CASE STUDY

BY HAFEEZ AHMED

TREATING CHRONIC ADULT PERIODONTITIS AND MANAGING THE LEGACY OF EXTENSIVE BONE LOSS

This case offers a great opportunity to look at multi-disciplinary treatment from start to finish and then to follow the supportive periodontal therapy for a further 15 years. Readers can appreciate the treatment in its entirety whilst reflecting on individual elements which they might want to deliver themselves if and when they are given the opportunity to work in a multi-disciplinary team.

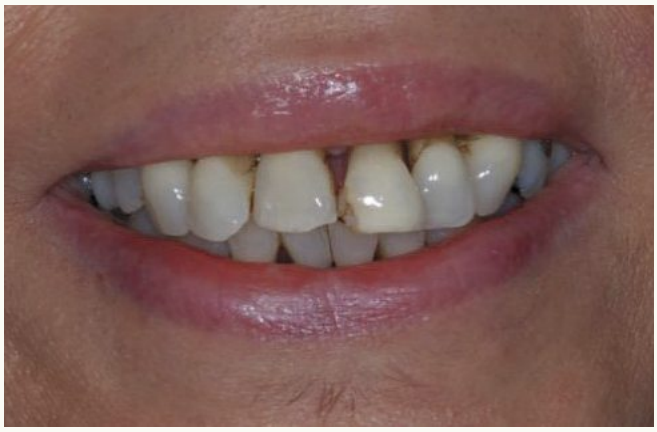
This patient was referred to the author, a Specialist Periodontist in 2007. She was 54 years old. Her main concerns were bleeding gums, mobile teeth, drifting of teeth and a dark appearance to her smile (Fig.1).

Examination

The patient reported that she was medically fit and healthy, had no allergies and not taking any medications. She had smoked between 10—15 cigarettes every day of her adult life and more recently had taken to going outside to be able to smoke in the car park at her workplace.

The oral examination revealed generally plaque free teeth however the plaque score at the dento-gingival margin was closer to 70%. Bleeding on probing was almost 80%

Figure 1



with periodontal pockets generally >3mm and between 5-9mm at mesial and distal sites with buccal recession between 2-5mm. All teeth demonstrated mobility between grades 1-2 and were vital when tested with an electronic pulp tester. The upper anterior teeth had over-erupted and rotated creating an increased overbite. Full mouth long-cone periapical radiographs were performed.

Diagnosis

A diagnosis of advanced active chronic generalised adult periodontitis with bone loss of 80-90% around most teeth was made. The risk of disease progression and potential tooth loss was high. [1,2]

Consultation

The consultation, as is typical of a case like this with extensive bone loss and drifted teeth, was awkward, challenging and difficult. The patient countered practically every explanatory statement with: *"Why haven't I been told this before?"*; or *"I've never been told this before!"; or "I'm definitely going to sue my dentist!"; or "I've never missed an appointment with the hygienist!"*

Explanations of the disease process included the familiar following statements: *"…gum disease is a genetic predisposition to the potential loss of the bone which supports*

your teeth;" and "…the process is usually triggered when your oral hygiene falls below a threshold for your particular level of genetic susceptibility;" and "…back when your teeth started to feel loose, significant bone had already been lost;" and "…back when your teeth started to drift there was already insufficient bone remaining to hold them in their original position;" and "…smoking does not cause bone loss but it can increase your susceptibility;"[3] and "…the response to periodontal treatment is generally less in current and former smokers;"[4] and "…the bone loss is irreversible".

Her dismay was clearly evident at this news and throughout the discussion the patient was emotional and repeatedly swung back and forth between angry and tearful.

Treatment plan

Broadly speaking it was aimed to divide the treatment into the following stages:

- Cause related therapy
- Review and revise
- Corrective therapy
- Review and revise
- Restorative therapy
- Review and revise
- Maintenance therapy

Treatment

Treatment commenced with oral hygiene instructions and smoking cessation advice. It was made clear that the success of any professional treatment was wholly dependent on her compliance and that if she did not it would fail miserably.[5] The patient promised to perform the homecare exactly as demonstrated and she also agreed to quit smoking.[6]

A period of three months was agreed for the patient to get used to her new homecare regime and for the gingival tissues to respond to her new no smoking status.

February 2008

A course of non-surgical therapy was undertaken using local anaesthetic. The patient accepted the strong recommendation to have this done as 'full mouth disinfection' as it offers time efficiency for the patient and places their entire mouth into the healing period simultaneously. The patient was then provided with supportive periodontal therapy and, specifically, disturbance of the biofilm at four weekly intervals for a period of three months.

