

Surgical Evaluation of The Early Extraction of Deciduous Teeth by Faculty of Dentistry Oral and Maxillofacial Surgery Clinic Throughout A Year: Retrospective Study

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ABSTRACT

Early deciduous tooth extraction is a common public health problem that causes long-term economic and time-related loss. Early deciduous tooth extraction is common due to lack of a pedodontist in the dentistry faculty and parental awareness. For this reason, this retrospective study was planned to determine the number of early extractions of all the deciduous teeth in the last year and to raise awareness for child patients in terms of surgery.

Between January 2017 and December 2017, data-processing documents of child patients between the ages of 4-12 whose deciduous teeth were extracted were examined. A classification was made based on age group, lower-upper jaw, gender, early extraction times, and the physiological eruption times of the deciduous teeth, the used anesthesia techniques and the individual number of extractions were evaluated.

It was identified that approximately half of all extractions were early, and it was observed in early extractions that the incisor and canine teeth extraction in girls and the 1st deciduous molar teeth extraction in boys exhibited statistically significant differences.

The examinations of pediatric specialists and treatment protocols in child patients, access to pedodontists easier, and raising parental awareness can seriously impact the prevalence of early extractions in oral and maxillofacial surgery clinics. A single extraction in a single session would be more comfortable for both the child and the dentist.

Key Words: Deciduous teeth, early extraction, retrospective

Introduction

Together with the tooth extractions of adult patients, tooth extractions of child patients are among the simple routines of the surgical clinics of faculties of dentistry. While extractions at the times of the eruption of the deciduous teeth are normally accepted as a physiological process, losses of teeth before their natural eruption time are defined as early losses. Early loss of deciduous teeth is generally a common public health problem (1, 2).

Early deciduous tooth extractions are done for reasons like socioeconomic conditions, inability to reach the guidance of a performed specialized in this subject, and incorrection indication, (6,7) including poor oral hygiene, dental injuries, tooth decay, and infection (3,4,5).

The indications of the tooth extractions of child patients having been planned by a pedodontist carry

great importance in terms of the maintenance of a straight jaw-tooth structure in the future and the ability of protective treatment to be provided. Deciduous teeth being able to be held in the mouth until the time of physiological eruption brings many advantages. Early deciduous tooth loss can lead to the loss of the canal length necessary for the permanent continuation of the teeth, to crowding, to rotation, and to teeth being permanently embedded (8). Economic and time loss are in question because of the long-term development of the need for orthodontics (9,10).

Because root resorption occurs in the extractions of deciduous teeth that come at the time of physiological eruption, both the preferred anesthesia and the easy passage of the extraction enable a comfortable clinical process in terms of the patient and the dentist (6, 11).

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Table 1. Number of extractions and age averages according to gender

	Girl	Boy	Total	P
<i>n</i>	864	877	1741	0.659*
Number of Extractions	1673	1906	3579	0.001*
Age Average	8.3	8.18	8.24	
Number of Teeth Extracted Early	871	909	1784	.203*

* Z-ratio test

This study was arranged for the purposes of observing the number of early stage extractions and the surgical evaluation of deciduous teeth extractions in all deciduous teeth extractions because there isn't a pedodontist specialist in the staff of the faculty.

Material and Method

This study was carried out with the approval of the YYU Faculty of Medicine Clinical Research Ethics Committee. Information-process documents were examined of child patients between the ages of 4-12 who had tooth extractions from January-December 2017. Based on the classification (12) of Logan and Kronfeld, incisors, canines, and 1st and 2nd molar teeth were divided into groups as early deciduous teeth extractions and the normal extractions of deciduous teeth in the physiological process. Separate evaluations were done based on gender and age. The used anesthesia techniques and the individual number of extractions were evaluated.

Descriptive statistics, averages, and categorical variables were expressed as the number (n) for the constant variables in the study. The Z-ratio test was conducted in the identification of the relationship between variables based on gender and the type of tooth extracted. The statistical significance level in the calculations was taken as 5%, and SPSS (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.) statistical package program was used.

