

Report

Root caries among Benghazi patients

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SUMMARY A total of 420 Benghazi patients were clinically examined for root caries. Root caries was not limited to older patients and the proportion of root caries among young adults was similar to that of the older age groups. Most of the lesions were located proximally and underneath restorations rather than labially or lingually. Our results may serve as baseline data for further studies on root caries in the Libyan Arab Jamahiriya.

Introduction

Dental root caries has received a great deal of attention in the past few decades [1,2]. Root caries can occur as a primary or secondary lesion and diagnosis, access and treatment are different than coronal caries [2,3]. Older patients are more prone to root caries, although estimation of the prevalence of root caries is difficult to make because of continuous loss of tooth structure with increasing age [4,5]. It has been proposed that the increased incidence of root caries in older patients may be due to the presence of periodontal disease and decreased flow of saliva [6,7], poor oral hygiene [7,8] or poor health status [9,10]. It has been found that 10% to 20% of root caries lesions are found subgingivally [7], especially at the proximal region [6].

Most recent studies have shown that *Streptococcus mutans*, *S. sobrius* and *Actinomyces* species are responsible for surface root caries [11]. Zambon and Kasprzak described the pathogenesis of root caries formation [11]. The process begins with colonization by acid-producing bacteria plaque, which is followed by the formation

of demineralized clefts in the cementum. In the next step, Gram-positive bacteria invade the dentinal tubules, which leads to the formation of microcavities, sclerosis, crystal growth, demineralization of the dentinal tubules and destruction of the organic matrix. This process may be enhanced in the presence of gingival recession [11]. It has also been found that root caries spreads in a circumferential manner [12]. Clinically, the root caries appears as a soft, irregularly shaped lesion, either totally confined to the root surface or also involving the enamel at the cementoenamel junction. However, clinically, the lesion starts on the root surface [12].

Our study was conducted to evaluate the occurrence of root caries among Benghazi patients, as we could not find any reports of studies on this area in the Libyan Arab Jamahiriya in the past 10 years.

Materials and methods

The study sample consisted of 420 patients, who attended the Department of

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Conservative Dentistry, Dental School, Benghazi between December 1995 and May 1996 and who were assessed to have dental root caries. These patients were examined thoroughly for dental caries as well as root caries. The examinations were carried out clinically and in some cases radiographic examination was used to confirm the diagnosis. For the purposes of standardization, clinical examinations were carried out by one dentist using a sharp explorer and mouth mirror.

Patients were asked to rinse their mouths prior to the examination in order to avoid misinterpretation because of the presence of food debris. Professional prophylactics were also used in some cases with poor oral hygiene. In our study, filled root caries were also included in the sample. The data were calculated and tabulated according to the age of occurrence and site of lesions.

Results

Table 1 shows the percentage of root caries in each age group. It can be seen from this table that a considerable amount of root caries is also found in the age group 25–35 years, and the proportion of root caries among different age groups remained almost the same, except for the age group 15–25 years.

Discussion

Root caries has become a significant problem. We found a high proportion of root caries in our study sample. Except in the youngest age group, about half of the patients examined in each age group had root caries. This indicates the equal risk at various ages; thus the possibility of having root caries is equal in the age range 26–70 years. Most studies [1,2,7] have found that the increase in root caries is limited to older patients, as they have been more exposed to the long-standing cumulative factors of poor oral hygiene as well as poor periodontal status [1,2].

This abnormal increase in root caries among young patients in Benghazi may be explained by poor oral hygiene and also the lack of oral health education and motivation. We found that in nearly half of our patients in every age group, the root caries were underneath existing restorations irrespective of whether they were amalgam, composite or cast restorations. This might have occurred as a result of suspect dental procedures, such as poor marginal adaptation, and inadequate cleaning accessibility and maintenance of oral hygiene by the patient.

In spite of the small size of the study sample and the limitations of the clinical

Table 1 Percentage of root caries according to age group

Age group (years)	No.	Proximally located	Labially or lingually located	Under restoration	Total no.	%
16–25	80	4	0	2	6	7.5
26–35	80	23	0	16	39	48.8
36–45	80	25	5	12	42	52.5
46–55	80	20	12	8	40	50.0
56–70	80	25	9	11	45	56.3

diagnostic procedure, our study corroborates the findings of previous studies and to

some extent provides baseline data for further studies in the Libyan population.

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