JKAU: Med. Sci., **Vol. 20** No. 3, pp: 3-16 (2013 A.D. / 1434 A.H.)
DOI: 10.4197/Med. 20-3.1

The Effect of Preformed Metal Crowns on Primary Molars' Exfoliation Time

Omar A. El Meligy[1,2], BDS, MSc, PhD, **Nermeen H. Alhosini**[1], BDS, and **Sara M. Bagher**[1], BDS

[1]*Department of Preventive Dental Sciences, Division of Pediatric Dentistry, Faculty of Dentistry, King Abdulaziz University, Jeddah, Saudi Arabia,*
[2]*Faculty of Dentistry, Alexandria University, Alexandria, Egypt*
omeligy@kau.edu.sa

Abstract. Many factors contribute to the exfoliation of teeth. However, none of the local factors mentioned in the literature was the quality of coronal restorations. The aim of this research was to study the relation between restoring primary molars with preformed metal crowns and exfoliation process. Five hundred and fifty dental records of healthy children undergoing comprehensive dental treatment at the Faculty of Dentistry, King Abdulaziz University hospital in Jeddah were reviewed. Out of the 550 reviewed dental records, 140 records satisfied the inclusion criteria. Exfoliation time was recorded as on time, early or late. Undesirable exfoliation time was shown in 39 (27.9%) of the crowned primary molars (experimental) group compared to zero (0.00%) of primary molars in the control group. There was a statistically significant difference between both groups regarding the exfoliation time. However, within the experimental group, a relationship between crowned primary molars with pulp therapy or crowned primary molars without pulp therapy and exfoliation time was reported. This study showed no statistically significant difference between both groups, respectively. Our data suggest that preformed metal crowns might affect the exfoliation time of primary molars by either accelerating or delaying exfoliation.

Keywords: Preformed metal crowns, Stainless steel crowns, Primary molars, Exfoliation time.

Correspondence & reprint request to: Prof. Omar A. El Meligy
P.O. Box 80209, Jeddah 21589, Saudi Arabia
Accepted for publication: 24 February 2013. Received: 13 October 2012.

Introduction

Primary teeth exfoliation is a physiologic phenomenon. Histological changes associated with the process of shedding in human beings have been well documented in the literature[1,2].

Odontoclasts are responsible for the resorption of dental hard tissue[1,2]. The dental pulp of resorbing deciduous tooth contains an elaborate network of blood vessels. The richly vascularized and innervated connective tissue of dental pulp is able to respond dentinal injuries, even when it is not directly stimulated[3]. The time-related histologic changes in this process have been documented, and it has been shown that the odontoclastic resorption of coronal dentin takes place just before shedding [2]. Miura *et al.*[4] demonstrated multipotent stem cell population in dental pulps of exfoliated human deciduous teeth. This important discovery might lead to the assumption that the structural integrity of exfoliating deciduous teeth pulp reflects an active role in the physiologic root resorption process[5].

Generally, the timing of exfoliation of primary molars is influenced by different variables such as hereditary and environmental factors, endocrine reactions, and finally, nutrition and some local factors[6]. Pulpal and pericoronal inflammation are among the most contributing local factors[7]. However, none of the local factors mentioned in the literature was the quality of coronal restorations; especially preformed metal crowns.

Since the 1950's, preformed metal crowns have been widely used restoration for the treatment of badly decayed primary molars[8,9]. Previous literature has described the different makes of the crowns, various clinical conditions and uses, longevity of restorations, failure rates, gingival and periodontal health around preformed metal crowns, effect on first permanent molars, age of placement, superiority to other plastic restorations[10].

Although all evidence proves that preformed metal crowns are the best restorations for primary molars with pulp therapy[11], until now no studies were performed to address the effect of preformed metal crowns on the exfoliation time of the crowned primary molars.

Research so far has only shown that primary molars with pulp therapy have a tendency to exfoliate on time or earlier and do not appear to have any adverse effect on succedaneous tooth formation[12-15].

