

Educating the patient

Nilesh Parmar describes an implant restoration case that posed an interesting treatment planning dilemma

Introduction

The more new patient consultations I see, the more I am beginning to learn that patients don't always know what they want. Specifically, patients don't walk into my surgery saying 'I want an implant' or 'I want some periodontal gum treatment'. Patients arrive with symptoms, and it's usually our job to give them a suitable treatment plan based upon that.

Patient's main complaint

This man arrived to see me after a recommendation from another dentist. He had recently had some deep decay associated with his UL6 tooth and had an instanding premolar. His problem was the food trapping that he had experienced as a result of this three-tooth triangle which has always been present. He also wanted his teeth to have a



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Education aims and objectives

To gain a greater understanding of how crucial it is to talk the patient through various viable treatment options, including details of future work likely to be required, allowing them to make an informed decision

Expected outcomes

To understand the planning and treatment processes of a comprehensive implant restoration case that included the extraction of two teeth, an implant placement and upper and lower tooth whitening

'spruce up' to enhance their appearance but didn't want anything too drastic.

Presenting symptoms

The patient had recently experienced a fracture of a large amalgam filling on his UR6 molar tooth. The patient was temporarily restored by his own dentist with a glass ionomer restoration and sent to me for a permanent solution. Caries was suspected in the instanding premolar triangle, which the dentist was reluctant to treat.

Medical history

He is fit and well with no allergies and no regular medications. He is a non-smoker.

Dental history

Regular attender

Intra-oral examination, clinical findings

The patient presented without any pain from the UL6. He had a large GIC restoration with a subgingival overhang. The patients UR4 had a large DO amalgam filling. The patient was aware of the difficulty in restoring these rotated teeth due to their positioning; placing a matrix band is a tricky exercise. The patient always felt that the instanding premolar tooth interfered with his bite.

This case posed an interesting dilemma; the treatment options to treat the upper left quadrant are as follows:

1. Restoration of the UL6, extraction of the UL5 (palatally positioned) and a new filling on the UL4. The advantages of this

are cost and simplicity. However, the patient would have a very rotated premolar with the possibility of an unfavourable contact between the UL4 and UL6.

2. Extraction of the rotated UR4, restoration of the UR6 and orthodontic movement of the UL5. The patient did not want orthodontic treatment and would not accept a lengthy treatment plan.

3. Extraction of both the UL4-5, restoration of the UR6 and an implant restoration in the UL4-5 area.

The patient opted for option 3; this was believed to be the best long-term option for the patient if orthodontics was not a possibility. The patient was made aware that the UL6 may require root canal treatment in the future due to the deep nature of the restoration. Due to the spacing in the premolar area, the patient was warned that a small molar tooth (almost like a deciduous E) would be used to fill the edentulous space. This would give the patient maximum masticatory ability on that side. Replacing of the anterior discoloured composites with upper and lower tooth whitening was also opted for.

Treatment carried out

1. Hygienist visits during the course of the treatment.
2. Extraction of the UL4 and UL5 under local anaesthetic with socket preservation using ACE Surgical Collagen plugs.
3. Healing period of two-to-three months.
4. Upper volume Galileos CBCT scan.
5. Implant placement Straumann SLActive

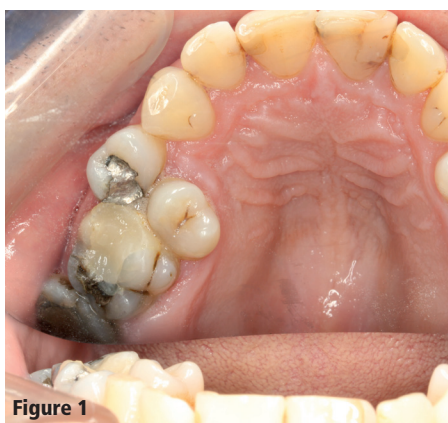


Figure 1



Figure 2



Figure 3

Figure 1: Pre-operative occlusal view; Figure 2: Pre-operative anterior view; Figure 3: Lateral pre-operative view

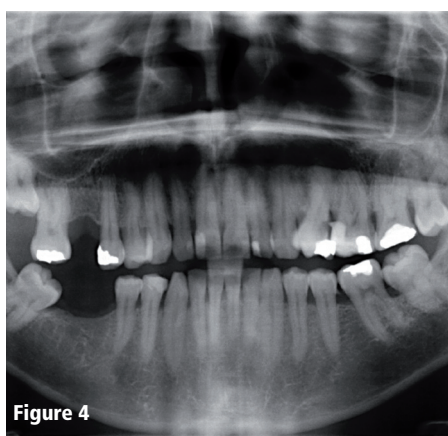


Figure 4

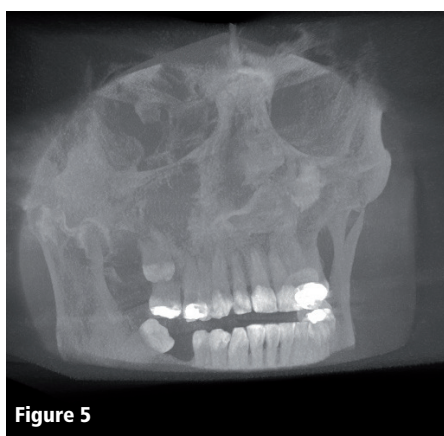


Figure 5

Figure 4: Pre-operative OPG; Figure 5: CBCT image; Figure 6: CBCT implant planning



Figure 6

RN 4.8 x 12mm implant.

