin and von Wowern (36), reported about the zero root resorption of adjacent second molar by impacted third molar.

Considering the fact that at present the frequency of pathologies associated with impacted third molars in Kosovar populations has not yet been evaluated, the aim of this study was to determine the prevalence of caries, periodontal bone loss of adjacent tooth and increase over 4mm in pericoronar space in Kosovar population visible on panoramic images.
Methods and Material

In this retrospective study, OPGs were obtained at the University Dentistry Clinical Center of Kosovo and analyzed for the pathologies associated with an impacted third molar. OPGs were taken as a standard procedure for all visiting patients. Consent forms of approval were signed by patients wherein they stated that their radiographs could only be used for educational and research purposes. The study protocol was approved by UDCCK and University of Zagreb School of Dental Medicine.

In this study, the inclusion criteria were as follows: OPGs of patients with minimum age of 18 years or older, males and females with all forms of impaction. OPGs with low quality were excluded from the study, including third molars with incomplete root formation. To collect patients’ data, their dates of birth and genders were used.

Panoramic radiographies were retrieved as digitalized images from the UCCK’s database. Images from the digital OPG machine were exported to JPEG format using the Sidelix Next generation imaging software, version 2.4*, integrated with the I-Max Touch Line: 220-240V-7A 50/60Hz max exposure time: 15s, produced by Owandy (OWANDY 6, allèe Kepler 77420 Champs-sur-Marne - FRANCE)*.

Third molar was defined as impacted with no functional occlusion, since it was not allowed to erupt on its eruption path by other tooth, soft tissue or bone and its roots were fully formed (23). Primarily, impacted third maxillary and mandibular molars were identified in the OPG. Afterwards, the following radiographic lesions were recorded on OPG’s: caries in impacted teeth and adjacent tooth, periodontal bone loss on distal side of the second mandibular and maxillary molar, adjacent tooth root resorption and increased pericoronal space of dental follicle.

The norms for diagnosing pathologies associated with impacted third molar in maxilla or mandible were as follows: clear carious lesion noticed in OPG in the impacted third molar or in the adjacent second, The periodontal bone loss of the distal part of the second molar was measured from the cement-enamel junction to the marginal bone level over 5mm; Root resorption of adjacent tooth to impacted third molar on OPG, was a clear loss of substance in the root of second molar in maxilla and mandible due to direct contact between impacted third molar and adjacent tooth; Increase in the pericoronal space of dental follicle.

For the measurement of the above mentioned dimensions we used ruler from the coral draw.

Statistical analysis

Data were analyzed using a Pearson chi-square test using the Statistical Package for the Social Sciences (version 18.0; SPSS, Inc, Chicago, IL). The age, gender, number of impacted third molars associated with pathologies was displayed by frequency and percentage. The relationships between the groups were analyzed using the Pearson chi-square test. The results were considered statistically significant if the p-value was less than 5% (p < 0.05).

All OPGs were assessed by a single examiner (ZS), a PhD candidate, to eliminate inter-examiner errors. The validity of

Materijal i postupci

U ovom retrospektivnom istraživanju OPG-ova u Sveučilišnom stomatološkom centru Kosova analizirali smo patološke promjene povezane s impaktiranim trećim kutnjakom. OPG-ovi su snimljeni kao standardni postupak. Svi pacijenti potpisali su informirani pristupak da se njihove rendgenske snimke mogu upotrijebiti jedino u obrazovne i istraživačke svrhe. Protokol istraživanja odobrili su Etičko povjerenstvo UDCCK-a i Etičko povjerenstvo Stomatološkog fakulteta Sveučilišta u Zagrebu.

Kriteriji za sudjelovanje bili su sljedeći: pacijenti u dobi od 18 godina ili stariji, pacijenti obaju spolova sa svim oblicima impakcije. OPG-ovi niske kvalitete isključeni su iz istraživanja, kao i treći kutnjaci s nepotpuno formiranim korijenima. Zabilježeni su podatci o datumu rođenja i spolu pacijenta.

Panoramske snimke preuzete su kao digitalizirane snimke iz baze podataka UDCCK-a. Digitalizirane snimke prebačene su u JPEG format s pomoću softvera za obradu slike Sidelix, inačica 2.4*, integrirana s I-Max Touch Lineom: 220-240V-7A 50/60Hz, maksimalno vrijeme ekspozicije 15 s, proizvođač Owandy (OWANDY 6, allèe Kepler 77420 Champs-sur-Marne - Francuska)*.

