A study of periodontal disease and tooth loss over 12 years

A 12-year retrospective audit study of tooth loss in a general dental practice by C. Nicholls Br Dent J 2000; 188: 98-99

Objectives
To determine the incidence of periodontal disease in a general dental practice, and to evaluate the effectiveness of treatment in preventing tooth loss over a period of 12 years.

Design
This was a single centre retrospective analysis.

Setting
A general dental practice in Bournemouth.

Subjects and methods
Over a 6-month period from February 1997 to August 1997 records were made of all patients attending at the practice who had presented for dental examination between September 1985 and September 1986. A database was constructed to record the number of teeth present at the beginning of the study, those which at their initial exam had probing depths of between 5 and 6 mm, and those with 7 mm and greater. If teeth were lost, the date of the extraction was recorded.

Interventions
All patients were treated by conventional dental therapy.

Main outcome measures
Tooth loss was chosen as the end-point.

Results
13% of the patients presenting initially had periodontal problems, and conventional treatment resulted in very few teeth being lost over the study period.

Conclusions
Periodontal disease affected only a small number of the patients in the general dental practice. Those patients affected responded well to conventional therapy, resulting in very few teeth being lost during the period of study.

In brief
- This is a report of treatment outcome in general dental practice.
- The report describes a method of assessing the efficacy of dental care using tooth loss as the final endpoint.
- The simplicity of the design means that the method could be repeated in other dental practices.

Comment

The main goal of periodontal and indeed all dental treatment is the retention of as many teeth as possible in health, function, and in comfort. Tooth loss, therefore, can be regarded as the ultimate outcome criterium or true endpoint that reflects the success and efficacy of dental treatment over a period of time. A number of studies have assessed the long-term response to periodontal treatment in large cohorts of patients who have been maintained principally in specialist periodontal practices. Perhaps the most classic study is that of Hirschfeld & Wasserman who, after following 600 patients over an average of 22 years, showed that the cohort could be divided into three main groups: well-maintained patients who each lost fewer than three teeth; a downhill group who lost four to nine teeth; an extreme downhill group each of whom lost between 10 and 23 teeth. These results provided some of the first evidence that even after treatment, patients with history of periodontal disease do not behave as a homogenous cohort.

In the current study, the author undertook a retrospective audit of those patients who first attended his practice between September 1985 and September 1986. Data were collected for 157 dentally well-motivated patients from a middle economic group. Unlike the majority of previous similar studies however, the present investigation was undertaken in a general dental practice with hygienist support rather than in a specialised periodontal environment.

Over a 12-year period (from when the patients first attended to when the audit was carried out in 1997) it was noted that only 151 teeth (4%) were extracted for various reasons from 61 patients; 29 of the teeth were third molars and around 13% of the extractions were undertaken in the first year following the initial attendance. The majority of patients could be classified in the well-maintained group of Hirschfeld & Wasserman whereas approximately 12 subjects would have fallen into the downhill category. No patients lost more than five teeth over the period of the study.

The severity of periodontal disease at first attendance increased the likelihood of tooth loss over the ensuing 12 years. For example, 10% of those teeth which initially had probing depths of 5–6 mm were eventually extracted; 21% of those teeth with initial probing depths of 7 mm or greater were lost over the 12 year follow-up period. Over 50% of the teeth extracted during the 12 years had presented with probing depths of 5 mm or more at the initial attendance.

The selected population in this study is not wholly free of bias although there is a clear indication that a low rate of tooth loss prevails when patients attend regularly and receive periodontal management from dental hygienists. These data should be of interest to general practitioners who very often will not be able to relate results and data from more general epidemiological surveys to the management of patients in their own practices.

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