May 2008

At review (Figs. 2, 3, 4), examination revealed plaque free teeth and a plaque score at the dento-gingival margin < 20%. The gingivae did not bleed when they were gently stimulated with a probe and bleeding on probing was reduced to approximately 35%. Periodontal pockets had reduced significantly however multiple pockets > 4mm persisted in all sextants. All teeth demonstrated mobility

Figure 2

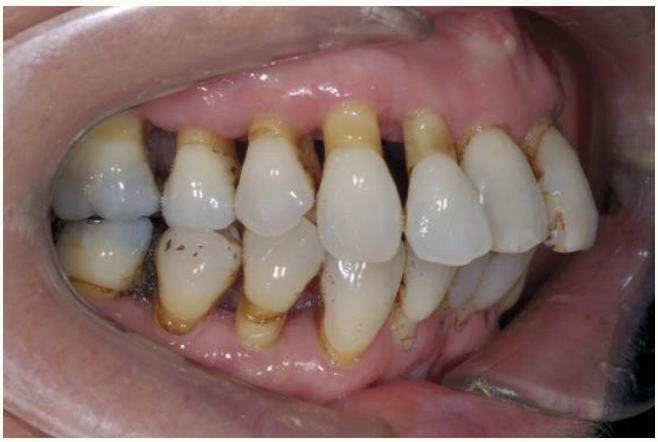


Figure 3

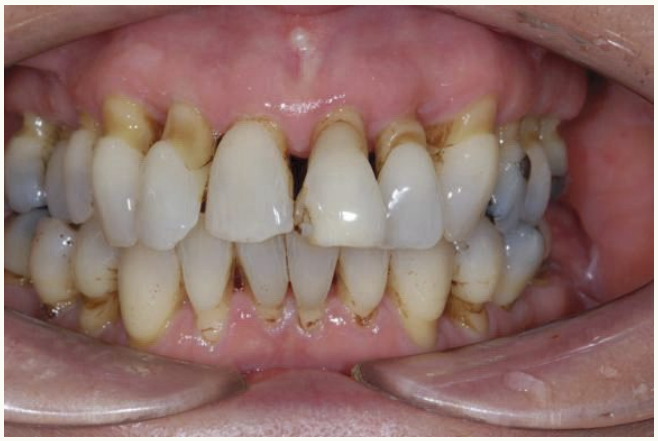
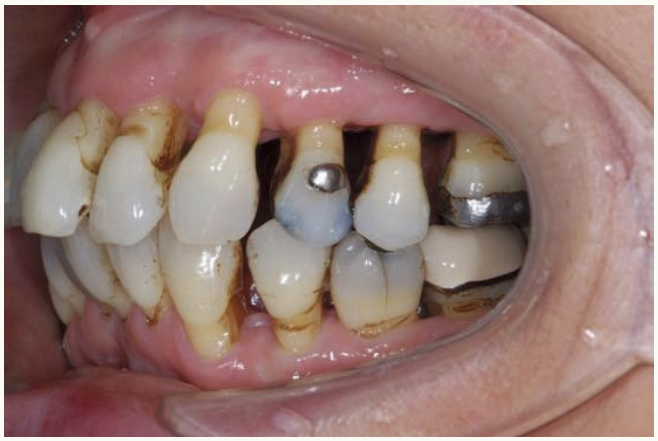


Figure 4



between grades 1-2 and were vital when tested with an electronic pulp tester. The number of residual periodontal pockets > 4mm coupled with the bleeding on probing indicated a high risk of disease recurrence so a course of corrective pocket reduction therapy was agreed.[8,9]

June 2008

A course of corrective pocket reduction therapy using local anaesthetic was undertaken, performed as a full mouth approach in a single treatment session. This revealed that the actual amount of bone loss was far more severe than the radiographs had originally indicated.[10] Whilst sutures were being placed, it was impossible to ignore the fact that

Figure 5

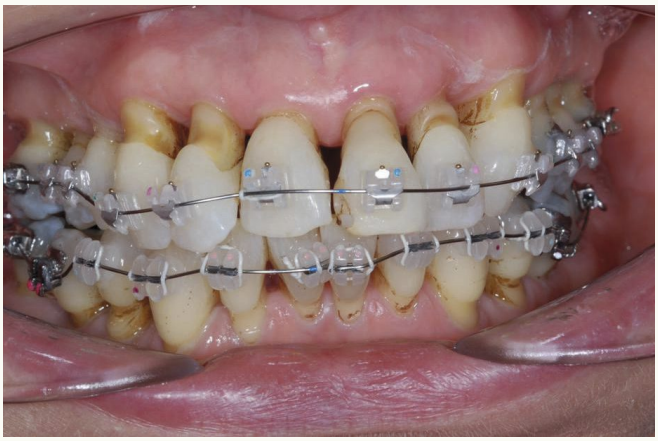
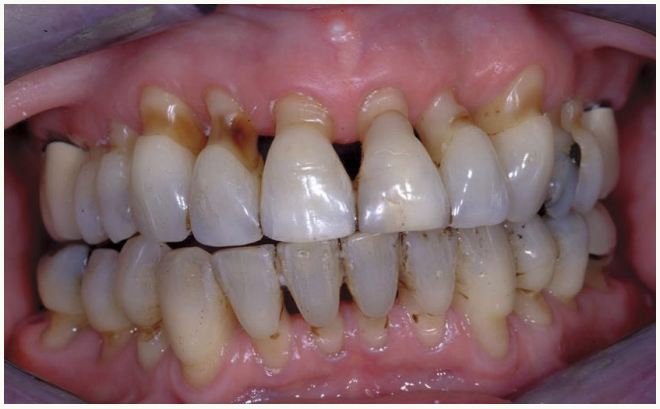


Figure 6



the teeth were significantly more mobile than at the first appointment. Sutures were removed after 10 days and the patient was provided with supportive periodontal therapy, and specifically biofilm disruption at four weekly intervals for three months.

