Adolescent rampant caries

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Abstract

Adolescent rampant caries is a new and growing challenge in Conservative Dentistry. It has the same etiology and pattern as that of nursing bottle syndrome. Herein, a case is presented in which the main cause of rampant caries is the patient's habit of keeping cariogenic food in her mouth and going to sleep. Educating this etiology and introduction of preventive strategies not only assists in meeting the special oral needs of the adolescent population, but also helps to establish lifelong healthful habits.

Keywords: Adolescent rampant caries, cariogenic diet, nursing bottle syndrome

Introduction

Rampant caries is a suddenly appearing, rapidly burrowing type of caries resulting in early pulp involvement, in which more than 10 new lesions appear every year on healthy teeth surfaces which are generally immune to caries.\[1\]

Rampant caries is of the following three types –
• Nursing bottle rampant caries,
• Adolescent rampant caries and
• Xerostomia-induced rampant caries.

Nursing bottle rampant caries is very common in infants.

Adolescent rampant caries – When rampant caries occurs in adolescent age, it is called adolescent rampant caries. During adolescence, some children habitually put chocolates, toffees and biscuits in their mouth and go to sleep.\[1\] Such patients suffer from adolescent rampant caries. The adolescent rampant caries has the same pattern as that of nursing bottle caries.

Xerostomia-induced rampant caries is often associated with salivary gland hypofunction due to irradiation of the head and neck region.\[2\]

Herein, a case is presented in which there is severe involvement by caries of all the permanent teeth except mandibular incisors and mandibular canines, showing a pattern of rampant dental caries in children. The carious destruction of maxillary incisors was so extensive that root canal therapy (RCT) was done, fiber posts were placed and metal ceramic crowns were given.

Case Report

A 20-year-old female presented with complaints of pain in teeth and poor appearance due to discoloration and breakdown of her anterior teeth. The patient had no complaint about her general health. She looked well nourished and was not obese. However, the appearance of her teeth posed a psychological problem: she avoided smiling and lacked self-confidence.

History revealed that her deciduous teeth were also carious and no treatment was taken for them. Decay of the permanent teeth started just after the eruption, for which she did not seek any treatment but now there was pain in the anterior teeth. Patient had the habit of frequent intake of sugars and taking milk and biscuits just before going to sleep. She used to brush once a day in the morning and practised no other form of oral hygiene measures.

On clinical examination it was found that all her teeth were badly broken down by caries [Figure 1]. There was generalized periodontitis. All the quadrants showed moderate calculus deposits and marked gingival inflammation of maxillary anterior teeth. Teeth 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 34, 35, 36, 37, 44, 45, 46, 47 were carious. There was pulpal involvement in 11, 12, 21, 22, 26, 36, 37 and 47. Badly decayed root stumps of 16 and 46 were present. The patient produced thick copious saliva.

Smear examination of specimen taken from inflamed gingival area showed Gram-positive cocci in pairs and short chains (+ +), and culture report showed pure growth of Streptococcus mutans.

Intraoral periapical (IOPA) X-ray and orthopantomogram (OPG) revealed pulpal involvement of maxillary incisors and near pulpal involvement of maxillary canines, but there was
no significant alveolar bone loss and there were no periapical radiolucent areas in this region. Periapical pathology was seen in relation to 36, 37, 46 and 47. Teeth 38 and 48 were erupting [Figure 2].

After making a diagnosis of rampant caries, the nature of the disease was explained to the patient. First of all, complete oral prophylaxis was done. Single sitting RCT was also carried out in 11, 12, 21 and 22. Deep carious lesions of 13 and 23 were removed and composite build-up was done. Maxillary and mandibular premolars were having shallow Class V carious lesions which were restored with composites. After carious removal and RCT of maxillary incisors, little crown structure was left [Figure 3], as a result of which post and core build-up was planned. Fiber posts were placed in all the maxillary incisors and subsequently metal ceramic crowns were given [Figure 4]. Particular attention was paid to finishing of the gingival margins of the crowns to minimize further plaque accumulation. The appearance of the patient was markedly improved [Figures 5]. Patient was instructed to greatly reduce her sugar consumption, intensify her oral hygiene practices, i.e. brushing twice daily with fluoridated toothpaste, and special emphasis was given on brushing before going to bed and use of 0.2% Chlorhexidine mouthwash twice a day.

**Discussion**

Infants sleep with the nipple of nursing bottle, containing milk or sugar or a sugar containing beverage in their mouth. The child falls asleep and the sweetened milk or liquid becomes pooled around maxillary anterior teeth. The sugar containing liquid provides an excellent culture medium for acidogenic microorganisms. During sleep, the salivary flow is decreased and the clearance of the liquid from the oral cavity is very much slowed, resulting in rampant caries. The mandibular incisors usually escape because they are covered and protected by the tongue. This type of rampant caries is very common in
infants. If the habit of keeping some form of carbohydrate in
the mouth and falling asleep is continued in adult life, then
rampant caries with the pattern of nursing bottle syndrome
can occur. In the case presented here, the patient had the habit
of frequent eating and taking milk and biscuits just before
going to sleep. This resulted in adolescent rampant caries.

Since there was extensive carious involvement of maxillary
anterior teeth and little crown structure was left after caries
removal, fiber posts were placed. Fiber posts were selected
because biomechanical performance (fracture strength and
stress distribution) of restored teeth is less sensitive to post
diameter and post length when using glass fiber posts than
when using stainless steel posts.[4]

Rampant caries is a sign of gross dietary inadequacy, complete
absence of oral hygiene practice or systemic illness. The
presence of rampant caries is an indication of the need for
comprehensive patient evaluation. Caries activity is most
strongly stimulated by the frequency, rather than the quantity
of sucrose ingested.[5] The message that excessive and frequent
sucrose intake can cause caries should be widely disseminated
as a public health measure. Chewing of one slice of sugar-free
chewing, after meals, for 5–10 minutes is also recommended
to high-risk adolescent population.[6] Evidence of new caries
activity in adolescent and adult patients indicates the need for
dietary counseling. The goals of dietary counseling should be
to identify the sources of sucrose in the diet and reduce the
frequency of sucrose ingestion, especially before going to bed.

**Conclusions**

The dental caries risk for an adolescent represents a challenge
for the adolescent and the dental professional. Restoration
of carious lesions and promotion of sound dietary practices
is an essential component of caries management, along with
fluoride exposure and oral hygiene practices.

**References**

1. Chandra S, Chandra S, Chandra G. Clinical aspects of dental
caries. In: Textbook of Operative Dentistry. 1st ed. New Delhi:
Jaypee Brothers; 2007. p. 37.
2. Levine RS, Hill FJ. Rampant caries and its management: Part 1;
Clinical manifestations and aetiology. Br Dent J 1978;145:210-2.
3. Shafer WG, Hine MK, Levy BM. Dental Caries. In: A textbook of
Oral Pathology. 4th ed. Philadelphia: W.B. Saunders Co; 1983.
p. 433-4.
4. Rodríguez-Cervantes PJ, Sancho-Bru JL, Barjau-Escribano
A, Forner-Navarro L, Pérez-González A, Sánchez-Marín FT.
Influence of prefabricated post dimensions on restored maxillary
central incisors. J Oral Rehabil 2007;34:141-52.
5. Roberson TM, Lundeen TF. Cariology: The Lesion, etiology,
prevention and control. In: Sturdevant’s Art and Science of
Operative Dentistry. 4th ed. St.Louis: Mosby; 2003. p. 113.
6. Mobley CC. Nutrition and dental caries. Dent Clin North Am
2003;47:319-36.

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