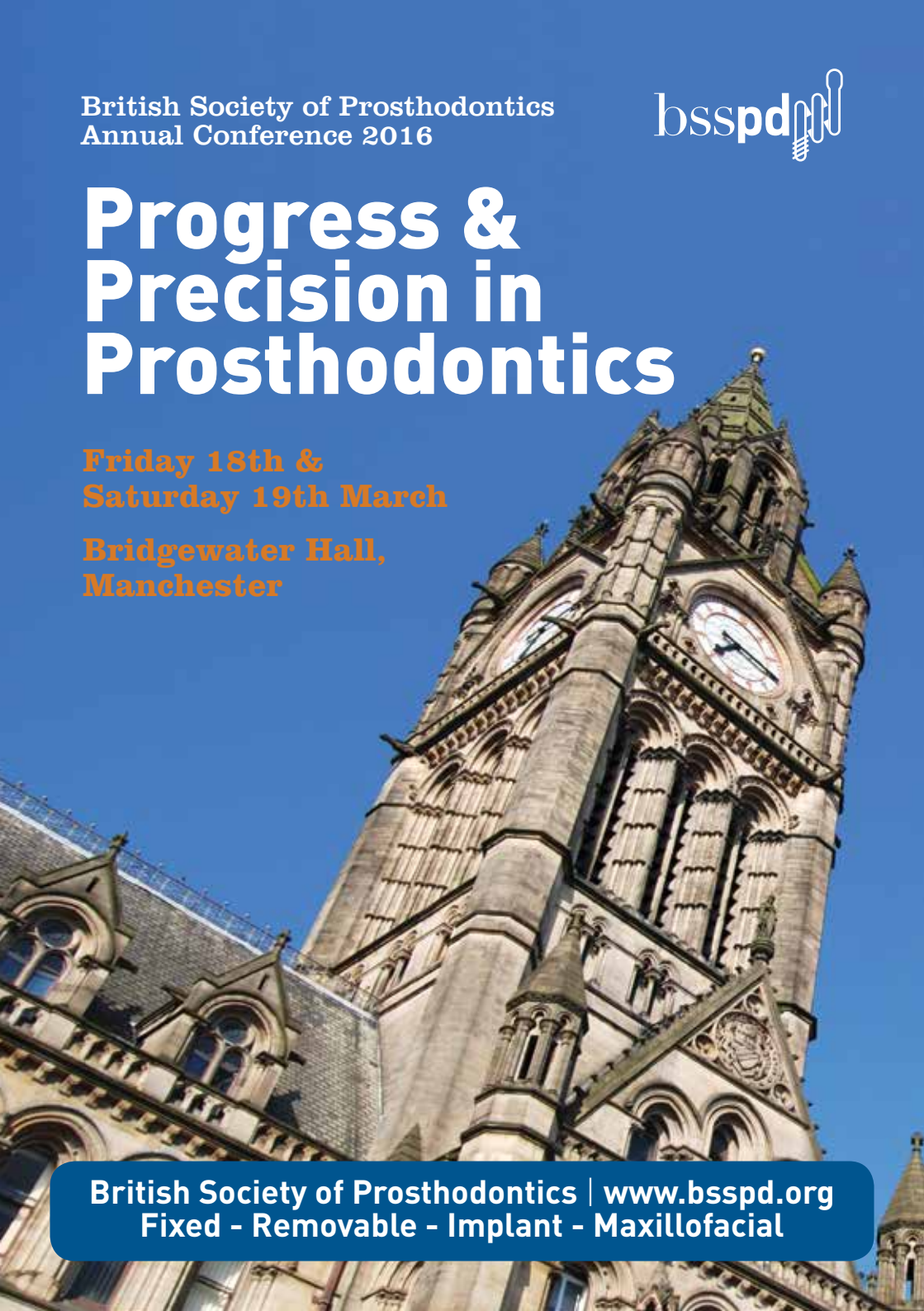
British Society of Prosthodontics
Annual Conference 2016

bsspd

Progress & Precision in Prosthodontics

**Friday 18th &
Saturday 19th March**

**Bridgewater Hall,
Manchester**



British Society of Prosthodontics | www.bsspd.org
Fixed - Removable - Implant - Maxillofacial

Welcome

Welcome to Manchester and the iconic Bridgewater Hall! It has been many years since the British Society of Prosthodontics conference came to the city and it is a great privilege to be able to showcase Manchester and its proud industrial heritage (and apparently there are a couple of football teams playing this weekend!). Given the increasingly prevalent use and discussion of implants in prosthodontics, I cannot help but reflect on the fact that screw standardisation has its roots (sorry, no pun intended) in Manchester with the work of Whitworth, whose name and influence, along with that of Turin, Dalton, and Rutherford, still abounds.

