

Case Reports

MANAGEMENT OF RAMPANT CARIES IN SAUDI ADULTS CASE REPORTS

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النخر السريع عند المرضى البالغين منتشرًا بين المرضى السعوديين الذين يراجعون عيادات الأسنان . للحصول على ثقة المرضى وتعاونهم منذ مراحل العلاج الأولى في ضبط الحالة يجب أن يشمل تحسين مظهر نخر الأسنان الأمامية وذلك بوضع حشوة تجميلية مؤقتة مثل أسمنت الزجاج الأيوني المبلمر (جلاس أيونومر) . بعد العلاج الإسعافي يتم العلاج النهائي فقط عندما يبدي المريض إمامًا كاملاً واهتماماً بصحة فمه وبالوسائل التي تمنع النخر . وتحليل العادات الغذائية وتقييم عمل اللعاب مهمًا في تشخيص العوامل المؤدية إلى المرض .

Rampant caries in adult patients is not uncommon in dental clinics in Saudi Arabia. To gain the patients' confidence and cooperation, early stages of management should include improvement of the appearance of carious anterior teeth by placing aesthetic provisional restorations using, for example, glass ionomer cements. After emergency treatment, definitive restorative management should commence only when the patients have demonstrated compliance with oral health education, including caries preventive measures. Analysis of dietary habits and assessment of salivary function are important in diagnosing factors that predispose the disease. Two cases of rampant caries in adult Saudi patients are presented to highlight these features in managing the condition.

Rampant caries may be defined as a lesion of acute onset affecting practically all erupted teeth, including those normally resistant to caries attack, such as the mandibular incisors.¹ The carious lesions spread rapidly and may soon involve the pulp. Most affected patients develop five or more lesions a year.^{2,3} It has been suggested that there is a high probability that permanent teeth will be affected in those who suffer from the disease in the primary dentition, unless successful preventive measures were implemented.⁴

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In young adults, rampant caries may result from frequent consumption of cariogenic diet, such as cakes, chocolates and sugar-sweetened carbonated drinks. The carious lesions appear typically on buccal and lingual surfaces of premolars and molars as well as approximal and labial surfaces of mandibular incisors.⁵ In adults, the disease is often associated with salivary gland hypofunction, due to irradiation of the head and neck region.⁴ Occasionally, salivary gland hypofunction results from the use of antisialogogic drugs or impaired emotional states.⁶ Multiple cervical carious lesions are typical, although extensive occlusal and approximal cavities may also be present. Where there has been gingival recession, root caries may be seen, especially in the elderly.

There is considerable literature on rampant caries in children^{1,6} but little appears to have been written

on the management of this condition in adults. In Saudi Arabia, we frequently see adult patients with rampant caries in our clinics, but most of these patients have apparently normal salivary gland function. We, therefore, present two of our cases with the aim of highlighting the characteristic features in clinical presentation and management of patients with the disease in Saudi Arabia.

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Case 1

A 24-year-old male Saudi typist presented at our clinic at King Saud University College of Dentistry, complaining of poor appearance due to discoloration and breakdown of his anterior teeth. He had visited many dentists but had not received satisfactory treatment. The patient had no toothache or any complaint about his general health. He looked well nourished and was not obese. However, the appearance of his teeth posed a psychological problem: he avoided smiling and lacked self-confidence. Clinical examination showed that all his teeth were badly broken down by caries [Fig. 1] or had defective restorations with recurrent caries. However, no tooth was tender to percussion and the pulps of all his teeth responded positively on testing for vitality. There was generalized periodontitis and bleeding index was 100%. All quadrants showed heavy plaque accumulation. The patient produced copious watery saliva. Apart from the use of miswak (chewing stick) once a month, he practiced no form of oral hygiene. Radiographic examination showed no significant alveolar bone loss and there were no periapical radiolucent areas.

After making a diagnosis of rampant caries, the nature of the disease was explained to the patient. At this first visit, caries was excavated from anterior teeth [Fig. 2] and provisional glass ionomer cement restorations placed to improve his appearance immediately. Particular attention was paid to finishing of the gingival margins of the provisional restorations to minimize further plaque accumulation. In addition, gingival embrasures were maintained to facilitate interproximal cleaning. After oral hygiene instructions, dietary record sheets were given to the patient to be completed on three consecutive days, including a week-end day.

