RESEARCH ARTICLE / *Araştırma Makalesi*

Parenteral Satisfaction After Dental Rehabilitation Under General Anesthesia in Children

Çocuklarda Genel Anestezi Altında Diş Tedavileri Sonrası Veli Memnuniyeti

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Abstract

Objective The aim of this study was to investigate the satisfaction levels of parents whose children had been treated under general anesthesia (GA) for dental treatment, and to determine pre-treatment factors affecting satisfaction levels.

Materials and Methods A total of 230 children treated under GA with nasal intubation due to dental phobia/ anxiety, systemic disease or physical/ mental disabilities were included in the study. There were 13 questions in the questionnaire and the data were collected from the parents on the phone (minimum a month after GA) and the answers were recorded by the same pediatric dentist. For statistical analysis of the data, Chi square, T test and Spearman correlation tests were performed.

Results Patients sample was composed of 139 male and 91 female children with ages ranging from 1.5 to 18 years (mean age: 6.4 2.7 year). The distribution of the patients treated under GA had various systemic conditions; 58 children had mental disabilities, 150 were healthy (with dental phobia / anxiety) and 23 had systemic disorders. There was significant difference between parental satisfaction and difficulty of dental treatment under GA, prior information about dental treatment under general anesthesia, most of the parents were satisfied with their children's treatment under GA: 68.3% were very satisfied, and 30.3 % moderately satisfied. In addition, positive significant correlation was found between the number of unsuccessful clinical treatment experience of children and waiting periods / satisfaction status of GA.

Conclusion The level of parental satisfaction about dental care under GA in children was high. As reported by parents, dental fear was the most important reason of GA use is dental treatment. In children, this fear should always be correctly diagnosed and prevented. Dental treatments under GA should be resorted to only when absolutely necessary.

Keywords General Anesthesia, Parental Notification, Pediatric Dentistry

Özet

Amaç *Bu çalışmada, çocukları genel anestezi (GA) altında diş çürüğü nedeniyle tedavi gören ebeveynlerin memnuniyet düzeylerinin araştırılması ve memnuniyet düzeylerini etkileyen tedavi öncesi faktörlerin belirlenmesi amaçlanmıştır*

Materyal ve Metod *Çalışmaya genel anestezi altında nazal entübasyonla dental tedavileri yapılan dental fobi/anksiyete, sistemik hastalık ve fiziksel/ mental engele sahip 230 çocuk dahil edildi. 13 sorudan oluşan anketteki sorular hasta ebeveynleri ile telefonla konuşularak yöneltildi (genel anesteziden en az bir ay sonra) ve cevaplar aynı pedodontist tarafından kaydedildi. Verilerin istatistiksel analizi için ki-kare, T testi ve Spearman korelasyon testleri yapıldı.*

Bulgular *Bu çalışmaya dahil edilen hastalar, yaşları 1.5 ile 18 arasında (ortalama yaş: 6.4 2.7 yaş) değişen 139 erkek ve 91 kız çocuğundan oluşuyordu. GA altında tedavi edilen hastaların sistemik durum dağılımları; 58 mental engelli, 150 sağlıklı (dental korku/ anksiyete) ve 23 sistemik hastalıklı şeklindeydi. Ebeveyn memnuniyeti ile GA altında yapılan tedavilerin zorluk derecesi ve GA hakkında velilerin başlangıç bilgi düzeyleri arasında anlamlı farklılık tespit edildi. Ebeveynlerin büyük bir çoğunluğu çocuklarının GA altında tedavi edilmesinden memnundu: %68.3 çok memnun ve %30.3 orta derecede memnundu. Ayrıca, çocukların başarısız tedavi deneyimi ile GA için bekleme süresi ve memnuniyet durumu arasında pozitif yönde anlamlı korelasyon tespit edildi.*

Sonuç *Çocuklarda GA altında diş bakımı konusunda ebeveyn memnuniyeti düzeyi yüksekti. Ebeveynler tarafından bildirildiği gibi, GA kullanımının en önemli yan etkisi diş korkusudur. Çocuklarda, bu korku her zaman doğru bir şekilde teşhis edilmeli ve önlenmelidir. Genel anestezi altında diş tedavileri, ancak kesinlikle gerekli olduğunda yapılmalıdır.*