Treći kutnjak definiran je kao impaktiran ako nije u funkciji okluziji, zato što nije mogao niknuti zbog zapreke drugim zubima, mekim tkivima ili kostima, a korijeni su potpuno formirani (25). Najprije je na OPG-u identificiran impaktirani treći kutnjak u gornjoj ili donjoj čeljusti. Nakon toga zabilježene su sljedeće radiografske promjene na OPG-u: karijes impaktiranoga i susjednoga zuba, gubitak parodontne kosti na distalnoj strani drugoga kutnjaka obiju čeljusti, resorcija korijenja susjednoga zuba i povećani perikoronarni prostor zubnoga folikula.

Kriteriji za dijagnosticiranje patoloških promjena povezana s trećim kutnjakom u gornjoj ili donjoj čeljusti: na OPG-u utvrđena jasna karijesna ležija trećega kutnjaka ili susjednoga drugog kutnjaka; gubitak parodontne kosti veći od 5 mm distalnoga dijela drugoga kutnjaka izmjeren od caklinsko-cementnog spojista do razine marginalnoga dijela kosti; resorcija korijenja susjednoga zuba uz treći kutnjak bila je jasan gubitak tkiva korijenja drugog kutnjaka u obje čeljusti zbog izravnoga kontakta između trećeg kutnjaka i susjednoga zuba; povećanje perikoronarnoga prostora zubnog folikula veće od 4 mm oko impaktiranoga trećeg kutnjaka.

Za mjerenje gore navedenih dimenzija koristili smo se ravnalom iz programa Corel draw.

Statistička analiza

Podatci su analizirani Pearsonovim hi-kvadrat testom izvedenim korištenjem Statistical Package for the Social Sciences (verzija 18.0; SPSS, Inc, Chicago, IL, SAD). Dob, spol i broj impaktiranih trećih kutnjaka povezanih s patološkim promjenama prikazan je prema učestalosti i postotku. Odnos između skupina analizirani su Pearsonovim hi-kvadrat testom. Rezultati su smatrani statistički značajnima ako je p-vrijednost manja od 5 % (p < 0,05). Sve OPG-ove ocjenjivao je jedan ispitivač kako bi se izbjegle pogreške među ispitivačima. Valjanost očitanja OPG-ova ispitana je za 99
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In our retrospective study, we screened the data of 5515 adult patients who were referred at the UCCK, of these 3147 (57.1%) were female and 2368 (42.9%) were male, with female participation in significantly higher percentage compared to men (p<0.001). From the included OPG’s, one or more impacted third molars were shown in 710 OPG-s: 414 (58.3%) in women and 296 (41.7%) in men; with gender ratio of 1:1.4 (Table 1).

The age range was from 18 to 77 years (mean age ± SD = 29.3 ± 12.8). Men were older than women: mean age ± SD = 32.1 ± 14.6 respectively 27.2 ± 10.9, p <0.001). Six working age groups were included in this research: 18-20, 21-30, 31-40, 41-50, 51-60 and greater than 60 (Table 1). Pathologies associated with impacted teeth dominated in younger age groups, with their prevalence around 70% (preciously 27.5 ± 42.3 = 69.8%) (Table 1).

Table 2 presents a total number of 1297 impacted third molars that were found in both jaws.

Detectable radiographic lesions were seen in 383 impacted third molars. A significantly higher frequency of pathologies associated with those impactions were found significantly more in the maxilla compared to the mandible (26.2%, P<0.001) (Table3). In maxilla 42.6% (36.9 + 5.7) of third impacted molar had one or two pathologies, whereas the prevalence of pathologies in third impacted molars was 21.5% (19.6 + 1.9) (Table4) in mandible

The prevalence of root resorption was the most frequent pathological condition with a prevalence of 23.7% in our studied teeth. It was followed by over 5mm periodontal bone loss of the distal part of the second molar 5.5% and caries appearing in 2.5% cases. An increase in pericoronal space of the dental follicle over 4mm around third impacted molar had appearing in 2.5% cases. An increase in pericoronal space of the dental follicle over 4mm around third impacted molar had one or two pathologies, where-

Table 5 shows there were no statistically significant differences in the prevalence of pathologies between male and female patients. The rates of pathological lesions observed in between left and right side had an equal prevalence of: 29.7% (26.4 + 3.3) right and 29.4% (26.1 + 3.3) left side (Table 6 and 7).