Aim of the Study

The aim of this research was to study the relation between restoring primary molars with preformed metal crowns and exfoliation process.

Materials and Methods

Study Design

A historical cohort study and follow up examination.

Subjects

Five hundred and fifty dental records of children undergoing comprehensive dental treatment at the Faculty of Dentistry, King Abdulaziz University hospital in Jeddah were reviewed by a single examiner who was a faculty staff member (Kappa: 0.98). The children had dental rehabilitations between 2003 and 2007. The dental rehabilitation was performed by pediatric dentistry residents in pediatric dentistry comprehensive care clinics under the direct supervision of the attending faculty staff members.

Selection criteria for inclusion in the study were:

1 Healthy children.

2 The children were between 4 and 7 years of age when the preformed metal crowns (3M ESPE, St. Paul, MN USA) were placed.

3 Each child had at least one primary molar restored with a preformed metal crown and a sound (unaffected by caries and not restored) contra lateral primary molar (If we select a crowned first primary molar on one side, a sound first primary molar on the contra lateral side was also selected as a control. The same applies for the second primary molar).

4 Only the crowned primary molars that were found to be clinically and radiographically, well adapted and clear from any signs of infection were included in the study.

A verbal informed consent was obtained from the parents before clinical examination of their children. This study was conducted in compliance with all policies of appropriate patient care at King Abdulaziz University. The ethical committee of Preventive Dental Sciences Department at the Faculty of Dentistry, King Abdulaziz University approved the research protocol. Recalled children were provided with topical fluoride gel (MEDICOM, Denti-Care, Canada) application and oral hygiene instructions and referred for dental treatment if needed.

Methods

Dental Record Review

Demographic data, information of each child medical history, date of the dental rehabilitation and the type of dental procedure performed were recorded from the child dental record. Out of the five hundred and fifty reviewed dental records, 140 records satisfied the inclusion criteria.

Clinical and Radiographic Examination

After reviewing of the dental records, the selected children were recalled, and the crowned primary molars were examined both clinically (visually and with a mirror and explorer) and radiographically[16] [periapical radiographs (Kodak, Carestream Health, Inc., Rochester, NY USA)] using the XCP (Dentsply RINN, Elgin, IL USA) extension cone paralleling technique[17]. The following clinical parameters were recorded: (1) Crown marginal adaptation was measured at buccal and lingual walls and was either good with sealed margins or poor when the explorer detected an open margin[18], (2) Proximal contact area between the first and second primary molars was recorded as intact or open by passing a dental floss. When the neighboring tooth was not present this criterion was ignored [19]. (3) Presence of swelling or mobility. Mobility is graded clinically by holding the tooth firmly between the handles of two metallic instruments, and an effort is made to move it in all directions. Abnormal mobility often occurs buccolingually and is graded according to the ease and extent of tooth movement[20], and (4) Oral hygiene was determined using simplified Green and Vermillion oral hygiene index[21]. This was based on the 6 surfaces scored from 4 posterior and 2 anterior teeth and scores were recorded as follows: 0 = no debris, 1 = soft debris covering less than one third of tooth surface, 2 =

soft debris covering more than one third but not more than two thirds of tooth surface, 3 = soft debris covering more than two thirds of tooth surface. Oral hygiene was referred to as: Good for score 0 to < 1, Fair for score 1 to < 2, Poor for scores 2 – 3. The following radiographic criteria were viewed: (1) Extension and adaptation of crown margins. Crowns were considered inadequate when crown margins appeared too short or extend below the cemento enamel junction or away from tooth surface by a distance of more than one mm or when any critical defects in the crown were detected[22], (2) Pathological external or internal root resorption. Radiolucency is observed in the external root surface of the dentin and adjacent bone, or in the internal root canal dentinal walls[23], (3) Periapical or furcational radiolucency, and (4) Congenitally missing permanent premolars.

Exfoliation Criteria

The children included in the study were recalled periodically every 6 months to record the timing of exfoliation of both the crowned and the sound contra lateral primary molars. The exfoliation time of both the crowned and the sound contra lateral primary molars was recorded [on time (9-13 years)[24], early (< 9 years) or late (> 13-14years) exfoliation].

