Journal of Specialist Dentistry

Developing Dental Expertise

Editorial Board

Welcome to the JSD

Editor, Dr Massimo Peru BDS, MSc Endo

Welcome to the fifth edition of JSD.

We are pleased to announce a new addition to the team, Dr Jashme Patel, Oral Surgeon, and the full time return of our Specialist Orthodontist, Dr Luisa Lucchesi.

In this issue you will find an article from our sponsor, Chiral Systems, and two interesting clinical cases performed by Specialist Endodontist Dr Claudio Peru and Specialist Prosthodontist and Restorative Dentist, Dr Poonam Kalsi.

We would like to invite you to more upcoming Seminars this year so if you are interested in developing your knowledge and practical skills, details of the next CPD seminar events organised by our partners at Chiswell Green Dental Centre can be found at the back of the journal. The seminars are free of charge and valid for two CPD hours.

Best wishes, Dr Massimo Peru

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Repair of Furcal Iatrogenic Perforation with Mineral Trioxide Aggregate: Four Years Follow-up of a case.

Dr Claudio Peru, Specialist Endodontist

INTRODUCTION

Mineral trioxide aggregate (MTA) has been regarded as an ideal material for perforation repair, retrograde filling, pulp capping, and apexification since its introduction in 1993. MTA is a mineral powder that consists of hydrophilic particles, whose principal components are tricalcium silicate, tricalcium aluminate, tricalcium oxide, and other mineral oxides. It has a pH of 12.5, and sets in the presence of moisture in approximately 4 hours. Several studies have demonstrated that its excellent sealing ability and biocompatibility. The repair capacity of MTA can be attributed to the antimicrobial properties and high pH (12.5) of MTA. These characteristics of MTA promote growth of the cementum and formation of bone.

Furcal perforation is usually an undesired complication that can occur during preparation of endodontic access cavities or exploring canal orifices of multirooted teeth. These undesirable situations such as excess removal of tooth structure or perforation occur during attempts to locate canals or as a direct result of failing to achieve straight line access to the canals.

The aim of this long-term follow-up case report is to present a successful treatment of iatrogenic furcal perforation by MTA.

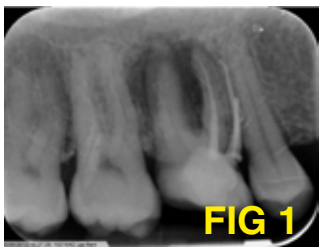
CASE REPORT

A healthy 60-year-old man reported to the Endodontic Department of Chiswell Green Specialist Centre for evaluation of his upper right first molar (16). He reported having a recent root canal treatment carried out by his general dental practitioner. Since the time the work was completed, he was experiencing "an intense burning sensation in the gums around that tooth".

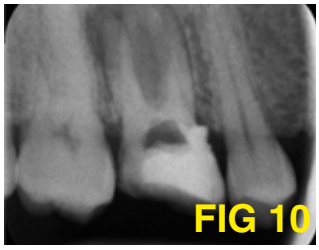
Our examination found tooth 16 sensitive to palpation, and tender to percussion. This tooth was restored with a composite filling. The mean probing pocket depth was within normal level. The radiographic examination showed a large extrusion of gutta-percha through a perforation in the pulp chamber.

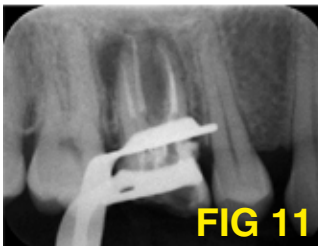
Various treatment options were discussed with the patient. The patient wished to retain his natural tooth and decided to opt to have the UR6 re-root canal treated whilst accepting its guarded prognosis. A written informed consent was obtained before commencing the treatment.

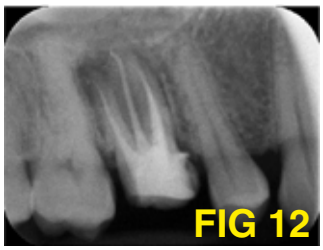
Radiographic examination of tooth 16 revealed an extrusion of gutta-percha through a perforation in the pulp chamber and a large periapical radiolucency (Figure 1).