After evaluating the entire results, it could be noticed that in 1297 impacted teeth found in 710 OPG’s, 70.5% of those impacted third molars were not influenced by any of the four pathologies. On the other hand, 26.2% of the cases were influenced by at least one pathological lesion and 3.3% of cases by two pathological lesions.

Rezultati

U našoj retrospektivnoj studiji pregledali smo podatke 5515 odraslih pacijenata upućenih u UKCK – 3147 (57,1 %) žena i 2368 (42,9 %) muškaraca, s udjelom žena u znatno većem postotku u odnosu prema muškarcima (p < 0,001).

Od uključenih OPG-ova, jedan ili više impaktiranih trećih kutnjaka prikazani su u njih 710 – 414 (58,3 %) kod žena i 296 (41,7 %) kod muškaraca; s omjerom 1 : 1,4 (tablica 1.).

Raspon dob dobi je od 18 do 77 godina (srednja dob ± SD = 29,3 ± 12,8). Muškarci su bili stariji od žena – srednja dob iznosila je ± SD = 32,1 ± 14,6, odnosno 27,2 ± 10,9, p < 0,001). Šest dobnih skupina bilo je uključeno u ovo istraživanje: 18 – 20, 21 – 30, 31 – 40, 41 – 50, 51 – 60 i više od 60 (tablica 1.). U mladim dobnim skupinama prevladavale su patološke promjene povezane s impaktiranim zubima, a njihova učestalost bila je oko 70 % (27,5 + 42,3 = 69,8 %) (tablica 1.).

Tablica 2. pokazuje 1297 impaktiranih trećih kutnjaka u objema čeljustima. Radiografski su ustanovljene patološke promjene povezane s 383 impaktirana treća kutnjaka. Utvrđeno je da je značajno veća učestalost patoloških promjena povezanih s tim impakcijama u maksili u usporedbi s mandibulom (26,2 %, P < 0,001) (tablica 3.). U maksili je 42,6 % (36,9 + 5,7) impaktiranih trećih kutnjaka imalo jednu ili dvije patološke promjene, a u mandibuli je učestalost patoloških promjena povezanih s trećim kutnjacima bila 21,5 % (19,6 + 1,9) (tablica 4.).

Resorpcija korijena bila je najčešća patološka promjesa s učestalošću od 23,7 % na zubima koje smo ispitivali. Slijedio je gubitak parodontne kosti veći od 5 mm u distalnome dijelu drugog kutnjaka – 5,5 %, a karijes se pojavio u 2,5 % slučajeva. Povećanje perikoronarnog prostora Zubnog folikula veće od 4 mm oko impaktiranih trećih kutnjaka imalo je najnižu učestalost – samo 1,2 % u objema čeljustima (tablica 3.).

Tablica 5. pokazuje da nema statistički značajnih razlika u učestalosti patoloških promjena između muškaraca i žena.

Patološke promjene promatrane između lijeve i desne strane označavao je 0.756. U našoj retrospektivnoj studiji pregledali smo podatke 5515 odraslih pacijenata upućenih u UKCK – 3147 (57,1 %) žena i 2368 (42,9 %) muškaraca, s udjelom žena u znatno većem postotku u odnosu prema muškarcima (p < 0,001).

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Patološke promjene promatrane između lijeve i desne strane imale su istu učestalost – 29,7 % (26,4 + 3,3) desno i 29,4 % (26,1 + 3,3) lijevo (tablice 6. i 7.).

Nakon procjene cjelokupnih rezultata moglo bi se uočiti da između 1297 impaktiranih zuba pronađenih na 710 OPG-ova, 70,5 % impaktiranih trećih kutnjaka nisu imali udružene patološke promjene. S druge strane, 26,2 % slučajeva imalo je jednu i 3,3 % dvije patološke promjene.
Table 1. Distribution of patients with impacted third molars according to age group

| Age groups | Male (N, %) | Female (N, %) | Total (N, %) |
|------------|-------------|---------------|--------------|
| 18 – 20    | 73 (24.7)   | 122 (39.5)    | 195 (27.5)   |
| 21 – 30    | 106 (35.8)  | 194 (60.9)    | 300 (42.3)   |
| 31 – 40    | 43 (14.5)   | 48 (11.6)     | 91 (12.8)    |
| 41 – 50    | 33 (11.1)   | 23 (5.6)      | 56 (7.9)     |
| 51 – 60    | 23 (7.8)    | 21 (5.1)      | 44 (6.2)     |
| 61 – 77    | 18 (6.1)    | 6 (1.4)       | 24 (3.4)     |
| Total      | 296 (100)   | 414 (100)     | 710 (100)    |

Pearson Chi-Square value = 27.42, df = 5, P < 0.001, 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.01.