Statistical Analysis

All of the data were collected, tabulated and statistically analyzed using SPSS (statistical package for social sciences version 13). Fisher exact test was used in case of small cell frequencies. Stepwise logistic regression model was used to assess the relationship between preformed crowns with pulp therapy and early exfoliation, controlling for demographic data (age, sex). Odds ratio was used as a descriptive statistic and was calculated. The level of significance used was < 0.05.

Results

From the entire group of dental records that were reviewed, 140 records met the inclusion criteria. This comprised 25.5% of the records (n = 550). The children were examined by the same examiner and the result was found to be 0.98 according to Cohen's Kappa coefficient.

The results showed that in the control group, 140 (100%) primary molars were reported to exfoliate on time (desirable), while only 101

(72.1%) primary molars of the experimental group exfoliated on time. None of the primary molars in the control group were reported to exfoliate early or late (undesirable), while 20 (14.3%) primary molars in the experimental group exfoliated early and 19 (13.6%) primary molars exfoliated late.

Table 1 illustrates the numbers of primary molars covered with preformed metal crowns in comparison to the contra lateral sound molars with respect to their exfoliation time.

There was a statistically significant difference between the experimental and control groups ($p < 0.001$) regarding the exfoliation time. The value of the odds ratio showed that primary molars covered with preformed metal crowns have significantly high risk of both early and late exfoliation.

Table 1. Comparison between experimental and control groups with respect to exfoliation time.

Timing of Exfoliation	Experimental (preformed metal crowns on primary molars)		Control (sound primary molars)		p-Value	OR†	95% CI‡
	No.	Percent	No.	Percent			
On time	101	72.1	140	100	< 0.001*		
Early	20	14.3	0	0		56.75	3.39 - 949.35
Late	19	13.6	0	0	< 0.001*	53.99	3.22 - 904.58
TOTAL	**140**	**100**	**140**	**100**			
Desirable§	101	72.1	140	100	< 0.001*		
Undesirable‖	39	27.9	0	0		109.35	6.64 – 1800.11
TOTAL	**140**	**100**	**140**	**100**			

** p-value is significant at < 0.05 level.*
† Odds Ratio
‡ Confidence Interval
§ Between 9-13 years of age.
‖ < 9 or > 13 years of age.

The experimental group (primary molars covered with preformed metal crowns) was further divided in two main subgroups; primary molars covered with preformed metal crowns and had pulp therapy n = 66 (47.14%) and primary molars covered with preformed metal crowns and did not have pulp therapy n = 74 (52.85%). The group of crowned primary molars with pulp therapy was further divided into three subgroups regarding their exfoliation time (on time, early and late). Forty three (65.2%) primary molars were found to exfoliate on time

(desirable), while 14 (21.2%) exfoliated early (undesirable) and 9 (13.6%) exfoliated late (undesirable).

On the other hand, regarding the group of crowned primary molars with no pulp therapy, 58 (78.4%) primary molars exfoliated on time, while 6 (8.1%) exfoliated early and 10 (13.5%) exfoliated late.

Table 2 illustrates the numbers of primary molars covered with preformed metal crowns and had pulp therapy, in comparison with primary molars covered with preformed metal crowns and did not have pulp therapy with respect to their exfoliation time.

Table 2. Comparison between crowned primary molars with pulp therapy and primary molars without pulp therapy with respect to their exfoliation time.

