OPINION

BY HAFEEZ AHMED

AVOIDING PERI-IMPLANTITIS IN A HIGH-RISK CASE

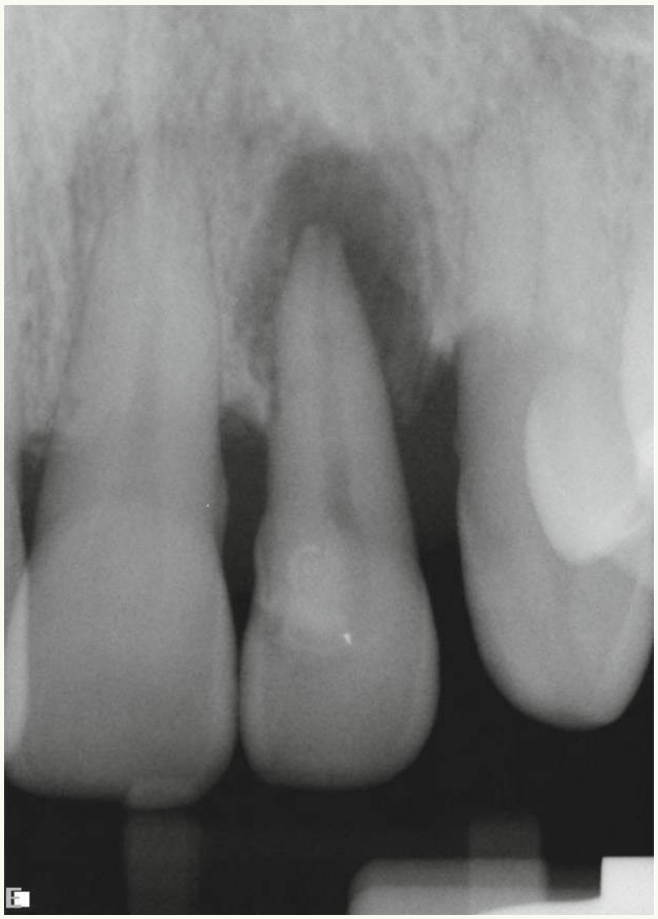


Figure 1: Long cone periapical radiograph (LCPA) tooth 22 with a radiolucent area extending beyond apex.

The removal of natural teeth is undesirable – but sometimes, it seems, unavoidable.

Context

A 41-year-old fit and healthy patient, who had never smoked, was referred to our specialist practice in 2007. In the letter of referral, his general dentist requested the removal of tooth 22 and tooth 26 and, if possible, for the spaces to be restored with the use of implant-retained crowns. The patient had recently completed a course of cause-related periodontal therapy and the referring dentist sought guidance on future gum care for his patient.

Examination

The examination revealed plaque free teeth with no visible hard deposit anywhere. On gentle stimulation with a ball-ended periodontal probe the crevicular bleeding was between 60-70%. The periodontal pockets were generally elevated above 3mm and several between 5-9mm at mesial and distal sites in each sextant. Bleeding from the elevated pockets was profuse. Some teeth demonstrated mobility grade 2. Teeth 12 and 22 had drifted buccally creating a gap between them and the canine teeth. Teeth 22 and 26 were both vital to temperature and to electric pulp testing. As part of the assessment a CT scan was taken.

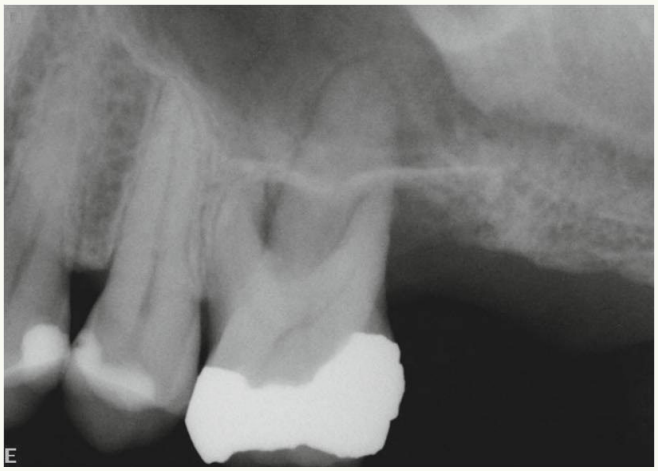


Figure 2: LCPA of tooth 26 – complete bone loss on distobuccal root.