Analysis of the three-day dietary diary at the second visit revealed that the patient drank about 16

cups of tea over a period of two hours three times a day. Each cup (about 25 ml) contained two cubes of sugar. The tea-drinking habit was accompanied by snacks which comprised mainly nuts but no cakes or chocolates. After explaining to the patient the roll



Figure 1. Rampant caries in an adult patient. Practically all teeth are carious, including the mandibular anterior teeth (Case 1).



Figure 2. Caries excavated from maxillary anterior teeth (Case 1).



Figure 3. Three months after maxillary anterior teeth were restored with glass ionomer cement temporary restorations. Note the improvement in the gingival condition (Case 1).



Figure 4. Temporary glass ionomer cement restorations on maxillary anterior teeth veneered with microfilled composite resin. (Taken six months after veneering but one year after commencement of treatment). Note the marked improvement in the periodontal condition.

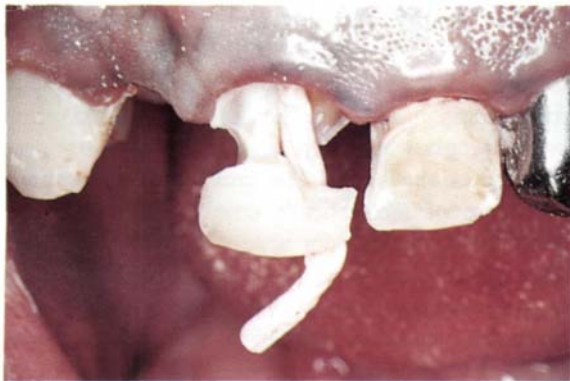


Figure 5. Excavation of caries from tooth #21 resulted in pulp exposure. Gutta percha point was inserted into the root canal to maintain unimpeded access into the root canal after temporary restoration (Case 2).



Figure 6. Temporary restoration of tooth #21 with gutta percha point inserted in the root canal. Removal of the gutta percha point resulted in an access cavity for root canal therapy (Case 2).

of his sugar consumption pattern in the aetiology of rampant caries, he was advised on the need to greatly reduce his sugar consumption and intensify his oral hygiene practices, i.e. brushing with fluoride toothpaste. The oral hygiene measures were to be practiced before and after each meal or snack and before bed. He was also requested to bring along to the clinic the prescribed oral hygiene aids.

At the third visit three weeks later, the patient's compliance with oral hygiene instruction and dietary counselling were assessed: plaque index was measured; likewise dietary habit, but this time by the recall method. Grossly carious posterior teeth were temporized by excavating caries and placing modified zinc oxide-eugenol cement restorations. Oral health education was reinforced. At the next two visits, the same procedures were repeated, while small and moderate carious cavities on posterior teeth were restored with amalgam.

When the patient was evaluated at a recall visit three months later [Fig. 3], there was marked improvement in the periodontal condition, the gingival index having fallen from 100% to 20%. At the recall appointment six months later, oral hygiene was excellent. The glass ionomer cement restorations on the anterior teeth were then veneered with microfilled composite resin. At the one-year follow-up, the patient had continued to maintain very good oral hygiene and the gingival margins and papillae were healthy [Fig. 4]. Permanent restorations were then placed on posterior teeth.

Case 2

A 40-year-old Saudi housewife complained of discolored broken-down anterior teeth but she had no toothache. Clinical examination revealed rampant caries with destruction of both anterior and posterior teeth. A 3-day dietary record did not indicate excessive sugar consumption. However, her oral hygiene was very poor and she last visited the dentist eight years ago.

Attempt at excavation of caries from her anterior teeth resulted in pulpal exposure of tooth #21. To place an aesthetic provisional restoration and yet maintain unimpeded access to the root canal, a gutta percha stick was inserted into the root canal before temporary restoration with glass ionomer cement [Figs. 5 and 6]. After the restorative material had set, the gutta percha was removed; a cotton pellet placed in the pulp chamber and the access cavity

sealed with Cavit, synthetic resin temporary restorative material. This procedure facilitated endodontic treatment later.

Gross caries on posterior teeth was controlled by placing temporary glass ionomer or zinc-oxide eugenol cement restorations. Thus, the patient found it easier to maintain good oral hygiene which resulted in improved gingival health. More definitive restorative treatment was planned to follow after the patient had demonstrated ability to sustain her improved oral hygiene.