Timing of Exfoliation	Preformed metal crowns on primary molars with pulp therapy		Preformed metal crowns on primary molars without pulp therapy		p-Value	OR†	95% CI‡
	No.	Percent	No.	Percent			
On time	43	65.2	58	78.4		1.00	-
Early	14	21.2	6	8.1	0.025*	3.15	1.12 – 8.86
Late	9	13.6	10	13.5	0.699	1.21	0.45 – 3.24
TOTAL	**66**	**100**	**74**	**100**			
Desirable§	43	65.2	58	78.4	0.060	1.00	-
Undesirable‖	23	34.8	16	21.6		1.94	0.92 – 4.11
TOTAL	**66**	**100**	**74**	**100**			

** p-value is significant at < 0.05 level.*
† Odds Ratio
‡ Confidence Interval
§ Between 9-13 years of age
‖ < 9 or > 13 years of age

No statistically significant difference between crowned primary molars with pulp therapy and crowned primary molars without pulp therapy, and exfoliation time was found (p=0.060). The value of the odds ratio showed that crowned primary molars with pulp therapy have significantly higher risk of early (p = 0.025), but not of late (p = 0.699) exfoliation. More primary molars covered with crowns without pulp therapy exfoliated on time in comparison with crowned primary molars with pulp therapy. A higher percentage of crowned primary molars with pulp therapy exfoliated earlier, than the crowned primary molars without pulp therapy. The percentage of the crowned primary molars that

exfoliated late was almost equal between the primary molars with pulp therapy, and without pulp therapy in the experimental group.

Table 3 illustrates stepwise logistic regression of the effect of pulp therapy on early exfoliation of crowned primary molars.

After controlling of the demographic data (age, sex), the crowned primary molars with pulp therapy showed higher risk of early exfoliation (OR = 3.05, 95 %; CI = 1.10-8.48) compared to crowned primary molars without pulp therapy.

Table 3. Stepwise logistic regression of the effect of pulp therapy on early exfoliation of crowned primary molars.

Variable	B*	Wald	p-Value	OR‡	95% CI§
Constant with pulp therapy	1.116 -2.428	4.575 32.496	0.032† 0.000	3.05	1.10 – 8.48

Model X^2 = 4.97 (p = 0.026)
**Regression coefficient*
†p-value is significant at < 0.05 level.
‡Odds Ratio
§Confidence Interval

Discussion

The results of the current study revealed that undesirable exfoliation time (either early or late) was shown in thirty nine (27.9%) of the crowned primary molars (experimental) group compared to zero (0.00%) of primary molars in the control group.

The present study focused on the effect of preformed metal crowns on the time of exfoliation of the primary molars. There was no study in the literature that addressed this relationship before. However, pulp therapy impact on exfoliation time of primary molars has been reported by many studies. Primary molars with pulp therapy showed a tendency to exfoliate on time or earlier and do not appear to have any adverse effect on succedaneous tooth formation[12-15,25-27]. In the current study, pulp therapy of the crowned primary molars was taken into consideration.

The present data showed that 72.1% of crowned primary molars exfoliated on time (desirable), while 14.3% exfoliated early (undesirable) and 13.6% exfoliated late (undesirable).

Causes of early exfoliation of crowned molars could be due to: Recurrent infection; failure of underlying pulp therapy; internal resorption; alveolar abscess and subsequent extraction or normal genetic variation in the shedding of primary molars and subsequent eruption of permanent premolars[28].

Late exfoliation or over retained primary molars were seen. A likely reason could be related to poorly adapted crown margin[10], excess cements, poor oral hygiene or bulky amount of cement contained in the pulp chamber of pulpotomized teeth[29]. Even though the material is resorbable, its resorption is slowed significantly when large quantities are present[27].

It is interesting to note from the results of the present study that the majority of the crowned primary molars exfoliated on time [43 (65.2%) crowned primary molars with pulp therapy compared with 58 (78.4%) crowned primary molars without pulp therapy] (desirable). However, 23 (34.8%) crowned primary molars with pulp therapy and 16 (21.6%) crowned primary molars without pulp therapy did not exfoliate on time (undesirable). This result was in agreement with several studies that found that primary molars treated with pulpotomy significantly showed on time or earlier exfoliation patterns[11,12,25,30,31].

Despite this, even though exfoliation time is affected, it is still highly recommended that pulpotomized teeth should be covered with preformed metal crowns.