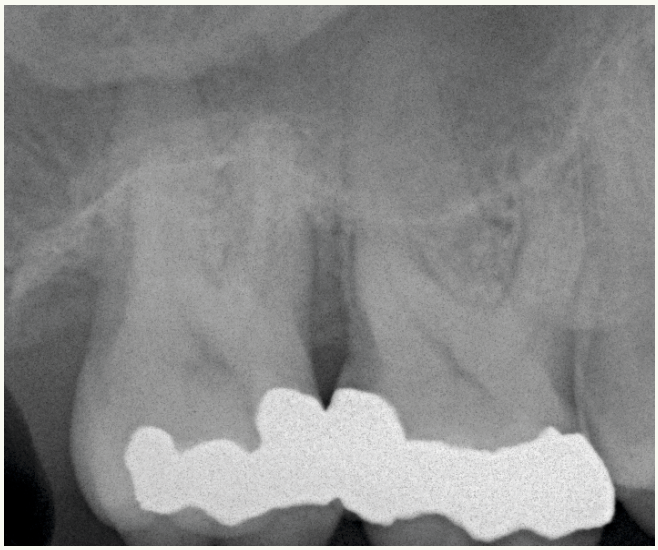


Figure 3: LCPA teeth 17 and 16

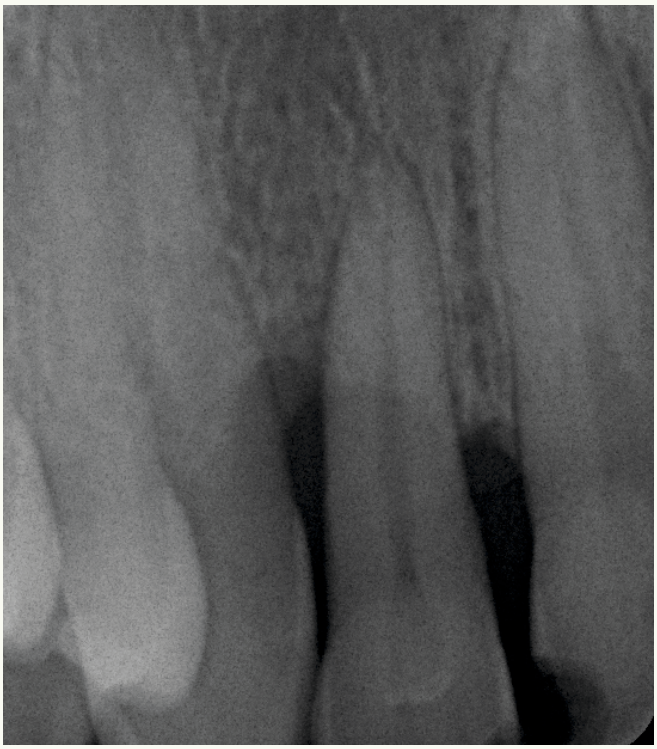


Figure 4: LCPA tooth 12

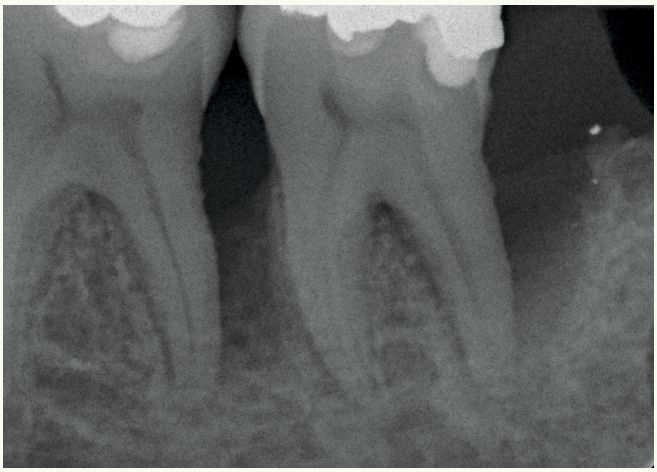


Figure 5: LCPA teeth 36 and 37

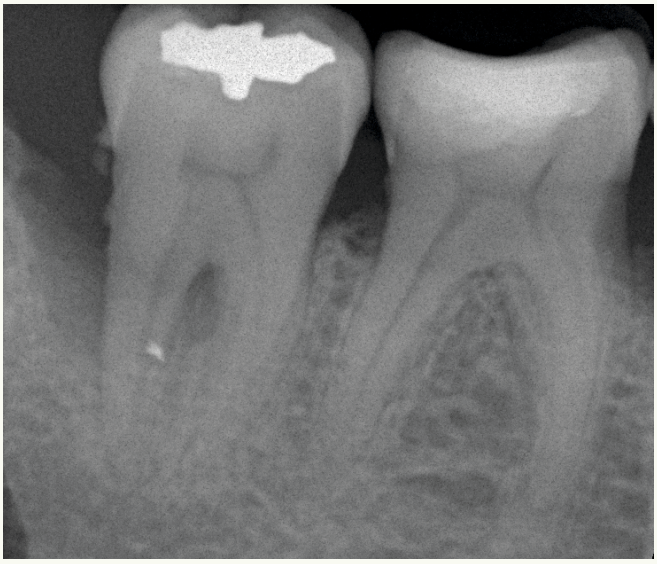
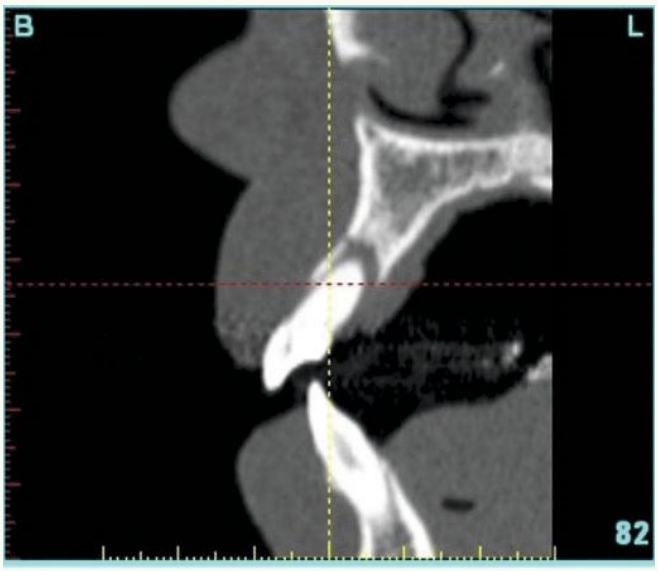


Figure 6: LCPA teeth 46 and 47



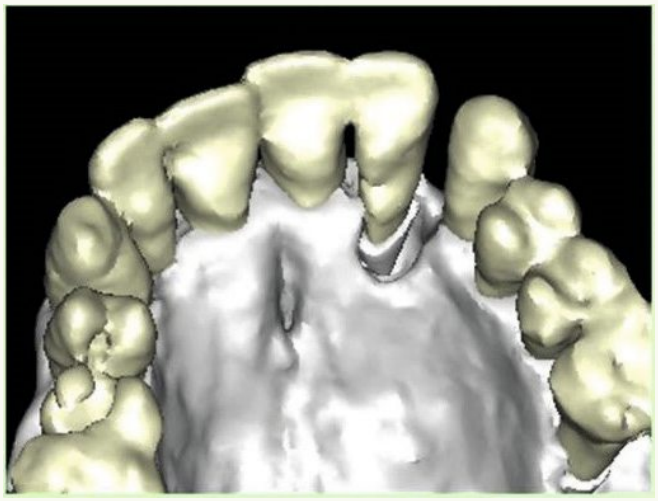


Figure 7: Screen shots of CT scan images showing bone loss several millimetres beyond the apex of tooth 22 and the crater defect on its disto-palatal surface.

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 precise diagnosis of tooth 22 and 26 was not made, but the options considered were this was, potentially, a perio-endo lesion or an endo-perio lesion; however, such a diagnosis is notorious difficult to make.[1]

Post-examination discussion and consent

The discussion was made particularly difficult by the patient repeatedly asking me, "Are you being serious? I'm only 41!" Each time he repeated this, I used it as an opportunity to emphasise how his age provided the context for the severity of the disease and his very high susceptibility to it. We discussed the removal of many teeth including the ones his dentist had requested – this led to heightened exasperation and a less than desirable shift in the conversation to there being insufficient bone for the predictable straight-forward use of dental implants. We talked over each other as he continued to repeat, "I'm only 41!", and endeavoured

to explain the potential need for some bone grafting. I described the procedural complexities, limitations, and resorption and failure rates[2] associated with grafting. His frustration boiled over on the topic of peri-implantitis and my observation that he was a high-risk candidate.[3,4] In his frustration and disbelief, he actually left the surgery when I asked him to consider the 'shortened dental arch' concept.[5] Fortunately, he subsequently accepted my advice and we proceeded to work together, and continue to work together, to maintain his teeth.