The tooth was anaesthetised (4% articaine hydrochloride containing 1:100,000 epinephrine) and isolated with rubber dam. The endodontic treatment was performed using the operative microscope (Global SurgicalTM Corporation, St. Louis, MO, USA).

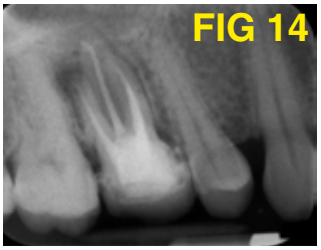


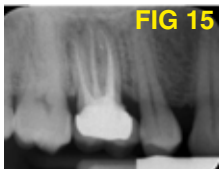


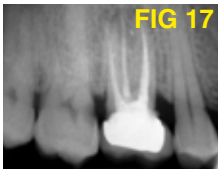


The restorative material was removed and a large perforation was detected clinically on the floor of the pulp chamber. It was noticed that only the mesial canal was obturated and two GP cones were extruded through a perforation created on the floor of the pulp chamber (Figure 3). The hemorrhage was controlled with copious irrigation with 2.2% sodium hypochlorite. The extruded GP was carefully removed (figure 4). The perforation on the floor of the pulp chamber was disinfected using NaOCl 2.2 % and repaired using Mineral Trioxide Aggregate (MTA) (figure 5 and figure 6). A layer of Glass Ionomer Cement (Fuji IX) was used to seal the pulp chamber (figure 7). Four root canals were cleaned using NaOCl 2.2 % and shaped using Protaper (Universal Dentsply, Maillefer, Ballaigues, Switzerland) (Figure 8). The root canal system was medicated using CaOH (Figure 9) and the access cavity was temporarily filled with glass ionomer cement (Fuji IX ,GC America) (Figure 10). During the second appointment, a week later, the root canals were obturated using warm vertical condensation technique using the System B, (SybronEndo Corporation, Orange, CA, USA), the Obtura II (Obtura/Spartan, Fenton, MO, USA) and AH sealer (Dentsply Maillefer) (Figure 11). The access cavity was permanently restored using composite resin (Figure 12). A composite core was prepared (Figure 13) and the tooth was restored with a temporary crown (figure 14). The tooth was finally restored with a permanent crown by the patient's general dental practitioner. At the three-month recall, the tooth remained asymptomatic (Figure 15). The patient was discharged to the care of his general dentist who was asked to inform us of any signs of symptoms of periapical pathology associated with this tooth.

The patient returned to our specialist centre four years later for the endodontic treatment of another tooth. A re-assessment of tooth 16 was then carried out. Radiographic examination confirmed periapical healing and the patient was completely asymptomatic (Figure 16 and 17).







Almost always, it is the patient's wish to retain their natural tooth. In this particular case, all the treatment options were thoroughly evaluated and discussed with the patient before commencing the treatment. The patient fully understood that the prognosis of this tooth was guarded but still decided to try to save his natural tooth.

The developments in the form of reparative materials (MTA), as well the use of the operative microscope can enhance the positive outcome and promote greater success in endodontic cases that were considered to have a poor prognosis.

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How to manage change while introducing a new practice management system

Cristina Sabau
Managing Director of Chiral Systems
shares her tips on an easy transition

Bringing new technology into your dental practice can increase productivity, patient communication and ensure better compliance. However, implementing a new practice management system can be a daunting prospect. As a business owner, the potential downtime, drop in productivity and revenue during the transition from an old system or paper notes to a new system, can be a major concern and can sometimes prevent business owners from moving to the right patient management system. Apart from financial and data transfer worries, getting every employee on board can often be a challenge. So what should you do?

Choose your system wisely

When you're shopping around for new technology, bear your team's interests in mind. Functionality is critical, but so is user friendliness. For a high adoption rate within the organization, make sure you're choosing the most approachable and intuitive system possible. The questions we get from dentists and nurses are: 'Is it difficult to learn?' and 'How will it change the way I work?' If a system is instinctive, flexible and customisable, then it shouldn't change the way you work. The system should adapt to your practice's workflow and reflect the style of your practice.