Results

The number of patients, number of extractions, and age averages between the specified dates were provided in Table-1. In Table-2, distributions were shown based on age and gender in addition to the numbers of incisor, canine, 1st large molar and 2nd large molar teeth based on early and normal extraction times.

As a result of the examined data, it was observed that more teeth were extracted in a statistically significant

scale from boys compared to girls (Table-1). When the groups of extracted teeth were evaluated based on gender, the early extractions of incisor and canine teeth were found to be at a greater, statistically significant scale in girls compared to boys. In boys, however, early extractions of 1st deciduous molars showed statistically significant difference in male children compared to female children. There are differences to a statistically significant degree in the early extraction of mandibular canines in girls compared to boys and in the early extractions of both mandibular and maxillary 1st deciduous molars (Table-3). Because deciduous molar extractions saved the regional applications of anesthesia as a package in the information-operations entries, the same amount of applications of regional anesthesia with extractions were performed. When the number of patients is evaluated with the number of extractions, it has been determined that more than one tooth extraction was performed in the same session from the same patient.

Discussion

The surgical evaluation of the number of extractions and the extraction process of the early deciduous tooth extractions in the deciduous teeth extractions performed in the past year at the surgical clinic of the faculty of dentistry was planned in the study. It was determined as a result that early extractions formed approximately half of all extractions, and a statistically significant difference was observed in the extraction of the incisor and canine teeth in girls and in the 1st deciduous molar teeth in boys within the early extractions.

Al-Shahrani et al. reported in a study that included 307 patients that they did to determine the early extractions of deciduous canine and deciduous molar teeth between the ages of 9-11 that 51% of all the extractions were early extractions (1). In the study, the early extraction ratio was 49.9% when incisors were included, and the results of the study were consistent with the literature. In a study that Murshid et al., carried out in children between the ages of 5-10, it

Table 2. Distribution of extracted teeth and numbers based on gender and age

	Incisors		Canines		1 st Deciduous Molars	2 nd Deciduous Molars		
	4-5 years	6-7 Years>	<7-8 Years	9-11 Years>	<8-9 Years	10-11 Years>	<8-9 Years	10-11 Years>
Female	47	226	34	190	396	118	394	266
Boy	33	359	19	209	468	170	389	257
*p	.025	.001	.002	.178	.001	.001	.800	.578
Average Age of Girl Children	4.6	7.1	7.9	10.2	7.6	10.5	7.8	10.7
Average Age of Boy Children	4.5	7.2	7.3	10.4	7.4	10.5	7.4	10.7

* Z-ratio test

Table 3. Distributions of the maxilla-mandibula extractions of girl-boy children who had their deciduous teeth extracted early

	Incisors		Canines		1 st Deciduous Molars	2 nd Deciduous Molars		
	4-5 years	6-7 Years>	<7-8 Years	9-11 Years>	<8-9 Years	10-11 Years>	<8-9 Years	10-11 Years>
Girl Children Maxillar	28	189	14	123	206	49	152	130
Boy Children Maxillar	20	240	13	126	226	97	161	142
*p	.098	.001	.785	.788	.001	.001	.472	.303
Girl Children Mandibular	19	77	20	67	190	69	242	136
Boy Children Mandibular	13	119	6	83	242	73	228	115
*p	.127	.001	.001	.063	.001	.635	.361	.060

* Z-ratio test

was found that the early extraction of deciduous teeth had been done at a ratio of 40.54% and that no difference between genders was observed. It was determined that the greatest loss was in the lower left 2nd deciduous molars (13). In studies done in Brazil and Denmark, however, the ratios of early extraction have been presented as 24.9% and 47.3%, respectively. (2,14).

In a 5-year retrospective evaluation in which the causes for deciduous molar extractions in Turkey

were investigated, 2508 tooth extractions were done from 1755 children between the ages of 2-12, that many of the extractions were due to decay, that there was no difference between genders, and that deciduous molars were more often extracted (15). The results of the study are partially consistent with the literature. There is a difference between genders based on tooth groups in the current study. However, the numbers of deciduous molar extractions are supported significantly in the literature. Apart from

this, when the 5-year patient and extraction numbers at the center at which the research was conducted are compared with the 1-year patient and extraction numbers of the current study, an interesting difference is revealed.