6. A healing period of eight weeks.

7. Upper and lower tooth whitening using home trays.

8. Replacement of the discoloured anterior composites using Empress Direct from Ivoclar.

9. Fixture level impressions of the UL4 implant.

10. Fit appointment with subsequent reviews.

The extraction of the premolars resulted in a large alveolar defect with some inevitable bone loss. Although collagen plugs were placed into each extraction site to help maintain the alveolar envelope, buccal bone loss was noted after the healing period. This required further grafting at the time of implant placement using ACE Surgical cortical and cancellous bone granules (Nu-OSS) along with a resorbable collagen membrane (conform Ace Surgical).

Implant placement was under sterile

conditions, using the standard Straumann protocol. A regular neck standard plus 4.8mm x 12mm long implant was used with the SLActive surface. A high primary stability was achieved by partly engaging the sinus floor. The surgical site was closed using PGA 5.0 sutures and a healing cap placed onto the implant. The research tells us that the SLActive implant can be loaded early without any reduction in the implant survival rates (Ganeles et al 2008). The implant site was allowed to heal for six weeks before fixture level impressions were taken to fabricate a screw retained permanent crown. This was torqued to 35Ncm with composite covering the screw access hole.

Whilst the implant was integrating, the patient had his teeth whitening using a conventional night-time tray system and 10% carbon peroxide whitening gel. The patient was kept not to over-whiten his teeth, and ceased whitening once he was happy with the colour of his teeth. The UR6

was restored with a Cerec onlay utilising a Vita Mark II block.

Long-term outlook

Due to the deep cavity on the UL6 the patient was warned that, despite no pulpal exposure being observed during preparation, it was likely that this tooth may become symptomatic in the future and require root canal treatment. Since the treatment was completed six months ago, the tooth has been asymptomatic.

The implant has maintained stable bone levels since placement with minimal probing, no bleeding and a stable restorative interface. The patient's occlusal scheme was changed due to the extraction of the premolars, removing the premature contact and slide into ICP. He now exhibits group function on the left hand side, with canine guidance on the right. The patient reports his occlusion feels a lot more comfortable since the treatment was completed.

This case posed an interesting treatment planning dilemma. Looking back at the options I think most of them were viable, but as a dental professional it is up to us to educate the patient, allowing them to make an informed decision. In this particular case, I agreed with the patient's decision, and both he and I were pleased with the final result. The patient is well maintained and I shall continue to see him at six-monthly intervals to assess the implant restoration.

Care to comment? @AesDenToday

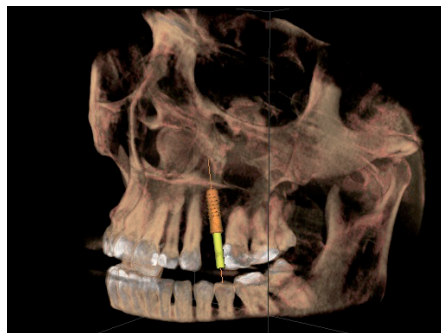


Figure 7: CBCT virtual planning

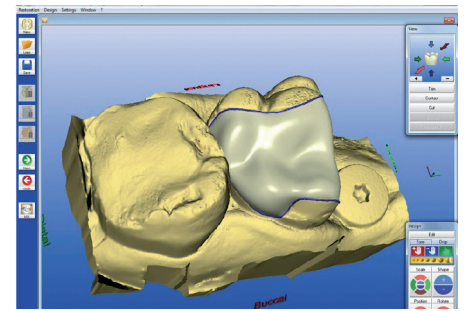


Figure 8: Cerec restoration

References

Ganeles J. Immediate and early loading of Straumann implants with a chemically modified surface (SLActive) in the posterior mandible and maxilla: 1-year results from a prospective multicenter study *Clinical Oral Implants Research* 2008 19 (11): 1119-1128.

Summary of products used

Sirona Galileos CBCT machine
Sirona Cerec AC BluCam
Hu Friedy DR Nilesch Parmar Surgical Kit
Ace Collagen Plugs
Straumann SLActive RN 4.8x12mm implant



Figure 9: Final occlusal view



Figure 10: Final anterior view