International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319 – 6505, Impact Factor: SJIF: 5.995
Available Online at www.journalijcar.org
Volume 6; Issue 4; April 2017; Page No. 3184-3186
DOI: http://dx.doi.org/10.24327/ijcar.2017.3186.0220

Research Article

DIFFERENT MODES OF MANAGEMENT OF ANTERIOR TEETH WITH EARLY CHILDHOOD CARIES

Sarah Banu and A. K. Shanmugaavel

Saveetha Dental College, Saveetha University, Chennai

A R T I C L E I N F O

Article History:

Received 5th January, 2017
Received in revised form 8th February, 2017
Accepted 22nd March, 2017
Published online 28th April, 2017

Key words:

Strip Crowns, Zirconia, Gropper's Appliance, Grasce Appliance

A B S T R A C T

The most common and recently advancing problem seen is the early childhood caries affecting the primary dentition due to various reasons. The most common reason being night-bottle feeding. The condition of the caries can become severe if left untreated and also the proper treatment will assure a healthy permanent dentition. There are several ways in which early childhood caries are treated depending upon the tooth structure remaining. The use of strip crowns, zirconia, posts and appliances like Gropper's appliance and Grasce appliance have shown to be very effective treatment.

INTRODUCTION

The most common problem faced by the children nowadays is multiple dental caries. The incidence of dental caries in children is increasing as rapid as dental caries in an adult patient. Simultaneously the need for its treatment is also increasingly important for the proper development and eruption of the permanent dentition. Early childhood caries are an increasing topic of concern among the population and various treatments have been implemented to manage this problem. Early childhood caries is the condition in which there is decay in more than one surface of a tooth or caries involving more than one teeth. Management of primary teeth is necessary since it will have an impact on the permanent dentition as well. The most common site of early childhood caries is labial or lingual surface of the teeth [1]. Grossly decayed teeth will lead to severe pain for the child which will eventually cause the child to stop eating thereby resulting in deficiency of essential minerals and vitamins for the child and cause malnourishment [2]. The most common cause of this severe condition in children is because of their habit of feeding in bottle at night and sleeping along with the bottle in their mouth throughout the night. The improper feeding habits have play a major role in causing early childhood caries. Various treatments have been introduced like the use of strip crown, use of appliances like Grasce appliance, use of posts and core etc. It is important that the affected dentition be treated on time since ignorance to this condition at an early stage might lead to severe decay of the teeth and later leading to severe complications in the dentition of the permanent teeth.

Corresponding author:* **Sarah Banu
Saveetha Dental College, Saveetha University, Chennai

Clinical Features

The upper anteriors are the first teeth to erupt and have the exposure of cariogenic substances for a long term and hence the most severely affected. The mandibular incisors are more resistant to decay, which may be due to their close proximity to the secretion area of the submandibular glands.The caries attack usually starts on the labial surface of the upper anterior incisors [3]. The lesions first start to appear as 'white spots' on the labial surface of the maxillary anterior teeth adjacent to the gingival margin, and start to spread to the maxillary molars, mandibular molars and, in rare cases, the mandibular incisors. The demineralised lesions may become frank lesions or caries within 6-12 months, causing cavities discoloured by yellow, brown, and even black stains [4].

Aetiology

Early childhood caries is an aggressive form of dental caries that begins on tooth surfaces which are usually not affected by decay, such as labial surfaces of maxillary incisors, in contrast to dental caries which usually involves plaque retentive area[1]. The use of the bottle, especially at bedtime, is believed to be associated with increased risk for caries, but this might not be the only factor in caries development in early childhood. Carious lesions are produced from the interaction of cariogenic microorganisms, fermentable carbohydrates, and susceptible tooth surface[5]. Breastfeeding is known to have many health benefits in the child but at the same time it is also stated that prolonged exposure of the enamel to the human

milk will cause changes in the enamel making it soft[6]. Dietary habits like high intake of sugary food and drinks is known to cause early childhood caries. It was found that children who did not have their teeth cleaned at bedtime had a higher risk of developing Early childhood caries [7]. The constant maintenance of fluoride in the oral cavity is important for enamel resistance, reducing the amount of minerals lost during demineralisation and accelerating remineralisation[8].

Management

Children affected by early childhood caries require treatment since the health of the primary dentition affects the condition of the permanent dentition as well. The treatment of early childhood caries is very important. Various treatments have been implemented torestore the normal functioning of the severely decayed teeth. Management involves both prevention and treatment of early childhood caries. The treatment required depends upon the severity of the decay where low risk might not require any restorative treatment but moderately and high risk will require the use of restorative therapy[6].

Crowns

Bonded Strip crowns are the most preferablerestorative treatment since it is more aesthetic [9-11]. This treatment requires the use of cellulite crowns which are chosen of the appropriate size and filled with composite after the preparation and etching of the tooth surface and placed over it. This treatment is very easy and is highly aesthetic. However, this treatment should be employed in the absence of saliva since saliva will interfere with the bonding of the material. The durability of the strip crowns is not as good as stainless steel crowns. There are various types of crowns also being used like cellulite crowns, pedo jacket, New millennium crown and some Stainless steel crowns with tooth coloured composites.The cellulite crowns were used before the use of strip crowns. The jackets used were similar to the cellulite crowns but with the tooth colouredcopolyester material along with the drawback that the material willmelt with the high speed used for trimming because of the copolyester present [12].