Success rates of pulpotomy in human primary molars are not consistent with the final restoration used as reported in the literature [32]. In some studies, the molars were restored exclusively with preformed metal crowns[33-37] while others used amalgam[38, 39] and still others used either type of restoration[40, 41]. These studies, however, concentrated on the effect of the dressing material and did not assess the role of the final coronal restoration in the success rate of pulpotomy as our study did[33].

The present study design had the following limitations:

1. The preformed metal crowns were performed by different pediatric dentistry residents.
2. Difficulty in the radiographic assessment of root resorption of primary molars.
3. Variable length of follow-ups between children.

Therefore, our recommendation is to use controlled clinical trials with longitudinal follow-up periods.

Conclusions

Despite the high percentage (72.1%) of the crowned primary molars that exfoliated on time, there was a statistically significant difference between experimental and control groups with respect to undesirable exfoliation time. Crowned primary molars with pulp therapy were found to have a more undesirable effect on the exfoliation time than crowned primary molars without pulp therapy; there was no statistically significant difference between both groups. Our data suggest that preformed metal crowns might affect the exfoliation time of primary molars by either accelerating or delaying exfoliation.

References

[1] **Sasaki T, Takahashi N, Watanabe G, Suzuki H, Higashi S, Suda T**. Cytodifferentiation of odontoclasts in physiologic root resorption of human deciduous teeth. In: Davidovitch Z, eds. The biological mechanisms of tooth eruption and resorption. Birmingham (AL). EBSCO. Media, 1988. 321-328.

[2] **Sahara N, Okafuji N, Toyoki A, Suzuki I, Deguchi T, Suzuki K**. Odontoclastic resorption at the pulpal surface of coronal dentin prior to the shedding of human deciduous teeth. *Arch Histol Cytol* 1992; **55**(3): 273-285.

[3] **Okiji T, Jontell M, Belichenko P, Bergenholtz G, Dahlström A.** Perivascular dendritic cells of the human dental pulp. *Acta Physiol Scand* 1997; **159**(2): 163-169.

[4] **Miura M, Gronthos S, Zhao M, Lu B, Fisher LW, Robey PG, Shi S.** SHED: stem cells from human exfoliated deciduous teeth. *Proc Natl Acad Sci USA* 2003; **100**(10): 5807-5812.

[5] **Yildirim S, Yapar M, Sermet U, Sener K, Kubar A**. The role of dental pulp cells in resorption of deciduous teeth. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2008; **105**(1): 113-120.

[6] **Nystrom M, Peck L**. The period between exfoliation of primary teeth and the emergence of permanent successors. *Eur J Orthod* 1989; **11**(1): 45-51.

[7] **Peedikayil FC**. Delayed tooth eruption. Review Article. *e-J Dent* 2011; **1**(4): 81-86.

[8] **ENGEL RJ**. Chrome steel as used in children's dentistry. *Chron Omaha Dist Dent Soc* 1950; **13**: 255-258.

[9] **HUMPHREY WP**. Use of chrome steel in children's dentistry. *Dental Survey* 1950; **26**: 945-949.

[10] **Croll TP, Epstein DW, Castaldi CR**. Marginal adaptation of stainless steel crowns. *Pediatr Dent* 2003; **25**(3): 249-252.

[11] **Kindelan SA, Day P, Nichol R, Willmott N, Fayle SA**. UK National Clinical Guidelines in Paediatric Dentistry: stainless steel preformed crowns for primary molars. *Int J Paediatr Dent* 2008; **18** Suppl 1: 20-28.

[12] **Loevy HT**. The effect of primary tooth extraction on the eruption of succedaneous premolars. *J Am Dent Assoc* 1989; **118**(6): 715-718.

[13] **Haralabakis NB, Yiagtzis SC, Toutountzakis NM**. Premature or delayed exfoliation of deciduous teeth and root resorption and formation. *Angle Orthod* 1994; **64**(2): 151-157.

[14] **Kurji ZA, Sigal MJ, Titley K**. A retrospective study of a modified 1-minute formocresol pulpotomy technique part 2: effect on exfoliation times and successors. *Pediatr Dent* 2011; **33**(2): 139-143.