Anahtar Kelimeler *Genel Anestezi, Ebeveyn Bildirimi, Çocuk Diş Hekimliği*

INTRODUCTION

Dental caries is one of the most common bacterial infections in dentistry. When decay is untreated, many serious consequences such as pain, dental infection, early teeth loss and malocclusion may be encountered. Thus, more comprehensive, difficult and expensive treatments may be needed.[1]

In general, caries-induced pain is the most common reason for dental treatment. And this pain leads to overall health problems such as loss of appetite, malnutrition and weight loss.[2,3] In such cases, dental treatment can be very difficult especially in pediatric patients. In order to ensure cooperation of the child in dental treatments behavioral guidance techniques are frequently used.[4]

In pediatric dentistry behavioral guidance techniques are frequently used the cooperation of the child in dental treatments.[5-7] However, in children with small age, physical disabilities, mental retardation, systemic diseases, these techniques are useless.[8] Especially, it is difficult for dentists to treat children with special needs due to so many caries.[9] Also, anxiety could create quite challenging conditions in dental treatments. When non-pharmacological methods are failed, GA may be necessary for a safe, efficient and effective dental treatment.[10-12] Children with small age, rampant caries requiring multiple restorations and extractions, severe anxiety/ phobia, physical and mental impairment are the conditions in which GA may be required.[11] Full-mouth rehabilitation in one single appointment and providing instant relief of pain are the important advantages of dental treatment under GA. Thus, by this way the child's quality of life could be improved very quickly.[13,14] Additionally, parents' satisfaction with treatment process and outcome, are the further benefits of the method. In different studies, patients' satisfaction about the treatment under GA was evaluated with several questionnaires.[15-17]

In this study, it was aimed to investigate the satisfaction levels of parents whose children had been treated under GA for tooth decay, and to determine pre-treatment factors affecting satisfaction levels.

METHODS

This study was approved by the Ethics Review Board of the Medical Faculty of XXXXX University (2018-328).

A total of 230 children (could not be treated in the clinic using behavioral guidance techniques) with dental phobia/ anxiety, systemic disease and physical/ mental disabilities treated under GA with nasal intubation were included in the study. DMFT/ dmft values of the children and the procedures performed under GA were recorded. A questionnaire with 13 questions was prepared by the researchers based on previous studies (Table I)[18,19] and the data was collected by talking to the patients' parents on the phone (minimum a month after treatment) and the answers were recorded.

For statistical analysis of the data, Chi square, T test and Spearman correlation tests were performed with IBM SPSS 23; SPSS Inc., Chicago, IL, USA. p-value <0.05 was accepted as statistically significant.

RESULTS

The patients' sample was composed of 139 male and 91 female children. The mean age (SD) was 6.4 2.7 years, ranging between 1 year 6 months and 18 years. Also mean number of (SD) dft was 6.4 and DMFT was 6.

Based on the questionnaire, the response rates of the parents and p values for each criterion are shown in Table 1. Table 2 presents the distribution of treatments provided under GA. Extraction and pulpectomy were the most common procedures. And also, systemic conditions of pediatric patients in the study are shown in Table 1. According to this, 64.9% of patients had dental treatment under GA due to uncooperation. The remaining 25.1% was due to disabilities and 10% was due to systemic conditions.