Stainless steel crowns was recommended by Humphrey and Engel in 1950 and encouraged by Mink and Bennett in 1968. It is advised in cases where there is decay in more than two surface of the tooth and usually used as a treatment for posterior teeth. It is having high strength and can be used for children with decay at a very young age for long term use. However, it cannot be used for the anterior teeth because of aesthetics. The latest one of the treatment is the use of the zirconia crowns. In cases of severely mutilated primary anterior teeth, rigid glass ionomer posts are placed over which zirconia crowns are fitted. It is very useful for a long-term and stable aesthetically [13].

Posts and crown restoration

In case of extensive crown destruction, intracanal posts wereused and the reconstruction of the crown was done with a suitable composite material [14]. This treatment was useful in cases when the remaining toothstructureis less than 2/3rd. The posts were placed on the remaining tooth structure andcrown build up is done withcomposite. Placement of posts will increase the retention tothe crown and hence long term prognosis.

Appliances

Gropers appliance is a paediatric partial bridge which is used for the replacement of premature lose of the anterior teeth in children. Gropers appliance is a space maintainer which will maintain the space for the permanent teeth when there is lose of teeth due to severe caries. This will restore the function as well as aesthetics. The anterior teeth areimportant for the proper development of speech since some of the phonic sounds require the lingual side of these teeth [15].

An other most successful treatment of the severely decayed anterior teeth is the use of Grasce appliance. Theses appliances are useful when the remaining tooth structure is less than 1/3rd. The fabrication of this appliance is very simple which makes its use more reliable for daily clinical practices and also giving great comfort and aesthetic to the child[16]. This appliance used custom made teeth for the incisors instead of pre-fabricated teeth which provides as an advantage.

Occlusal view of Grasce appliance

CONCLUSION

Treatment of the grossly decayed anterior teeth is necessary for aesthetics, speech and self-esteem of the child and most importantly for the healthy eruption and growth of the permanent teeth. Management of this is done with the help of several restorations, appliances and prosthesis. Prevention is more important than getting treatment hence maintenance of the oral health in primary dentition is as important as maintenance of the oral health in adults. Proper brushing and good dietary habits are the easy methods of prevention of early childhood caries. Most of the time ignorance becomes a major factor in the aggravation of such conditions. However it is never too late to get a proper treatment done for the several severe conditions.

References

1. Kelly M, Bruerd B. The prevalence of baby bottle tooth decay among two native American populations. *J Public Health Dent.* 1987; 47:94-7.
2. Clarke M, Locker D, BerallG, Pencharz P, Kenny DJ, *et al*. Malnourishment in a population of young children with severe early childhood caries. *Pediatr Dent.* 2006; 28: 254-259.
3. Yiu CK, Wei SH. Management of rampant caries in children. *Quintessence Int*. 1992; 23: 159-168.

4. Twetman S, Garcia-Godoy F, Goepferd SJ. Infant oral health. *Dent Clin North Am* 2000; 44:487-505.
5. Lee C, Rezaiamira N, Jeffcott E, Oberg D, Domoto P, Weinstein P. Teaching parents at WIC clinics to examine their high caries-risk babies. *J Dent Childr*. 1994; 61: 347-349.
6. HakanÇolak, Çoruh T. Dülgergil and Mehmet Mustafa Hamidi. Early childhood caries update: A review of causes, diagnoses, and treatments. *J Nat SciBiol Med*. 2013;4: 29-38.
7. Harris R, Nicoll AD, Adair PM, Pine CM. Risk factors for dental caries in young children: a systematic review of the literature. *Comm Dent Health*. 2004; 21:71-85.
8. Davies GN, Early Childhood Caries-a synopsis. Comm *Dent Oral Epidemiol*. 1998; 26: 106-16.
9. Webber DL, Epstein NB, *et al*. A method of restoring primary anterior teeth with the aid of a celluloid crown form and composite resins. *Pediatr Dent*. 1979; 1:244-246.
10. Croll TP. Bonded composite resin crowns for primary incisors: technique update. *Quintessence Int*. 1990; 21:153-157.
11. Ram D, Peretz B. Composite crown-form crowns for severely decayed primary molars: a technique for re-storing function and esthetics. *J ClinPediatr Dent*. 2000;24:257-260
12. Waggoner WF. Restoring primary anterior teeth: updated for 2014. *Pediatr Dent*. 2015; 37:163-70.
13. Osama Ibrahim, El Shahawy and Anne C O'Connell. Successful Restoration of Severely Mutilated Primary Incisors Using a Novel Method to Retain Zirconia Crowns -Two Year Results2016; 4628-40
14. Grewal N, Seth R. Comparative in vivo evaluation of restoring severely mutilated primary anterior teeth with biological post and crown preparation and reinforced composite restoration. *J Indian SocPedodPrev Dent*. 2008; 26:141-48.
15. Waggoner WF, Kupietzky A. Anterior esthetic fixed appliances for the preschooler: considerations and a technique for placement. *Pediatr Dent.* 2001;23:147-50
16. A. K. Shanmugaavel, DeepaGurunathan, LavanyaSundararajan. Smile Reconstruction for the Preschoolers Using GRASCE Appliance - Two Case Reports. 2016.

How to cite this article:

Sarah Banu and A. K. Shanmugaavel (2017) ' Different Modes Of Management Of Anterior Teeth With Early Childhood Caries', *International Journal of Current Advanced Research,* 06(04), pp. 3184-3186.
DOI: http://dx.doi.org/10.24327/ijcar.2017.3186.0220

****