Table 2. Prevalence of pathologies associated with impacted third molars according to age groups

Pathologies | Caries of impacted and/or adjacent teeth | Periodontal bone loss of adjacent tooth > 5 mm | Root resorption of adjacent tooth | Increase in pericoronar gap | Total |
|------------|----------------------------------------|-----------------------------------------------|---------------------------------|-----------------------------|-------|
| 18 – 20    | 6 (1.5)                                | 43 (10.9)                                    | 85 (21.5)                       | 6 (1.5)                     | 396 (100) |
| 21 – 30    | 25 (4.3)                               | 24 (4.2)                                     | 133 (23.0)                      | 4 (0.7)                     | 578 (100) |
| 31 – 40    | 0 (0.0)                                | 2 (1.4)                                      | 48 (33.8)                       | 1 (0.7)                     | 142 (100) |
| 41 – 50    | 2 (2.4)                                | 1 (1.2)                                      | 25 (30.1)                       | 1 (0.7)                     | 83 (100)  |
| 51 – 60    | 0 (0.0)                                | 1 (1.6)                                      | 10 (16.4)                       | 1 (1.2)                     | 61 (100)  |
| 61 – 77    | 0 (0.0)                                | 0 (0.0)                                      | 6 (16.2)                        | 0 (0.0)                     | 37 (100)  |
| Total      | 33 (2.5)                               | 71 (5.5)                                     | 307 (23.7)                      | 15 (1.2)                    | 1297 (100) |

Pearson Chi-Square value = 14.11, df = 5, P = 0.015. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.76.

Table 3. Prevalence of pathologies associated with impacted third molars according to jaw

| Pathologies | Caries of impacted and/or adjacent teeth | Periodontal bone loss of adjacent tooth > 5 mm | Root resorption of adjacent tooth | Increase in pericoronar gap | Total |
|------------|----------------------------------------|-----------------------------------------------|---------------------------------|-----------------------------|-------|
| Maxilla    | 32 (6.5)                               | 32 (6.5)                                     | 159 (32.3)                      | 15 (3.0)                    | 493 (100) |
| Mandibula  | 1 (0.1)                                | 39 (4.9)                                     | 148 (18.4)                      | 0 (0.0)                     | 804 (100) |
| Total      | 33 (2.5)                               | 71 (5.5)                                     | 307 (23.7)                      | 15 (1.2)                    | 1297 (100) |

Table 4. Number of pathologies associated with impacted teeth according to jaw

| Pathologies | Maxilla (N, %) | Mandibula (N, %) | Total (N, %) |
|------------|----------------|------------------|--------------|
| 0          | 283 (57.4)     | 631 (78.5)       | 914 (70.5)   |
| 1          | 182 (36.9)     | 158 (19.6)       | 340 (26.2)   |
| 2          | 28 (5.7)       | 15 (1.9)         | 43 (3.3)     |
| Total      | 493 (100)      | 804 (100)        | 1297 (100)   |

Pearson Chi-Square value = 67.43, df = 2, P < 0.001. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.34.
Discussion

Currently dental practitioners and oral surgeons face challenges to determine a constant guiding principle regarding the extraction of asymptomatic third molar impaction (11, 37, 38).

However, according to a compromise conference held for removal of third molar impaction there is almost no controversy concerning the removal of impacted third molars when pathologies are associated with them (14, 39). They defined criteria for impacted third molar removal, indicating that surgery should be carried out as soon as possible once the diagnosis is made for a non-restorable caries of adjacent or im-
pacted teeth, resorption of adjacent teeth, bone destruction, follicle disease and infections (14, 39). Nevertheless, it is also significantly important to highlight the fact that the Scottish Intercollegiate Guideline Network has rejected a prophylactic extraction of asymptomatic impacted third molars (40). This extraction rejection may be a result of deficient evidence supporting prophylactic extraction of these teeth (11).

