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A challenging multi-disciplinary implant case

Nilesh R Parmar presents an interesting case study



Implant patients rarely present themselves with a perfect site for implant placement. Frequently, patients present with the need for a multi-disciplinary approach such as mild orthodontics, periodontal treatment, restorative treatment, oral surgery and endodontics. Implant therapy tends to slot in somewhere between all of these disciplines.

In this article I demonstrate a case example of a patient who presented to me needing almost all of the above. Tackling such large cases can be a daunting task, but with careful treatment

planning sessions and good diagnostics, they can be tackled, predictably and reliably.

This patient presented to me, not wanting any specific

'He was aware that he had let his oral condition deteriorate over the years and felt now was the time to do something about it'

treatment such as whitening or implant therapy, but



Fig 2



Fig 3

Fig 1-3. Initial presentation

simply wanting to "fix" his mouth. He was aware that he had let his oral condition deteriorate over the years and felt now was the time to do something about it.

Mr C presented with missing posterior teeth, evidence of severe wear and a missing UR1, which was a primary concern for him. Thankfully

uneventful; a previous episode of gastric reflux, coupled with an acidic diet and a stressful job may have contributed to his tooth wear. At the examination visit he was no longer suffering from gastric reflux, had adjusted his diet, and was now semi-retired. He was also a non-smoker.

Lengthy discussions were had with the patient and his wife in to the available treatment options for him. A CBCT scan showed available bone volume and is a great diagnostic aid in planning large cases such as this.

The goals of his treatment were:

1 To maintain his excel-

lent oral hygiene

2 Restore his vertical dimension and improve the appearance of his worn teeth

3 Provision of posterior support either by dentures or implants

4 Regular reviews with oral hygiene instruction, monitoring of any evidence of parafunction or tooth wear

The patient did not want a removable solution and so an implant orientated solution was devised.

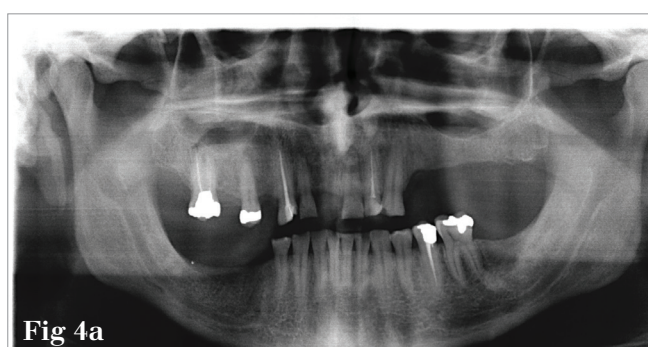


Fig 4a

Fig 4a Pre op OPG

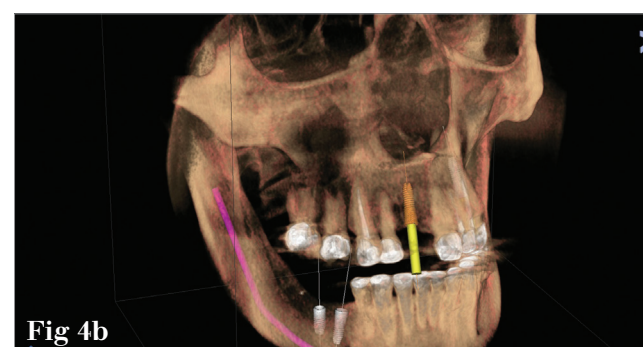


Fig 4b

Fig 4b-4c CBCT surgical planning

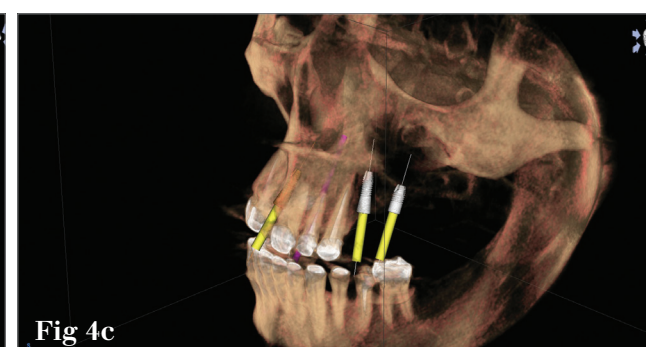


Fig 4c

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The agreed treatment plan was:

1 Fabrication of upper and lower articulated study models and diagnostic wax ups

2 Restoring of the occlusal vertical dimension, using composite build ups as per the diagnostics

3 Fitting of an upper partial denture at the new OVD

4 Assessment of the patient's speech at the new OVD, assessment of the TMJ and parafunction

5 Implant placement in the UR1, LR56 UL46 regions with an autogenous bone graft to restore the buccal defect at the UR1 site.

6 Upper and lower Enlighten tooth whitening

7 Hygiene therapy as necessary

8 Fabrication of a four unit bridge replacing the UR7654, implant bridges replacing the UL654, LL56 with a single-unit crown replacing the UR1

9 Fitting of a nocturnal splint

10 Review appointments at one month, three months and then six monthly

The composites were placed using a conventional two stage etch and bone technique. I used Empress direct composite and ExciteF bond (both by Ivoclar.) In cases such as these I like to free hand the composites to begin with, refining the

contact points and shape as the treatment progresses. I find that this means a lot less time in the chair for the patient, and it also becomes less intensive for me.

