BY HAFEEZ AHMED

MIND THE GAP

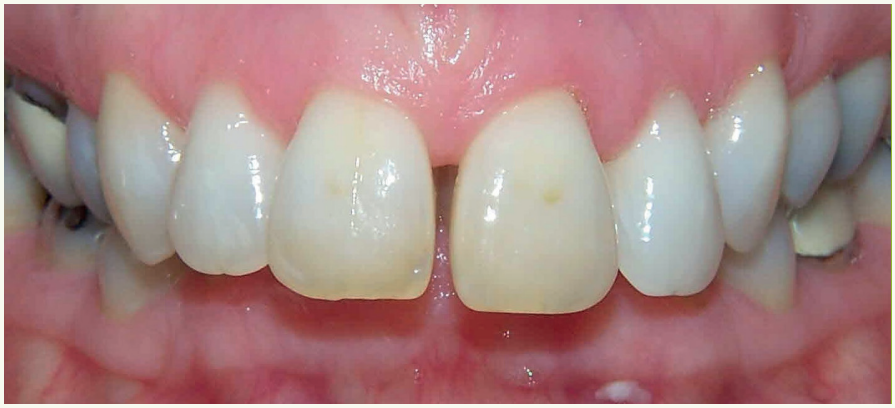

Figure 1: **The Gap**

"How long have you had the gap between your front teeth?" is a simple question, however, the answer is rarely straight forward. For this patient, the gap had opened up in the previous year and it was one of the main reasons for the referral, yet its significance was lost on her. She, like so many other patients, recalled a terrible, trauma-based event involving her front teeth and a door, but did not associate the incident with periodontitis or the progressive destruction of the periodontium.

Context

Most patients find it difficult to relate what is happening deep inside their gums to the visual appearance of their teeth. One reason for this is they do not automatically associate the words 'periodontitis' and 'periodontium' with bone or bone loss. In this respect it helps when the words used in discussions include 'bone' and 'boss loss' as they make communication topic-specific and unambiguous.[1] To this end, around 2006, I carefully devised the following statements to explain periodontal disease to patients in a way I thought would be most effective:

- Gum disease is an infection that irreversibly destroys the bone that holds your teeth in place.
- When a significant amount of bone has been destroyed, your teeth will feel loose or wobbly.
- When insufficient bone remains to support your teeth, they will start to drift or fall out.

The above statements might not be to everyone's liking but they are simple, short, topic-specific and to the point. When I used them to explain to this patient why a gap had opened up between her front teeth she said: "It sounds really serious". She understood what I said and this allowed us to swiftly move on to discussing its consequences and the benefits of resolving the gum disease. It also allowed us to simultaneously discuss the benefits of orthodontic therapy to restore her teeth back into their original positions and back into a functional non-traumatic occlusion.[2]

Figures 2 and 3 are images of long cone periapical radiographs of the upper anterior teeth. The radiographs are typical of the advanced bone loss around the anterior teeth.

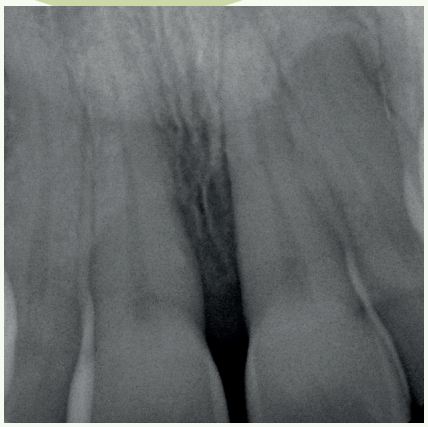

Figure 2: **Long cone periapical radiograph of upper central incisors**

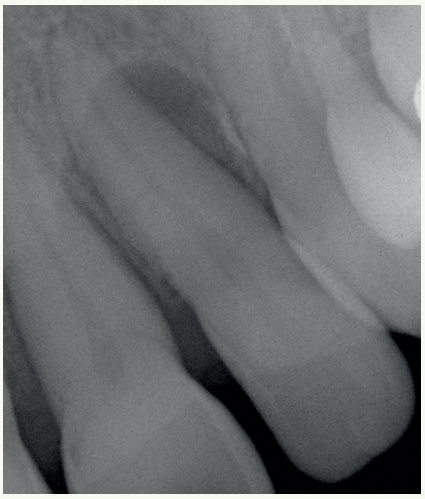

Figure 3: **Long cone periapical radiograph of upper left lateral incisor**

Figure 4 shows that in the resting position the patient's upper left central incisor sits beyond the vermillion border of the lower lip. This, in my experience, allows the tooth to be pushed more in the buccal direction.