Discussion

Poor oral hygiene is a common feature in adult patients with rampant caries seen at our clinics at King Saud University College of Dentistry, as exemplified by the two cases reported above. Furthermore, in many of our cases, dietary analysis usually reveal high frequency of sugar consumption, although this was not so in Case 2. Apart from the sugar in tea reported in Case 1, cakes, chocolates and soft drinks are other sources of frequent sugar intake among the Saudi population.⁷ Oral hygiene instruction and dietary analysis, therefore, constitute important aspects in the management of adult patients with rampant caries in the Kingdom.

The primary complaint of almost all adult patients with rampant caries who visit our clinics is poor appearance of their anterior teeth, and invariably, they have made unsuccessful attempts to receive satisfactory treatment elsewhere. Hence at the first visit, we endeavor to improve their appearance by restoring the anterior teeth provisionally with tooth colored restorative materials such as glass ionomer cement. With the immediate improvement in the patients' appearance, they tend to have more confidence in the dentist and therefore cooperate by complying with oral hygiene instruction and dietary counselling.

It is important to reinforce oral health education at each visit. It has been demonstrated that a patient's level of oral hygiene tends to deteriorate not long after a visit to the dentist, but improves again after reinforcement of oral health education.⁸

When salivary gland hypofunction is suspected, e.g. in patients on antisialogogic drugs,⁶ irradiation of the salivary gland, or in those with thick and ropy saliva, the host's resistance to caries should be assessed by measuring both the resting and

stimulated salivary flow rates as well as buffer capacity.^{9,10} In the cases reported in this paper, however, salivary secretion was copious and watery.

Lactobacilli count may be used to assess a patient's compliance with dietary counselling; the count is usually high in patients with high sugar consumption.^{10,11} Furthermore, Streptococcus mutans count may provide an insight into the patient's level of caries activity. These microbiological tests can now be carried out on the dental chair. The results of these tests may also provide a rational basis for making the decision to proceed with advanced restorative treatment, such as provision of fixed prostheses.¹⁰

Generally, we classify the management of adult patients with rampant caries into three phases:

Phase 1

After history taking, clinical examination and diagnosis at the first visit, anterior teeth are immediately restored with provisional aesthetic restorations. On account of its anticariogenic property, glass ionomer cement is the restorative material of choice.^{12,13} The provisional restorations take care of the patient's chief complaint which invariably includes poor appearance. The nature of the caries process is explained to the patient in the language he/she comprehends. The patient is then given oral hygiene instruction and provided with forms for a 3-day dietary record, including a week-end day.

In some cases, the patient is requested to bring his/her oral hygiene kit to the clinic at the next visit. This helps in patient motivation. Also, plaque disclosing tablets or solution, such as erythrocin, may be prescribed to enable the patient assess his/her oral hygiene efforts.

Phase 2

At this phase, the patient's oral hygiene is assessed and oral health education reinforced. The dietary record is assessed¹¹ and if sugar consumption is found to be excessive, the patient is encouraged to suggest realistic ways to reduce the frequency of sugar consumption. It is emphasized that the control of the disease depends mainly on the patient's compliance with oral health education. The patient may be given professional oral debridement and fluoride application. At this stage, he/she is given routine operative treatment, including the

provision of preventive restorations and fissure sealants.

The patient is seen at three-monthly recall visits when oral hygiene, periodontal condition and compliance with oral health education are assessed. If new carious lesions are still appearing, in spite of improved oral hygiene, reduced frequency of sugar intake and topical fluoride application, 0.2% chlorhexidine mouthwash twice daily may be prescribed¹⁴¹⁵ for a period of six weeks each time. It should be remembered that prolonged use of chlorhexidine mouthwash may cause tooth discoloration.

Phase 3

When the rampant caries has been brought under control, periodontal condition satisfactory and the patient's improved oral hygiene sustained, advanced restorative treatment, including crown and bridgework may be provided in phase 3 of the treatment. Where facilities are available, microbiological caries activity tests, using the dip slide method, are carried out not only during the first two phases, but also in phases 3 before a decision is taken to provide advanced restorative treatment. The patient is then seen at recall appointments twice yearly.

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