Taking inspiration from the work of a great many local scientists, the theme for the conference is 'Progress & Precision in Prosthodontics', with the aim being to show how advances in technology and greater understanding of disease processes mirror a background and history of precision work. In our quest to keep pushing forwards with technological advances, we should remember that progress without precision is a meaningless pursuit – in the ever-increasing quest for change and 'improvement' I sometimes worry that issues of quality (technical and patient-centred) fall below the threshold for consideration; our speakers are internationally known for their work and will help us all to redress this balance and aspire to the level of work that they regularly achieve – I am delighted and grateful that such well-known and respected clinicians have committed their time to share their experience with us.

We also have a couple of Saturday morning workshops; one led by Nigel Rosenbaum demonstrating the Biofunction Prosthetic System on a patient, the other a treatment planning workshop with Kushal Ghadia and Carly Taylor. As always, there is the opportunity for members to display their research work and I encourage all to visit the posters and engage with presenters – one of the overriding driving factors for my increasing involvement with the Society has been the friendliness of fellow members; the ability to be able to present one's research in such a supportive and engaging environment is a great strength of ours. Similarly, the Schottlander Oral presentations take place on Saturday

morning and as ever, I must thank Dr Brian Schottlander for his unwavering support of the Society.

The conference dinner will take place in the Town Hall; a tremendous venue steeped in history just a few minutes walk from the conference venue. For those extending their stay, there also are many attractions to visit in and around Manchester, both historical and contemporary, from museums, galleries and country houses, to boutique and big-brand shopping.

My thanks go to all our sponsors who are supporting us this year – please do remember to visit each of their stands and also remember to sign in to register for your CPD. I must also thank the conference team and BSSPD council for their on-going work to make the Society the success that it is.

Professor Julian Satterthwaite
President BSSPD 2015-16

Contents

Conference programme

Friday 18th March

08:15	Registration and coffee
	[Session Chair: Peter Briggs]
09:00	**Welcome and Opening of 2016 BSSPD Conference** Nicholas Taylor, Dean of Postgraduate Dental Education, HENW
09:15	**Functional aesthetics and precision communication** Dr Chris Orr, Advanced Dental Practice / Advanced Dental Seminars, London
10:30	Coffee and trade
	[Session Chair: Peter Briggs]
11:00	**Restoration of teeth: digital scanning and milling** Dr Rupert Austin, King's College London Dental Institute
12.15	Lunch, trade and poster display
	[Session Chair: Julian Satterthwaite]
13:00	**Removable prosthodontics: an alternative to implants** Dr Anil Shrestha, Lister House International Centre of Excellence in Dentistry, London
14:15	Tea, trade and posters
	[Session Chair: Julian Satterthwaite]
14:45	**When all is lost, what can we do?** Dr Nigel Rosenbaum, one80dental Centre for Advanced Dentistry, Sheffield
16:00	**Panel discussion**
16:30	Session close
16:45	**British Society of Prothodontics AGM**
19:00	Drinks reception at Manchester Town Hall
19:30	Conference dinner at Manchester Town Hall

If you are presenting a poster please note that this will need to be put up on your allocated poster space at the conference venue by 10:00 on Friday. You are asked to stand by your posters between 14:15 and 14.45 to answer questions from the delegates and judges. The posters do not need to be removed until Saturday afternoon.

Saturday 19th March

08:30	Registration and coffee
	[Session Chair: Phil Smith]
09:00	**Schottlander Research Prize Presentations**
09:00	**Parallel workshop 1 led by Nigel Rosenbaum** 'Clinical demonstration of precision complete denture construction, as a definitive solution, or in treatment planning more complex restorative options'. Nigel will be demonstrating the Biofunctional Prosthetic System using a real patient.
09:00	**Parallel workshop 2 led by Kushal Ghadia** 'Treatment planning skills for early career dentists'. Kushal is Consultant in Restorative Dentistry and Chair of young BSSPD Practitioners.
10:30	Coffee and trade
	[Session Chair: Neil Poyser]
11:00	**Implant superstructures: digital scanning and milling** Mr Steve Campbell, Nexus Dental Laboratory, Harrogate
12:00	Lunch and trade
	[Session Chair: Mike Fenlon]
13:00	**Prize results**
13:15	**Prefabricated fibula and functional prosthetic rehabilitation** Dr Rutger Schepers, University Medical Centre, Groningen
14.15	Tea and trade
	[Session Chair: Mike Fenlon]
14:45	**Rapid prototyping of facial prostheses** Professor Julian Yates, University of Manchester
15:45	**Panel discussion**
16.00	**Handover to New President and Conference Close**

Invited speakers

Dr Chris Orr

Functional aesthetics and precision communication

Chris is one of the UK's most prominent cosmetic dentists, who practices cosmetic and restorative dentistry in his multidisciplinary clinic in central London.