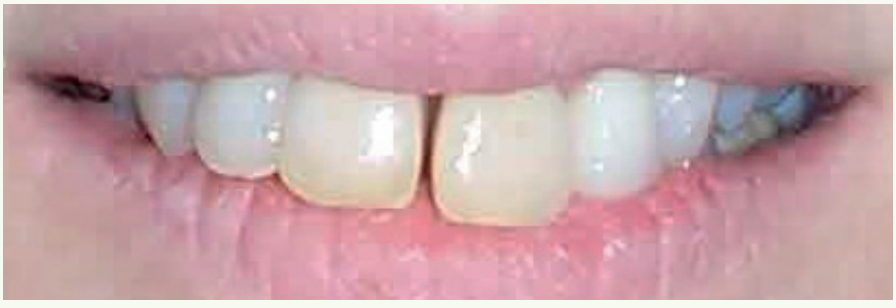

Figure 4: **Central incisors sitting on the lower lip**

Diagnosis

A diagnosis of advanced active chronic generalised adult periodontitis with bone loss up to 80% around some teeth was made (stage iv as per the current EFP S3 level clinical practice guideline). The upper left lateral incisor was diagnosed with reversible pulpitis.

Post-examination discussion and consent

During the discussion the patient said: "This has really affected me – badly!" She felt an element of disability because she avoided using teeth 21 and 22 for incising her food because they had become visibly mobile when she chewed. The gap between her central incisors had made her profoundly anxious.[3] For many years she had lived in fear that her 'smile teeth' could fall out at any moment, but had failed to fully comprehend why they were mobile or drifting. The discussion became even more intense and intimate when she experienced an emotional outpouring and started to cry uncontrollably. She confided in me that between 2006 and 2011 she stopped going to her dentist and her hygienist due to a post-traumatic stress disorder resulting from complications following a hysterectomy. She also told me that she did not like that her employer pressurised her into doing things she knew to be wrong and disagreed with: she was a patient complaints handling manager at a local hospital. She wished she had more courage.

Treatment in Brief

The treatment was planned in accordance with the current recommendations[4,5] and broadly divided into:

1. Cause related periodontal therapy
2. Review and revise
3. Corrective periodontal therapy
4. Review and revise
5. Orthodontic therapy
6. Review and revise (anticipating endodontic therapy tooth 22)
7. Maintenance therapy

Overall, the treatment was extensive, complicated and demanding, however throughout it the patient was most appreciative. The treatment plan

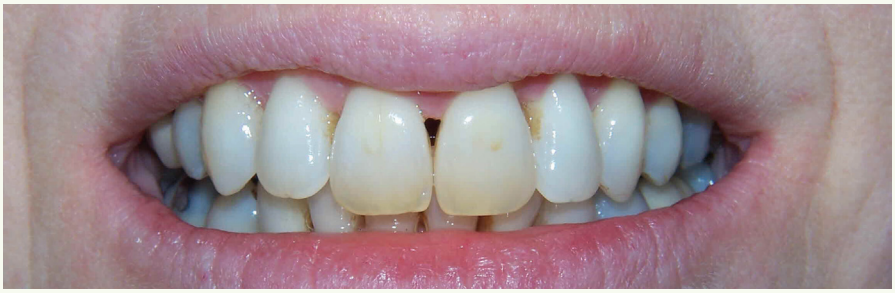

Figure 5: **the upper anterior teeth post orthodontic therapy**

was agreed in November 2011, the periodontal treatment was completed by January 2013. It quickly became apparent that whilst the radiographs were helpful, they had not revealed the extent of the bone loss[6], especially on buccal and palatal surfaces. Tooth 21 had lost approximately 60% of the bone on its palatal surface, and tooth 22 had lost approximately 70-80%. Tooth 22 became hypersensitive and untouchable in the healing phases of treatment but ultimately endodontic therapy was avoided. The lower third molars were removed during phase 3 of the treatment. The objective of orthodontic therapy changed from merely repositioning the splayed teeth to include correcting the underlying Class 2 Division 2 malocclusion. During the orthodontic therapy, supportive periodontal therapy was provided at monthly intervals.[7] Orthodontic therapy was completed with the fitting of fixed retainers in March 2015. The retainers were positioned as far from the gums as possible.[8]

Figure 5 shows the outcome of the orthodontic treatment - the gap between the central incisors has been closed and they no longer rest on the lower lip.