Treatment in brief

The initial treatment plan was agreed and broadly divided into:

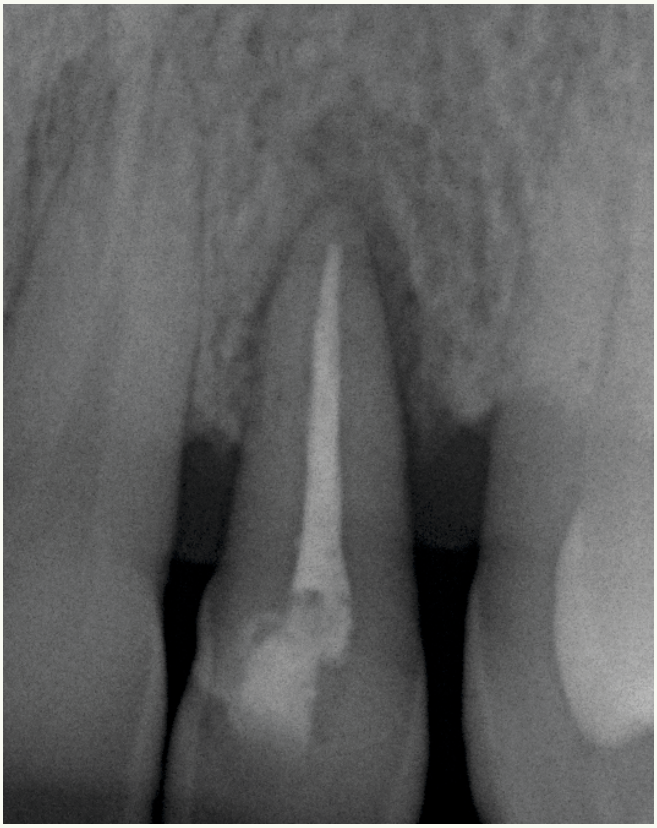
1. Cause related therapy and oral hygiene advice.
2. Endodontic therapy of teeth 22 and 26.
3. Surgical debridement of all pockets above 3mm to include root resection of disto-buccal on tooth 26.
4. Extraction of tooth 17, 37 and 47
5. Review and revise.
6. Orthodontic therapy to close the spaces between the upper lateral incisors and the canine teeth.
7. Review and revise.
8. Maintenance therapy.

Phase 2, 3 and 4 of the treatment plan was completed in October 2007; it was performed as a full mouth approach in two treatment sessions over two consecutive days (phase 2 on the first day and phases 3 and 4 on day two). Sutures were removed after ten days and SPT was provided once a month for three months before extending to three monthly intervals.

At reassessment, a year later in October 2008, the examination revealed a plaque score less than 20% at the dento-gingival margin. The gingivae did not bleed when they were gently stimulated with a probe and bleeding on probing was reduced to below 20%. Residual periodontal pockets had been reduced to below 2mm and elevated pockets had been completely eliminated. The patient had not noticed the loss of his second molar teeth and he was still able chew as he had done previously. Radiographic assessment of tooth 22 revealed resolution of the periapical area with some bone infill, tooth 26 demonstrated no further bone loss. The patient decided not to proceed with orthodontic therapy and commenced maintenance therapy.

Outcome

The patient has complied with this long-term plan, which started in 2007, continuously without interruption. During this 18-year period, his periodontal condition has remained stable. A few years after the treatment was completed, he apologised for being, 'unacceptably awkward' at the initial consultation and every year since he has recalled several stories of friends of his who have had problems with their dental implants – always crediting his excellent homecare



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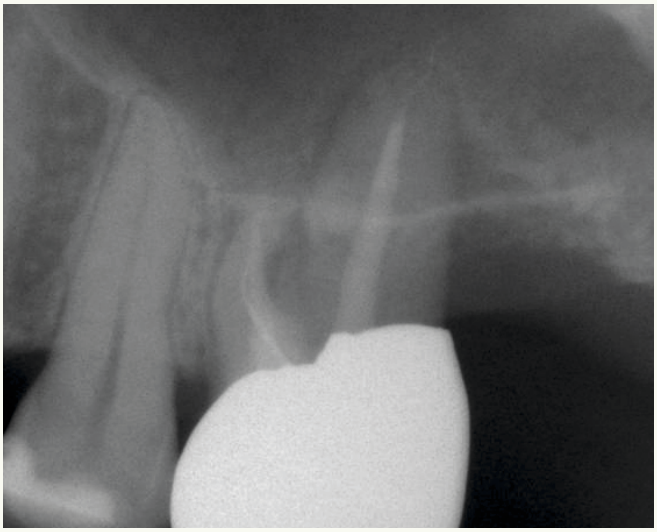

Figure 5: LCPA teeth 36 and 37

for his good fortune. I always remind him that he has been lucky – so far.

Reflection

In cases like this I rely on endodontic therapy as the first phase of bone regeneration. Often, if not always, some bone regeneration occurs. When symptoms develop or radiographs demonstrate regression or further bone loss the tooth is removed.

The importance of ongoing honest and open communication between clinician and patient, and continued patient motivation and compliance, are fundamental to a positive outcome.

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