Bearing in mind the significant importance of having data on the incidence of pathologies associated with the impacted third molar, the main focus of our study was its epidemiology and prevalence in a Kosovar population.

To determine the prevalence of pathologies associated with an impacted third molar is challenging due to the difficulties that emerge due to the fact that a random sample from the general population is required. Obtaining such samples is admittedly complex because of the arguable ethical considerations and associated costs (1, 25). In order to avoid such a bias, our target was to evaluate the OPGs of the patients that have already been taken at the UDCK.

The prevalence of pathologies in our study is shown in Table 3. From the literature, it has been reported that the impactions of the third molars have been causing root resorption of adjacent second molars (1, 25). Our evaluation of the tooth resorption between maxilla and mandible showed the prevalence of 23.7%. Our finding shows a much higher prevalence of root resorption compared to the findings of similar studies of a Honk Kong Chinese population by Chu et al (25) who reported a total figure of only 13 (0.4%) cases of resorption amongst over 3000 impacted third molars. Also, it is different from the findings by van Der Linden et al who reported a prevalence of only 0.9% in 2872 impacted third molars (1). On the contrary, the finding by Ahlqvist et al (42), in a study of 121 impacted third molars, reported only one case of second molar resorption, whereas Sewerin and von Wowern reported about a zero second molar impaction (36).

The variation of tooth resorption prevalence can be explained by diverse definitions of root resorption in different studies. In this study, root resorption was defined as a clear loss of the tooth substance, while a group of researchers (27) defined root resorption as an irregularity and discontinuity of the root surface. Furthermore, Stanley et al have emphasized that it is complicated to determine radiologically if coronal radiolucency of second molar adjacent to third molar is due to caries or root resorption (29).

The periodontal bone loss of the distal part of the second molar more than 5mm below the cemento-enamel junction in our study group was (5.5 %) and this was second largest pathology associated with impacted third molars. On the other hand, it was the highest score of pathology reported in data by Chu et al. They reported about the prevalence of approximately 9% of periodontal bone loss of more than 5 mm in second mandibular molar adjacent to impacted third molar in 3778 impacted third molars (25). Wynand van der Linden et al (1), obtained a similar finding to our study of periodontal bone loss of 4.9%, pathology which was mostly located in mandible. In our study, the maxilla had significantly higher prevalence of periodontal bone loss with 32.2%, compared to
the mandible with only 18.4%. In their study, Mercier and Precious stated that it is challenging to compare periodontal bone loss due to the use of dissimilar definitions about the same condition (14).

In our study, we have found that in 1238 impacted teeth, caries occurred only in 2.5% of the teeth studied. Caries not being dominating pathology in our study, is dissimilar to retrospective finding in a study of 1001 OPG’s of patients that visited dental school (1) The percentage of caries in impacted third molars or adjacent molars was 7.1% and 42.7%, respectively. In general, their finding was consistent with other studies (23, 41). Nevertheless, caries figures found in our study might be underrated because the diagnosis of caries was based only on OPG’s.

In previous radiographically based studies researching increased coronal radiolucency surrounding impacted third molar over 4 mm reported the frequency of no more than 1% (40, 42). In our study, we observed coronal radiolucency of (1.2%) with its higher percentage located in mandible. However, in studies when a space of >5mm for widened coronal radiolucency was used, the prevalence of the pathology for both jaws was up to 4.6% (1). Assessing the coronal radiolucency changes, Stephens emphasized the importance of attentiveness in order to avoid confusing a follicular space enlargement with a developing dentigerous cyst (43). He believed that inaccuracy appears when follicular space >2.5mm in radiographic examinations is classified as cyst.

On the other hand, follicular tissues of radiologically normal teeth when examined histologically showed that in 34% to 46.5% of cases (31, 32, 44) had histological findings pinpointing of dentigerous cyst formation. Therefore, radiographic appearance may not be an exceptionally dependable indicator of the absence of disease within the dental follicle.

Study Limitations

Study samples were taken only from the University Clinical Center of Kosovo. This clinical center is the main health, education, and research institution for dentistry in Kosovo. The sample size represents 0.44% of the population. However, the sample of the patients with impacted third molars featured a slight dominance of females over males, which may have been a consequence of female patients having higher awareness regarding their oral health.