[15] **Malekafzali B, Shekarchi F, Asgary S**. Treatment outcomes of pulpotomy in primary molars using two endodontic biomaterials. A 2-year randomized clinical trial. *Eur J Paediatr Dent* 2011; **12**(3): 189-193.

[16] **Sharaf AA, Farsi NM**. A clinical and radiographic evaluation of stainless steel crowns for primary molars. *J Dent* 2004; **32**(1): 27-33.

[17] **Rinn Corporation**. Intraoral Radiography with Rinn XCP/BAI Instruments. Elgin, Ill: Rinn Corporation; 1989.

[18] **Atieh M.** Stainless steel crown versus modified open-sandwich restorations for primary molars: a 2-year randomized clinical trial. *Int J Paediatr Dent* 2008; **18**(5): 325-332.

[19] **Fuks AB, Ram D, Eidelman E.** Clinical performance of esthetic posterior crowns in primary molars: a pilot study. *Pediatr Dent* 1999; **21**(7): 445-448.

[20] **George AK**. Tooth mobility. Review. *SRM University J Dent Sci* 2011; **2**(4): 324-327.

[21] **Greene JC, Vermillion JR**. The simplified oral hygiene index. *J Am Dent Assoc* 1964; **68**: 7-13.

[22] **Salama FS, Alowyyed IS**. Quality assessment of primary molar stainless steel crowns. *Dental News* 2001; **8**(2): 17-20.

[23] **Fuss Z, Tsesis I, Lin S**. Root resorption--diagnosis, classification and treatment choices based on stimulation factors. *Dent Traumatol* 2003; **19**(4): 175-182.

[24] **LOGAN WHG, KRONFELD R.** Development of human jaws and surrounding structures from birth to the age of fifteen years. *J Am Dent Assoc* 1933; **20**(3): 379-427.

[24] **Farooq NS, Coll JA, Kuwabara A, Shelton P**. Success rates of formocresol pulpotomy and indirect pulp therapy in the treatment of deep dentinal caries in primary teeth. *Pediatr Dent* 2000; **22**(4): 278-286.

[26] **Vij R, Coll JA, Shelton P, Farooq NS**. Caries control and other variables associated with success of primary molar vital pulp therapy. *Pediat Dent* 2004; **26**(3): 214-220.

[27] **Vargas KG, Packham B**. Radiographic success of ferric sulfate and formocresol pulpotomies in relation to early exfoliation. *Pediatr Dent* 2005; **27**(3): 233-237.

[28] **Morawa AP, Straffon LH, Han SS, Corpron RE**. Clinical evaluation of pulpotomies using dilute formocresol. *J Dent Child* 1978; **42**: 360-363.

[29] **Suri L, Gagari E, Vastardis H**. Delayed tooth eruption: Pathogenesis, diagnosis, and treatment. A literature review. *J Orthod Dentofacial Orthop* 2004; **126**(4): 432-445.

[30] **Starkey PE**. Treatment of pulpally involved primary molars. In: *Current Therapy in Dentistry*. McDonald RE, *et al*, eds. Vol **7**. St Louis MO: Mosby, 1980.

[31] **McDonald RE, Avery DR, Dean JA**. Treatment of deep caries, vital pulp exposure, and pulpless teeth in children. In: McDonald and Avery's Dentistry for the Child and Adolescent. Dean JA *et al*, eds., 9th ed. St Louis, Mosby, 2011.

[32] **Holan G, Fuks AB, Ketlz N**. Success rate of formocresol pulpotomy in primary molars restored with stainless steel crown vs. amalgam. *Pediatr Dent* 2002; **24**(3): 212-216.

[33] **Fadavi S, Anderson AW**. A comparison of pulpal response to freeze-dried bone, calcium-hydroxide, and zinc oxide-eugenol in primary teeth in two cynomolgus monkeys. *Pediatr Dent* 1996; **18**(3): 52-56.

[34] **Cotes O, Boj JR, Canalda C, Carreras M**. Pulpal tissue reaction to formocresol vs. ferric sulfate in pulpotomized rat teeth. *J Clin Pediat Dent* 1997; **21**(3): 247-253.