Dr Rupert Austin

Restoration of teeth: digital scanning and milling

Rupert is currently a Clinical Lecturer and Specialist in Prosthodontics at King's College London Dental Institute. His research focus is enhancing diagnosis and treatment of dental hard tissue pathologies using innovative imaging technologies.

Dr Anil Shrestha

Removable prosthodontics: an alternative to implants

Anil is a skilled and highly experienced General Dentist and is also registered with the GDC as a Specialist in Prosthodontics. He specialises in complex patient treatments and has a particular interest and ability in high quality restorative, cosmetic and implant dentistry, including all aspects of implant surgery.

Dr Nigel Rosenbaum

When all is lost, what can we do?

Nigel is a specialist clinician, working in Sheffield and Derbyshire, where he undertakes all aspects of implant and advanced restorative/reconstructive dentistry. His main area of interest lies in the replacement of missing teeth. He is extensively involved in training, teaching and mentoring dentists within the field of implant dentistry, primarily at the University of Sheffield.

Dr Rutger Schepers

Prefabricated fibula and functional prosthetic rehabilitation

Rutger is a Maxillofacial surgeon at the University Medical Center Groningen. He has a special interest in 3D virtual treatment planning.

Mr Steve Campbell

Implant superstructures: digital scanning and milling

Steve is a registered dental technician with 23 years experience. Working as part of a small skilled team at Nexus dental laboratory he provides solutions for all aspects of restorative dentistry, but especially implants due to many years of the early CAD/CAM and beta testing work for implant and milling companies.

Professor Julian Yates

Rapid prototyping of facial prostheses

Julian is Professor of Oral & Maxillofacial Surgery at the University of Manchester. His areas of specialist interest are facial deformity, facial trauma, oral and maxillofacial implantology and trigeminal nerve repair. He also undertakes research in the field of stem cell therapies to enhance nerve and corneal repair and regeneration, and developing methods of CAD/CAM manufacture of customized hard/soft tissue prostheses.

Schottlander oral presentation abstracts

Death by Dirty Dentures?

VE Hannah*, LE O'Donnell, K Smith, CJ Nile, DF Lappin, L Cross, D Robertson, J Bagg, G Ramage

University of Glasgow Dental School
Email: victoria.hannah@glasgow.ac.uk

Introduction: Globally, 810 million people are aged 60 years or over, a figure that is expected to reach two billion by 2050 (22% of the entire global population). Denture use in the population increases with age. Approximately 20% of the UK population wear some form of removable denture. Many of these aging individuals experience a general decline in oral and systemic health and so become increasingly susceptible to opportunistic infection.

Pneumonia, a leading cause of death attributable to infection in patients aged 65 years and older may be related to oral bacteria emanating from the oropharynx. Aspiration of gastric or oropharyngeal contents can result in a potentially life-threatening respiratory infection. Dentures have been shown to support the growth of denture plaque biofilm, a complex community of bacteria and yeasts. Given a denture's close proximity to the respiratory tract, denture wearers are potentially at increased risk of aspiration pneumonia (AP) due to inhalation of denture plaque biofilm.

Aim: Few studies have inspected the denture surface for the presence of respiratory pathogens. The aim of this study was therefore to develop a specific and sensitive quantitative PCR (qPCR) assay to analyse denture plaque for the presence of a panel of 9 known respiratory pathogens: Legionella pneumophila, Klebsiella pneumonia, Staphylococcus aureus, Streptococcus pneumoniae, Pseudomonas aeruginosa, Moraxella catarrhalis, Streptococcus pyogenes, Chlamydophila pneumonia, Haemophilus influenza B.

Method: 130 patients (mean age 70.4 years) attending a Prosthodontic Clinic at Glasgow Dental Hospital were examined for the presence of denture stomatitis (DS), the severity of which was recorded using Newton's Classification. The dentures of these patients were sonicated in phosphate buffered saline to remove denture plaque. The total DNA was extracted from the sonicate and specific primer pairs, representing the respiratory pathogens listed above were used to perform qPCR.