Child patients are the patient group in the surgical clinic whose cooperation is the most difficult, and children need to be prepared psychologically by the physician for injection and extraction. For operations in child patients, because the consent of the child is observed, the amount of time spent in the seat may be longer compared to an adult patient. There are various steps to observe even for the application of anesthesia (16). Along with the age of the child being small in early extractions, cooperation is becoming more difficult and the physician struggles on the part of the anesthesia and extraction (17). The difference in the age averages between the early extraction age averages in the study and the extractions in the physiological processes appeared as a serious timeframe like an average of 3 years. This average is lower in boys compared to girls.

The number of deciduous molar extractions in this study consists of 69% of all extractions. And of these, 67% are deciduous molars extracted from boys. The surplus in the number of early extractions also brings together the application of regional anesthesia as much as the number of extractions. Regional applications are applications that themselves have some risks. While extraction is even possible with topical anesthesia and infiltrative, which is mostly less risky, physicians are forced to prefer regional applications in early extractions because root resorption is completed when extraction comes in the physiological process of the tooth, (11,18). It is not possible to say a net number in the study for the local and topical and applications in physiological extractions due to the fact that information-processing automatically combined all deciduous molar extractions with regional anesthesia. On the other hand, these extractions can be traumatic in children because a root resorption was not carried out in the early tooth extractions and because root divergence was rather high especially in the extractions of deciduous molar teeth (6,19,20). While local anesthesia is a frightening and worrisome situation, it is a process in which the development of a fear of dental physicians is expected in the future of the children after this type of extraction (21). The child could abandon the clinic without having the extraction because of fear they experienced during the application of anesthesia or the operation was carried out by keeping them in the chair with the insistence and consent of the parent. The trauma that a child experiences and in future dental treatments can be

evaluated in terms of dental physician fear (21). In contrast, it was reported in another study that the canine tooth extractions of children between the ages of 7-9 would not create dental fear (22). Dental fear that might form during or after the extractions of child patients and the period of time that the child stays in the chair could have been evaluated separately within the limitations of the study. Because the study was retrospective, a dental anxiety evaluation was not performed.

In a study that Sjögren et al. did, they concluded that it would be more appropriate for pain control to have one tooth extracted per visit (22). During extraction, regional infection or complete drowsiness is expected in children. However, the feeling of pressure during extraction can be perceived as pain in children. It was observed in the current study that more than one tooth was extracted in one session from the same patient and that the ratio of patients to extracted teeth was a little more than 1:2. Therefore, pain should also be included in the work during the application of injection in addition to the feeling of pressure in extraction in patients because the application of anesthesia is done at the same rate.

Among the reasons for early deciduous tooth extractions, especially parental unawareness and acting with the belief that the tooth will come again from underneath raise the number of extractions. In general, it is shown in studies that the reason that holds the highest level of the reasons for extraction, especially for small children, is decay and eating and associated sleep problems. Whether or not the complaint of pain remains behind these reasons (15,20).

The lack of a pedodontist in the faculty of the study also suggests that the inability to reach the specialist guidance service for infant and canal treatment of child patients considerably increases the number of early extraction. Due to parents socioeconomic status and unconsciousness, guidance to another center is not always welcomed, which forms the main reason for early extraction in current studies.

As a result, in early-age extraction fall into deciduous teeth extraction. The formation of examination and treatment protocol of pedodontist specialists in child patients, the easier provision of access to pedodontists, and parental awareness can significantly decrease the number of early extractions. In terms of surgery, early molar tooth extraction can be a very annoying situation for both the patient and the physician. Single tooth extraction in one session of early extraction should be addressed in terms of pain felt in anesthesia and shorter processing time, and it should be taken into account that it will cause less trauma for the child.

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