Articulate your case

Persuading your team to adopt a new technology requires putting forward a compelling vision for what the technology can bring to the organisation and to the individual employees. You have to make employees understand what's in it for them. Perhaps the fact that it will help the practice reduce admin time and consequently reduce overtime. Or how the increase in productivity could allow for a bonus system or even a promotion. The more positive the buzz around technology, the more you engage and motivate people. Nevertheless, it is important that you lead by example and empathise with your team.

Customise Training

Training plays a crucial part in minimizing downtime and avoiding issues that could be arising when treating a patient in the dental chair. Considering that familiarity and interest in digital technology varies widely among staff, the training efforts should reflect those differences. Some employees may prefer an online training session; others might need a bit more hand holding and on site support. Always ask the team member what kind of training they are most comfortable with and appoint training champions.

Managing change, the Chiral Way

From design point, Chiral Systems accounted for the way each individual within your practice works, by creating an effective workflow and minimizing chance of error. Apart from designing an intuitive product that adapts to the way you work, we have also produced numerous online training materials which we have now made available to all our clients. Nevertheless, our very capable training instructors are happy to come to your practice for training days, or even to hold your hand on the 'go live days'. Furthermore, if you need to call us, there is always a real person, with ex-user experience, available at the end of the line and happy to guide you through the system.

Business Bite Back

Are Your Business Interests Protected?

Every dental practice knows that it can take years to build up a loyal patient following but a matter of days for this to be destroyed by an ex-associate. Normally, a practice seeks to protect its goodwill by adding restrictive covenants into contracts.

However, will your covenants stand up in court if you need to enforce them later down the line?

The courts are very weary when it comes to enforcing restrictive covenants, as they do not want to restrain trade. Therefore, if a clause is drafted too widely, without consideration for the business interest you are seeking to protect, it is unlikely that it will be enforced.

In order for a restrictive covenant to be enforceable you must show that:

1. You have a *legitimate business interest* that needs protecting; and
2. The protection is *no more than necessary* in all the circumstances.

It should be noted that a court will not amend a clause to make it more reasonable and therefore enforceable; they will simply reject it, leaving you unprotected. Therefore you need to carefully consider what protection you need.

If you need advice on the enforceability of your covenants or assistance with re-drafting current clauses, we can assist you with this. Getting them right from the start can be relatively cost effective compared to the alternative; lost business and profits.

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Implant Retained Overdentures

Dr Poonam Kalsi, Specialist Prosthodontist

An implant retained overdenture (IROD) is a removable prosthesis supported by the residual oral tissues and retained by dental implants (Vere et al. 2012). They can be especially useful for the edentulous mandible, where many patients often struggle to develop the necessary neuromuscular control required for function.

Many quality of life studies have been undertaken which demonstrate that patients with implant retained overdentures report greater satisfaction when compared to patients with conventional dentures (Emami et al. 2009). Masticatory function has also been shown to be superior (Bakke et al. 2002).

In the edentulous mandible, the current evidence supports the use of 2-4 implants, either splinted or non-splinted (Galluci et al. 2009), however in the maxilla, it has been suggested that 4-6 splinted implants are required to allow for the relatively poorer bone quality.

There are numerous methods of attaching the denture to the implant including: locators; bar and clip attachments; studs and magnets. The former probably represent the current most commonly used attachments.

The two cases below illustrate different methods for using implants to retain overdentures.

Case 1: Implant retained maxillary overdenture utlising a bar with locator attachments.

A 50-year-old patient presented with an existing fixed implant supported bridge replacing her missing anterior teeth which had been present for over 15 years (A). There were no significant problems with any of the implants, but her remaining dentition had started to fail with a number of teeth having been extracted. This had led to the bridge anteriorly being put under more occlusal loading and the porcelain had started to fracture.