Results: The dentures of 84 patients were found to carry respiratory pathogens. 6 species were identified across this cohort: P. aeruginosa, M. catarrhalis, S. aureus, H. influenza B, S. pyogenes and S. pneumonia. 26 dentures were colonised by 2 or more of these pathogens. Clinical diagnoses indicated that 37% of all participants were suffering from DS. S. aureus was found to be most prevalent and ubiquitous in both healthy patients (40 participants) and in the presence of DS (27 participants). Methicillin resistant strains of S.aureus were identified only from patients with DS. However, there were no significant differences in the prevalence of respiratory pathogens on dentures between healthy and inflamed mouths. In terms of denture hygiene, a greater proportion of dentures worn overnight were found to carry S.

pneumoniae, and an increased median number of S. pneumoniae were detected on those dentures ($p = 0.041$ and $p = 0.038$, respectively).

Conclusion: This study demonstrates that dentures are a reservoir for respiratory pathogens. Older denture wearers, with risk factors such dysphagia and COPD may be at greater risk of developing AP related to respiratory pathogens residing upon their denture. Implementation of routine denture hygiene practices and removal of dentures at night could help to reduce the potential risk.

Digitally Designed and 3D Printed Metal Alloy Removable Partial Dental Prostheses

S-Q Jones*, R Maggs, P Clarke, L Addy

Cardiff University
Email: QUENTINJONES@TALK21.COM

The ability to design partial denture frameworks using digital technology has been available for a number of years. Digital data from contact or light source scans of poured models may be used to create virtual models. These virtual models enable the dentist-technician team to design a virtual metal framework on a computer screen. Complex software is used to optimise design elements such as paths of insertion and undercuts and enable storage of this data for reuse.

A digital file of a virtual prosthodontic framework may be used to enable a computer aided manufacturing process to mill an object from a solid block of material or use an additive manufacturing process to construct a wax or polymer based pattern or framework which may then be (invested and burnt out) used in a traditional laboratory lost wax casting process.

The ability to design prosthodontic frameworks with precision provides opportunities and challenges to the clinician and technical team alike. Technical advances now enable initial frameworks to be 3 D Printed in metal alloys.

This paper outlines the combined use of digitally created files of complex partial denture virtual frameworks with the innovative manufacturing capability of a selective laser melting process to print metal alloy powders into a three dimensional prosthesis.

The presentation describes some of the essential technical and laboratory steps, the challenges and significant benefits of using this innovative technology in the production of complex prosthodontics frameworks.

We will discuss elements of our experience in using this revolutionary 3d metal printing technology in fabricating other prosthodontic products and make reference to clinical findings and technical, laboratory and clinician -technician feedback .

Development of an optical impression system to register position of dental implants in fibula flaps - preliminary results

S Nayar

Misericordia Community Hospital, Alberta, Canada
Email: suresh.nayar@covenanthealth.ca

Purpose: Oral rehabilitation after resection of benign tumours in the head and neck region can be either with a prosthesis or with surgical reconstruction and dental implant restoration. With the advent in the use of customised fibular flaps (modified Rohner technique) in the management of benign tumours, the treatment period has significantly been shortened. One of the steps in this technique involves placement of dental implants in the fibula bone and impression capture to transfer the position of the implants to the dental laboratory for fabrication of an interim prosthesis for the next phase of treatment. Till date, conventional dental impression techniques have been utilized involving silicone impression material. However, this presents challenges, the most important being the use of an unsterile impression material in a sterile surgical field. This research project was instituted to overcome this challenge by developing a non-touch optical impression system to capture the position of the dental implants in the fibula. Preliminary results with the use of a low-cost prototype multi-camera system in evaluation of precision in an in-vitro model are presented.

Methods: A multi-camera system was designed to capture a three dimensional space positioned at approximately 20 cm from the camera rig. The camera system consisted of four 5 megapixel cameras (Raspberry pi) which were oriented in a rectangular array and attached at an angle to the normal of the rig. This provides a rectangular area approximately 5 cm x 4 cm shared by all the camera views. The camera system was calibrated using a planar checkerboard pattern. Four equidistant implants were positioned in a linear array in an in-vitro model. The implants were milled using a high-precision milling machine (nominal precision: 0.01 mm) and also had white custom made spherical flag of diameter 9.525 mm. The software used could automatically detect the spherical flags from the images captured. The distance between the flags were calculated and compared to the known distances. The variables that were considered included the colour and texture of the backdrop, amount of lighting, angle of the image capture, distance from the image, and length of the fibula to be captured among others.