Outcome

The periodontal condition was fully resolved with some residual non-bleeding pockets between 4-5mm on teeth with the most severe bone loss. The maintenance phase commenced in May 2015 and the patient has continued with the plan, which started in 2012, without interruption.

A few years after the treatment was completed, she resigned from her job and is no longer a stressed-out patient complaints handling manager.

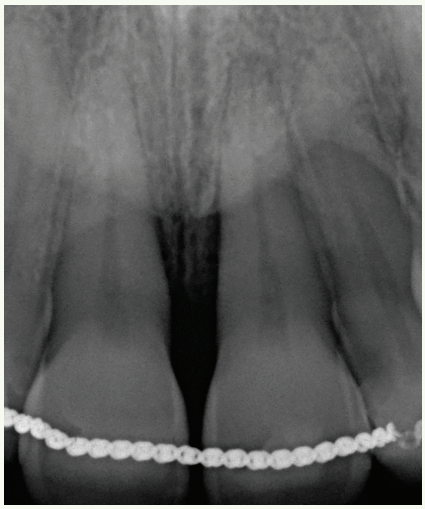

Figure 6: **Radiographic appearance of the repositioned upper anterior teeth with the fixed retainer**

Insight

I have treated several hundred patients with splayed upper anterior teeth; Figure 8 is another example.

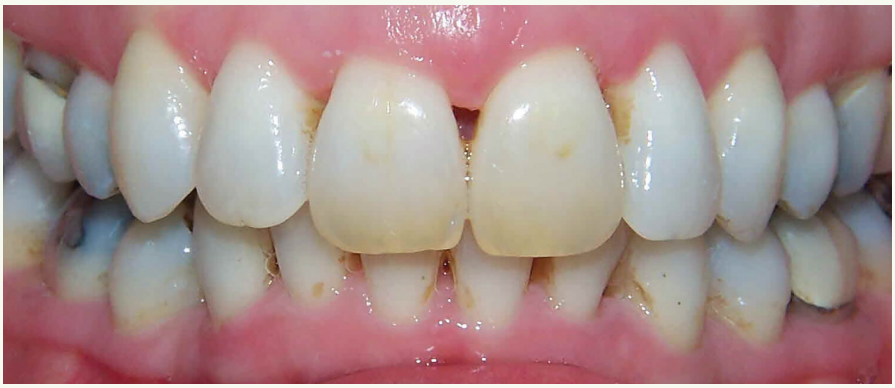

Figure 7: **The patient's smile in 2023**

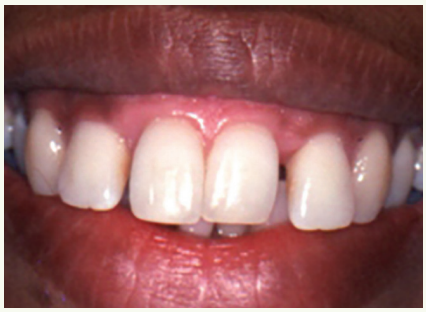

Figure 8: **Splayed upper anterior teeth**

Once the teeth have splayed, the post initial assessment discussion is one of the most complex. Not only is the patient required to commit to periodontal therapy, they are also required to commit to orthodontic therapy. As it becomes apparent to them that they are required to consent to a greater number of more complicated risks, than when their disease was mild and moderate, they tend to blame previous care providers and typically say: "Why has this been allowed to happen?" or "I should have been told this before!" and "If I'd been told this sooner this could have been prevented." Often, if not always, my response is: "Not in my experience".

That said, I am yet to meet a patient who did not readily understand what I was saying when I used the simple, short, topic-specific statements I presented at the beginning of this article.[1]

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