As there was very little bone present in her posterior maxilla, and she was not keen for extensive grafting, the decision was made to convert her to a removable prosthesis. Following the construction of a wax try-in, a fixture level impression was taken and a titanium CAD-CAM bar was constructed with locator attachments incorporated into the design (B&C). Although it had been psychologically challenging for her to accept the move towards a removable prosthesis, she was very happy with the outcome (D).

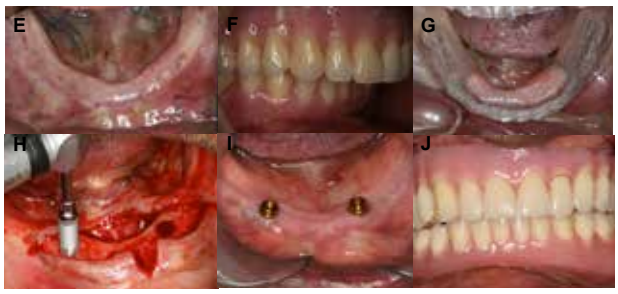
Case 2: Implant retained mandibular complete denture using locator attachments.

A 66-year-old male edentulous patient presented with a long history of problems wearing lower dentures due to his extensively resorbed lower ridge (E). His existing dentures were reasonably well constructed, however his severe skeletal II pattern had not been taken into account. In an attempt to achieve an 'ideal' class I incisor relationship the lower anterior teeth had been positioned too far labially causing the strong mentalis muscle to constantly destabilise the prosthesis.

The first stage of treatment involved constructing a new set of conventional dentures (F). Although these were a significant improvement on his previous attempts, he still struggled to function. Two dental implants were then placed within his mandibular canine regions and locator attachments were used to retain the denture (G&H). This patient was also very pleased with the outcome of his treatment and reported a significant improvement in function (J).

References:

Bakke M1, Holm B, Gotfredsen K. Masticatory function and patient satisfaction with implant-supported mandibular overdentures: a prospective 5-year study. Int J Prosthodont. 2002 Nov-Dec;15(6):575-81.



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DENTAL INDUSTRY AWARDS 2015: INNOVATION OF THE YEAR WINNER

Upcoming CPD Events

As part of Chiswell Green Dental Centre's committal to dental excellence we periodically organise evening seminars on different dental related subjects. These seminars are free of charge and valid for two CPD hours. **To register for your place please contact our reception team on 01727 800 372 or email info@chiswellgreendental.co.uk** Registration with refreshments starts at 6.00pm and the course begins at 7pm.

The next available seminars will be:

- Oct 19th Dr Claudio Peru - Endodontics
  Achieving predictable success with endodontics
- Nov 18th Dr Kostas Ioannidis - Endodontics
  Management of dental trauma, from guidelines to Clinical Practice
- Seminar dates for 2017 will be announced in the next edition

Lunch & Learn

Book a "Lunch & Learn" session. We can visit you or you are welcome to bring your team to us. Let us show you the practice and give you a quick overview of the different treatment options available to your patients. We will provide a light lunch with refreshments. Just let us know how many members of your team will attend and each person will receive training worth 1 CPD hour. A certificate will be issued.

If you would like to participate in these sessions please email info@chiswellgreendental.co.uk or call us on 01727 800 372 for more information.

If you would like to refer a patient to one of our specialist dentists please complete the below form or request a referral pack by calling our reception team on 01727 800 372.

Private referral form

Practice and referring dentist details

Referring practice .....
Practice address .....
.....
.....

Referring dentist details:

Patient details

Patient's name.....
Patient's address.....
Town/City.....Post code: .....
.....

Male/female.....
Date of birth.....
Home telephone.....
Mobile.....

Treatment required:

Orthodontics	Endodontics	Biopsy
Implants + Restorations	Endodontics + Crown	Crown Lengthening
Implants placement only	Prosthodontics	Opinion only
Periodontics	Oral Surgery	Other Treatment (please specify below)

Reason for referral/provisional diagnosis.....
Treatment carried out to date.....
Medical and dental history .....
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