Table 1. Comparison of Patients' Satisfaction Criteria.		
Variables	n(%)	P values
Reason of dental treatment under general anesthesia	23 (10%)	.453
Systemic disease	150 (64.9%)	
Uncooped	58 (25.1%)	
Disabled		
First unsuccessful dental treatment place	35 (15.2%)	.559
Private clinics	57 (24.7%)	
Public hospitals	139 (60.2%)	
Faculty of dentistry		
Number of unsuccessful treatment experiences	19 (8.2%)	
No clinical treatment experience	85 (36.8%)	.073
Once	86 (37.2%)	
Two times	30 (19.3%)	
Three times		
Urgent treatment need	150 (64.9%)	.562
Yes	81 (35.1%)	
No		
The degree of difficulty of urgent dental treatment	80 (34.6%)	.274
Very difficult	138 (59.4%)	
Difficult	11 (4.8%)	
Easy	2 (0.9%)	
Very easy		
Reasons for previous failed treatments	31 (13.4%)	.111
Pain	6 (2.6%)	
Poor communication	146 (63.2%)	
Dental fear	10 (4.3%)	
Traumatic experience	20 (8.7%)	
Other causes		
Familial experience	9 (3.9%)	.203
Yes	221 (95.7 %)	
No		
Difficulty of dental treatment under general anesthesia	12 (5.2%)	.011*
Very difficult	70 (30.3%)	
Difficult	134 (58%)	
Easy	15 (6.5%)	
Very easy		
Waiting time for dental treatment under general anesthesia	92 (39.8%)	.141
Less than a month	72 (31.2%)	
One to three months	39 (16.9%)	
Four to six months	28 (12.1%)	
More than six months		
Information about dental treatment under general anesthesia	191 (82.7%)	.015*
Yes	40 (17.3%)	
No		

*Statistically significant difference p<0.005

Table 2. Average Distribution of Treatment Types Provided under General Anesthesia.		
	Mean±SD	Range
Extraction	6.3±4.7	0-20
Filling	1.4±3.4	1-17
Pulpotomy	2.4±1.1	1-3
Pulpectomy	6.6±0.6	1-5

According to parental reports, almost one third of the patients had two unsuccessful dental treatment experiences (37.2 %), and the procedures were largely done in a university hospital (60.2 %). It was also found that 64.9 % of the patients needed urgent dental treatment. And this clinical dental treatment experience was expressed as 'difficult' by the parents.

Dental fear (63.2%) and pain (13.4%) were reported as the most important reasons for previous treatment failures.

Almost all parents (95.7%) had no GA experience before. This first dental treatment experience under GA was expressed as easy by the majority of parents (58%). There was a statistically significant difference between difficulty of dental treatment under GA and satisfaction level (p:011). Most of the parents (82.7%) reported that they had received prior information about dental care under GA before. There was a statistically significant difference between prior knowledge about dental treatment GA and satisfaction level (p: 0.015). Waiting time before general anesthesia was shorter than one month for 39.8 % of patients. In addition, positive significant correlation was found between the number of unsuccessful treatment experience of children and waiting periods / satisfaction status of GA (Table 3).

Table 3. Spearman Correlation Test Results of Patient Satisfaction Status between the Number of Unsuccessful Treatment Experience and Waiting Periods before General Anesthesia.		
	satisfaction status	waiting periods
unsuccessful treatment experience	p=0.028* r=0.144	p=0.001* r=0.217
*Statistically significant difference p<0.005		

There was no significant difference between other variables and patients' satisfaction degree according to chi-square and T test.

DISCUSSION

Early childhood caries is the most common dental disease in pre-school children. This process progresses painfully and progressively. Also, negatively affects the development especially in children younger than 6 years.[15, 20-24]

Although pediatric dentists try to prevent tooth decay with preventive treatments, the rate of decay in children is still quite high, especially in developing countries. Primary teeth are important for proper feeding, speaking, functioning as a space maintainer for permanent teeth and aesthetics.[25] In recent years, dental treatment under GA is often preferred in children who have had many unsuccessful dental treatment experiences for such reasons as dental anxiety, disability, small age or systemic disorders.[7]

Dental treatment under GA provides qualified efficient and effective treatment.[26] By this way, the quality of life of the child could be increased. In addition, providing a qualified treatment in a single appointment could be specified as a further benefit of GA. In different studies, the satisfaction of parents about the treatment under GA was evaluated with several questionnaires.[15,19,27] Also, in this study we used a questionnaire to determine the level of parental satisfaction after dental treatment under GA.