Once I was happy with the OVD a temporary upper partial denture was fabricated to further help with diagnostics. The UR1 was lost many

pronounced step defects in the alveolar ridge height posteriorly. This could only have been rectified with a much larger graft (hip), which was something the patient was unwilling to have done.

Once the OVD was stabilised implant placement was carried out. This was spread over two visits under local

placed. This was to develop the delicate soft tissue profile and to assess colour, length of tooth/incisal edge. After a six-week period, the UL1 was prepared to receive a ceramic crown, fixture level impressions of all the implants including the bridgework was taken in impregum (3M ESPE). Along with a facebow record, photographs and an occlusal registration.

The implant bridges were fabricated as screw retained units for simple retrievability. The long span bridge in the URQ was a precious metal fused to porcelain bridge and was cemented using Panavia. The UR1 was an Atlantis Zirconia abutment (Astra Tech) and E-max (Ivoclar) crowns were used to restore UR1 and UL1. The implant crown was cemented using TempBond, with the crown being cemented with Variolink (Ivoclar).

The composite build-ups were further refined and polished to balance the patient's occlusion. This was a complex case, requiring a joint oral surgery, perio and implant treatment plan. The patient was very pleased with the final result and is wearing an upper

'In cases such as these I like to free hand the composites to begin with, refining the contact points and shape as the treatment progresses'

years ago and the buccal envelope in this region had become concave. This would make a natural emergence difficult with the implant crown and make the final restoration look as if it was placed on top of the gum as opposed to erupting through the gingivae.

To help improve the aesthetics a combination of an autogenous and bovine graft was used at the time of implant placement. The patient also presented with

anaesthetic. The implants placed were Astra Tech Osseospeed TX implants. The UL6 was placed using the DASK internal sinus lift kit, with the bond for the UR1 labial graft being obtained from the ramus. The patient healed without incident and the implants were left for three months to integrate.

Once the implants had integrated the UR1 implant was exposed and a composite provisional restoration was



Fig 5-7 Appearance after free-hand composite build-ups with upper acrylic denture in place



Fig 8. Autogenous and bovine bone graft at implant stage 1 UR



Fig 9. Closure of the UR1 implant site



Fig 10 Two weeks healing



Fig 11-13. Preparation for posterior bridge and implant impressions



Fig 14. UR1 provisional composite crown on an Astra Tech TempDesign abutment



Fig 15-16 Shade taking UL1



Fig 16. UR1-UL1 E-max crowns



Fig 17 Final bridgework in-situ



Fig 18



Fig 18-19 Appearance of final restorations

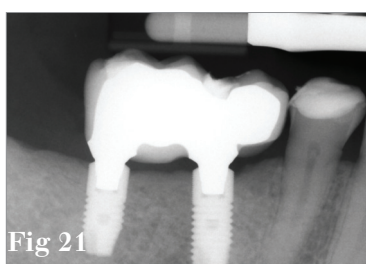
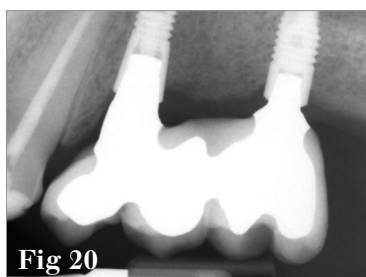


Fig 20-21 Baseline radiographs

night guard (at my insistence) due to the small chance of him bruxing. So far there have been no breakages or any evidence of this occurring. I will be seeing the patient every six months and he will see my hygienist four times a year.

I would like to thank Richard Green at Implant Design Solutions for his expertise and assistance with this case. DT

About the author



Dr Nilesh R. Parmar BDS MSc MSc was voted Best Young Dentist in the East of England in 2009 and runner up in 2010. He was short-listed at the Private Dentistry Awards in the category of Outstanding Individual 2011. Nilesh has master's degrees in Prosthetic Dentistry from the Eastman Dental Institute and a master's degree in Clinical Implantology from Kings College London. Nilesh is one of the few dentists in the UK to have a degree from all three London Dental Schools and is currently studying for his 3rd MSc in Orthodontics. His main area of interest is in dental implants and CEREC CAD/CAM technology. Nilesh runs a successful 5 surgery practice close to London and is a visiting implant dentist to two central London practices. Nilesh was voted the 8th Most Influential Person in UK dentistry by 'Dentistry Magazine' 2012, the youngest person in the Top 10. Nilesh regularly speaks for national and international meetings including The Dentistry Show 2012 Future Dentist Conference, the IDA in Jaipur and for Sirona in Germany and the USA. His direct and easy-going presentation technique makes him a sought after speaker in Europe. Nilesh has a never-ending passion for his work and is famed for his attention to detail and his belief that every patient he sees should become a patient for life. He offers training and mentoring to dentists starting out in implant dentistry, more information can be found on his website.

'The patient was very pleased with the final result and is wearing an upper night guard (at my insistence) due to the small chance of him bruxing'

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