Conclusion

Evaluating the prevalence of pathologies associated with impacted third molar in a certain population contributes to making a comparison pattern in different regions and populations worldwide.

Our data in Kosovar population show that the prevalence of pathologies is 29.5% with a distinct predilection of pathologies in impacted third maxillary molars. The most common pathology appeared to be root resorption of adjacent tooth, followed by periodontal bone loss, caries and increased peri-coronal radiolucency.

An early detection and data about the prevalence of pathologies associated with impacted third molar is essential in order to accomplish an effective treatment. Despite the fact

U našem istraživanju utvrdili smo da se na 1238 impaktiranih zuba karijes pojavio samo na 2,5 % ispitivanih zuba. Karijes nije dominantna patološka promjena u našem istraživanju i različita je od retrospektivnog nalaza u studiji o 1001 OPG-u (1). U njemu je postotak karijesa impaktiranih trećih kutnjaka ili susjednih drugih kutnjaka bio 7,1 %, odnosno 42,7 %. Taj nalaz općenito je u skladu s rezultatima drugih istraživanja (23, 41). Ipak, broj karijesa u našem istraživanju mogao bi biti podcijenjen u odnosu prema stvarnoj stopi karijesa, jer se dijagnoza temelji samo na OPG-ovima.

U osuđačnim radiografskim temeljenim istraživanjima, za povećanu perikoronarnu transparentciju impaktiranoga treće-ga kutnjaka veću od 4 mm, učestalost nije bila veća od 1 % (40, 42). U našem istraživanju zabilježena je perikoronarna transparentcija od 1,2 %, s većim postotkom u donjoj čeljusti. No u istraživanjima u kojima je bila uključena perikoronarna transparentcija veća od 3 mm, učestalost te patološke promjene iznosila je 4,6 % ukupno u objema čeljustima (1). Procjenjujući promjene perikoronarnih transparentcija, Stephens je istaknuo koliko je važan oprez kako bi se izbjegla zabuna između povećanog perikoronarnog prostora i odontogene ravo-jne ciste (43). Smatrao je da se netočnost pojavljuje kada se folikularni prostor > 2,5 mm tijekom radiografskih pregleda klasificira kao cista.

S druge strane, kada se folikularno tkivo radiološki normalnih zuba ispitalo histološki, pokazalo se da su u 34 % do 46,5 % slučajeva (31, 32, 44) histološki nalazi upozoravali na nastanak cistične formacije. Zato radiografski nalaz ne mo- rana biti iznimno pouzdan pokazatelj odstupnosti bolesti unutar zubnoga folikula.

Ograničenja studije

Uzorci za istraživanje dobiveni su samo od Sveučilišnoga kliničkog centra Kosova. Taj klinički centar glavna je zdravstvena, obrazovna i istraživačka ustanova za stomatologiju na Kosovu. Veličina uzorka iznosi 0,44 % stanovništva. No uzorak pacijenata s impaktiranim trećim kutnjacima pokazuje malu dominacije žena u odnosu prema muškarcima, što je možda posljedica veće svijesti žena o oralnome zdravlju.

Zaključak

Procjena učestalosti patoloških promjena povezanih s impaktiranim trećim kutnjacima u određenoj populaciji pridonoši usporedbi uzorka u različitim regijama i populacijama diljem svijeta.

Naši podaci o kosovskoj populaciji pokazuju da je uče- stalost patoloških promjena 29,5 %, češće na impaktiranim trećim gornjim kutnjacima. Najčešća patološka promjena jest resorpcija korištena susjednoga zuba, zatim gubitak periferne kosti, karijes i povećana perikoronarna transparentcija.

Da bi se postiglo učinkovito liječenje, prijeko je potrebo- no rano otkrivanje i podaci o učestalosti patoloških promje- na povezanih s impaktiranim trećim kutnjacima. Iako je u našem istraživanju učestalost povezanih patoloških promjena...
that the prevalence of associated pathologies is considerably low in our study, it is of utmost importance to carry out regular examinations in order to keep the asymptomatic impacted third molars in good oral health.

Further studies are highly recommended and needed in Kosovo and the region.

Conflict of interest
None declared

Sukob interesa
Nije bilo sukoba interesa.

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