[35] **Fuks AB, Eidelman E, Cleaton-Jones P, Michaeli Y**. Pulp response to ferric sulfate, diluted formocresol and IRM in pulpotomized primary baboon teeth. *ASDC J Dent Child* 1997; **64** (4): 254-259.

[36] **Randall RC, Vrijhoef MM, Wilson NH**. Efficacy of preformed metal crowns vs. amalgam restorations in primary molars: A systematic review. *J Am Dent Assoc* 2000; **131**(3): 337-343.

[37] **Fuks AB**. Pulp therapy for the primary dentition. In: Pediatric Dentistry: Infancy through Adolescence. Pinkham JR et al, eds., 4th ed. Philadelphia, Saunders, 2005.

[38] **Browne RM, Tobias RS**. Microbial microleakage and pulpal inflammation: a review. *Endod Dent Traumatol* 1986; **2**(5): 177-183.

[39] **Holland I, Walls A, Wallwork M, Murray J**. The longevity of amalgam restorations in deciduous molars. *Br Dent J* 1986; **161**(7): 255-258.

[40] **Roberts JF, Sherriff M**. The fate and survival of amalgam and preformed crown molar restorations placed in a specialist paediatric dental practice. *Br Dent J* 1990; **169**(8): 237-244.

[41] **Turner JE, Anderson RW, Pashley DH, Pantera EA Jr**. Microleakage of temporary endodontic restorations in teeth restored with amalgam. *J Endod* 1990; **16**(1): 1-4.

أثر التاج المعدني مسبق التشكيل على وقت تبديل الضروس اللبنية

عمر عبد الصادق المليجى[1،2]، ونرمين هلال الحسينى[1]، وسارة مصطفى باغر[1]

[1]*قسم طب الأسنان الوقائى، كلية طب الأسنان، جامعة الملك عبدالعزيز*
جدة – المملكة العربية السعودية
[2]*كلية طب الأسنان، جامعة الاسكندرية،*
الاسكندرية – مصر

المستخلص. عوامل كثيرة تساهم فى تبديل الأسنان. لم يتم ذكر جودة الترميمات الإكليلية كأحد العوامل الموضعية فى المؤلفات العلمية. إن الهدف من هذا البحث هو دراسة العلاقة بين ترميم الضروس اللبنية بالتاج المعدني مسبق التشكيل وعملية التبديل. تم مراجعة ٥٥٠ سجلا طبيا لأطفال أصحاء خضعوا لعلاج أسنان شامل في كلية طب الأسنان بجامعة الملك عبد العزيز بجدة. من ضمن ٥٥٠ سجلا طبيا الذين تمت مراجعتهم، ١٤٠سجلا استوفو المعايير المدرجة. تم تسجيل وقت التبديل إلى (في الوقت المحدد ، مبكرة أو متأخرة). أظهرت الدراسة أن ٣٩ (٢٧,٩٪) من الأضراس اللبنية المغطاة بتاج معدني مسبق التشكيل قد تبدلت بوقت غير مرغوب فيه مقابل صفر (٠,٠٠٪) من الأضراس السليمة، حيث كان هناك فرق ملحوظ إحصائيا بين مجموعة الاختبار والمجموعة الضابطة بخصوص وقت التبديل. كما وجد ضمن المجموعة التي شملت الأضراس اللبنية المغطاة بالتيجان المعدنية مسبقة التشكيل عدم وجود علاقة مباشرة بين الأضراس

الأولية المعالجة عصبيا وبين الأضـــراس الأوليـــة ذات التيجـــان المعدنية وغير المعالجة عصبيا من حيث وقت التبديل ، حيـــث أن الاختبار لم يظهر فرقاً ملحوظاً إحصائيا بين المجمـــوعتين علـــى التوالي. البيانات المتوفرة لدينا تشير إلى أن التاج المعدني مـــسبق التشكيل قد تؤثر على وقت تبديل الأضراس اللبنية.