The questionnaire was filled by a single investigator by telephone to make sure that all the questions are answered. In order to eliminate early objective, non-objective feedbacks, a minimum of one-month follow-up time was waited.[28]

In other study similar to our study, the minimum patient age was higher (minimum 4 years old).[18] In our study, most of the sample group was composed of healthy children and minimum patient age was 1.5. The percent of children received GA due to lack of cooperation (because of young age) was quite high.

In children with dental anxiety, the dentist's approach and clinical environment are important factors for exceeding the dental fear. In our study, it was reported by the 60.2% parents that the first unsuccessful treatment experience of their child was in dentistry faculty. And only 15.2% unsuccessful experience was in private clinic. The reasons for unsuccessful treatment in dentistry faculties were thought to be; the faculties were not be able to provide appropriate clinical conditions or adequate time could not be allocated due to high number of patients in need of treatment.

According to the parents, dental fear (63.2%) was the most important reason for treatment failures, followed by pain (13.4%). These results of present study were consistent with the study of Savanheimo et.al.[18] In a similar study, Chao et al. stated that, 95.1% of 659 children were treated under GA due to dental fear.[16]

Savanheimo et al.[18] reported that, 32% children had undergone four or more previous unsuccessful dental visits. According to the results of our questionnaire, 19.3% of the children had also undergone three unsuccessful dental visits. The faculty of dentistry in which the study was conducted was highly developed in terms of operating room conditions, equipment and qualified personnel. Since dental phobia may develop as a result of repeated unsuccessful dental treatments, dental treatment under GA was preferred after a maximum of three failed treatments.

Emergency dental treatment was needed in 64.9% of the children. This high rate was inconsistent with a previous study probably because the families in our study population does not care about the routine dental visit owing to low socioeconomic status and insufficient awareness of oral health.[18]

According to the thesis of Luong29, 83% of children had

never experienced dental treatment under GA before. As in the world, dental treatment under GA in children not has a long history in our country. The dental medicine faculty where the present study was carried out, provides dental treatment services under GA for about 3-4 years. Since GA was not available in the city in the past years, dental treatments were only be performed in clinical conditions. For this reason, 95.7% of the participants reported that they did not have previous experience with dental treatment under GA.

Dental treatment under GA was reported "easy" by the 58% parent, and this result was considerably lower than other studies.[18,19] There was a common fear of GA in parents due to the insufficient knowledge about this process. Although the prior information about GA and dental treatments were given to the parents before the treatment, the parents were very anxious before the procedure. It was estimated that differences in GA knowledge and fear level in parents caused different results in the studies.

According to survey results, while 72 (31.2%) patients waited for one to three months to be treated with GA, 92 patients (39.8%) waited less than one month. Although dental treatment procedures under GA in our faculty had been put into practice in recent years, physical hospital conditions and the number of personnel had been regulated to satisfy expectations taking into consideration the number of patients referred. So, waiting times for dental treatment under GA were quite short in the study.

Prior to 1988, the parental satisfaction with regard to dental treatment under GA was not assessed. First, in 1988, Ready et al.[30] studied this topic and stated that parental satisfaction was as high as 97%. Also, Acs et al.[15] reported that the satisfaction of the parents (400 parents) of children who underwent GA was high. All the parents who participated in the study of White et al.[31] stated that they were satisfied with dental treatment under GA. According to the results of the study with Saudi parents, 99.14% of the families expressed satisfaction with the dental treatment under GA.[32] The results of these studies were consistent with our study results. Our study indicated that 97.9% parents were satisfied with this treatment method.

The satisfaction criteria of parents for their children' dental treatment under GAmight differ from each other. In addition to parental satisfaction, feedback of children received dental treatment under GA was also very important. These were the limitation of our study. However, when the results were evaluated, high satisfaction in parents was notable. Long-term repetitive evaluations were required to determine whether the treatment satisfaction was real.

CONCLUSIONS

According to the results of this study, parents were highly satisfied with the dental treatment of their children under GA. The satisfaction of the parents could enhance the cooperation and mutual trust between the dentist and the family in the long term. Nevertheless, it should also be remembered that dental treatments under GA should be resorted to only when absolutely necessary.

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CONFLICTS OF INTEREST

The authors report no conflicts of interest related to this study.

Kaynaklar

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