September 2008

At further review, examination revealed plaque free teeth and a plaque score at the dento-gingival margin < 20%. The gingivae did not bleed when they were gently stimulated with a probe and bleeding on probing was reduced to < 20%. Periodontal pockets were < 2mm and elevated pockets had been completely eliminated. All teeth demonstrated mobility between grades 1-2, they were vital when tested with an electronic pulp tester and overall temperature sensitivity had increased.

At this point it was decided to postpone further treatment and to attempt to maintain what had been achieved. Supportive periodontal therapy continued at three monthly intervals for a period of one year to allow for the periodontal tissues to stabilise, which they did.

September 2009

Options for smile correction were discussed at this point: Plan A was based around some tooth removal; and Plan B was based around the retention of her natural teeth.

Plan A involved the removal of three upper teeth; the upper right lateral incisor (11), the upper left central incisor (21) and the upper left lateral incisor (22). Subsequent to the tooth removal the spaces would be restored using three individual dental implant retained crowns or a six-unit fixed bridge using the two upper canine teeth and the upper right central incisor as the bridge retainers.

Plan B was to 'cross our fingers' and reposition the natural teeth utilising fixed braces, to which the patient agreed.

October 2009 - September 2011

A course of fixed brace therapy was provided by a specialist orthodontist. The patient continued to attend for supportive periodontal therapy at intervals of three months (Fig.5).

November 2011

Pocket reduction therapy was repeated on the distal surface of the upper left lateral incisor (22). In 2012 the upper first molar teeth were restored with porcelain bonded crowns, during which the upper left first molar became pulpitic and required root canal treatment, which was provided by a specialist endodontist.

Two years later, the diligent application of homecare devices had hastened the root surface damage which had been evident six years earlier in 2007 (Fig.6). Due to the extent of root surface damage a decision was taken to restore the lost root surface tissues in an attempt to prevent further loss (Fig.7)

In 2014, during a supportive periodontal therapy session the patient produced an advert for a flexible gum veneer. I made

Figure 7

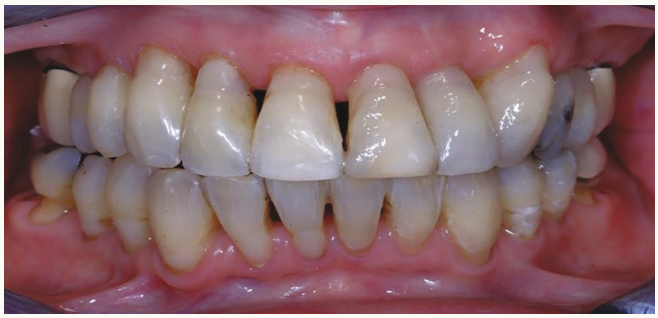
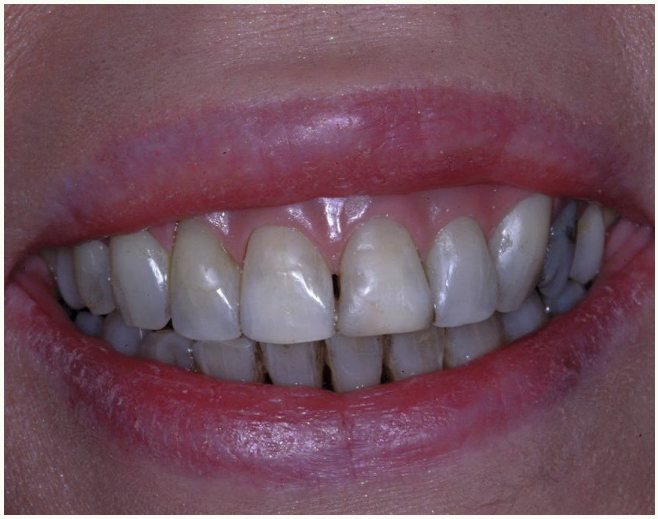


Figure 8



a valid attempt to talk her out of it, but eventually conceded and agreed to having one fabricated and fitted it: it was not easy! (Fig.8)

January 2024

The most recent supportive periodontal therapy session continued the uninterrupted treatment plan since she first presented in 2007, apart from the period March 2020 to March 2022 when she went into an extended period of Covid related self-isolation.

At this most recent review appointment, her gingival health was stable. The staining at the cervical margins of the top right restorations had become increasingly unsightly. The upper left second premolar unexpectedly displayed grade 3 mobility, and yet it had remained symptom-free. We have discussed the removal of this tooth followed by restoring the site using an implant retained crown. The patient is yet to decide.

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For any reader who is interested, visit YouTube: Oral Hygiene Instructions with Gum Specialist Dr Ahmed.

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