Results: The system successfully recorded the flag positions when white plastic spheres had black backdrop irrespective of the amount of lighting (range: 130-80,000 lux) but reflections from the backdrop sometimes prevented the automatic capture and readjustment of lighting was necessary. However, when using light blue tissue to cover the backdrop, the contrast was not sufficient for the automatic capture. The distance between the implants and the camera rig had to be close to 20 cm but could be easily visually adjusted. The system was able to capture implants with a maximum centre-to-centre distance of 4.5 cm. The captured distances deviated from the known nominal values by up to 200 microns.

Discussion: The camera system could automatically find the three dimensional location of the spherical flags when the contrast between the spheres and the background was sufficient. The variables that were seen to affect the precision of the images captured included the colour and surface texture of the implants, the contrast between the implant and the backdrop, distance from the image and the length of the

fibula to be captured. To extend the maximum length of fibula that can be captured without stitching the images together, more cameras are needed or the cameras have to be placed further apart from the fibula. The first alternative would also enable higher precision which might be reduced with increasing camera distance.

Flexural Strength of a Novel Leucite Glass-Ceramic.

D Sumal*, M Cattell, Professor R Ibbetson

Barts & the London
Email: sumal_deepak@hotmail.com

The aim of this research was to produce a high strength, aesthetic, leucite glass-ceramic to be used as an indirect restorative material. The Experimental Glass-Ceramic mean biaxial flexural strength was to be compared with that of IPS Empress Esthetic, the present leucite glass-ceramic market leader.

The Experimental Aluminosilicate Glass containing (in mol %) 3.00% Li2O, 69.18% SiO2, 10.49% Al2O3, 12.66% K2O, 1.22% CaO, 0.94% TiO2, 1.87% Na2O, 0.69% B2O3 was batched and synthesised using melt methods. The Experimental Glass and Glass-Ceramic was characterised by Density measurements, X-Ray Diffraction (XRD), High Temperature X-Ray Diffraction (HTXRD), Dilatometry, Differential Scanning Calorimetry (DSC) and Scanning Electron Microscopy (SEM). 30 sintered Experimental Glass-Ceramic discs were produced for biaxial flexural strength (BFS) testing. A ball-on-ring fixture was used with a crosshead speed of 1mm/minute. The data was analysed using a t-test and weibull statistics.

The XRD results confirmed the Experimental Glass was amorphous. The HTXRD showed the formation of two crystalline phases, leucite and sanidine, occurring during the heating temperature range of 750oC and 1000oC. Above 1000oC only leucite was present. The SEM indicated the best tetragonal leucite glass-ceramic microstructure formed through a 596oC/1 hr nucleation hold and 1040oC/30 minute crystal growth hold with a 20oC/minute heating rate, with no microcracking visible in the glass matrix. This heating cycle was used to form the Experimental Glass-Ceramic. The BFS test yielded a mean (SD) biaxial flexural strength to be 205.5 MPa (35.3 MPa) for the Experimental Glass-Ceramic, which was statistically higher ($P<0.05$) compared with the IPS Empress Esthetic glass-ceramic.

Through the improvements in the glass-ceramic microstructure, a leucite glass-ceramic was produced with a significantly higher mean biaxial flexural strength compared with that of the present leucite glass-ceramic market leader, IPS Empress Esthetic ($P < 0.05$).

Schottlander poster presentation abstracts

Laser Application In Modern Dental Medicine

D Agop Forna*, C Stelea

Code 001

University Of Medicine And Pharmacy 'gr.T.Popa', Iasi,romania
Email: drdorianaforna@gmail.com

Background: Laser technique facilitates the practical execution of interventions on both hard tissues (regularization, slicing, and apicectomy) and on soft tissue (frenectomy, gingivectomy, incision, curettage, ablation of cysts, granulomas).

Material and methods: For a number of 60 cases we used both the Biolase laser system, and Kavo Key 3 laser, noting differences compared to the classical surgical technique, on the basis of duration, pain, bleeding, sterilization, and by comparing two laser systems.

Results: For the Biolase system we obtained decreased time of execution, higher accuracy, and higher sterilization than for Kavo system. Rigor and difficulty to finish the maneuvers were by 2% higher for Kavo than for Biolase system.

Keywords: surgical laser, classical surgical intervention

Generalised tooth wear, Full mouth rehabilitation and CAD/CAM implant retained magnetic partial over denture

A Alabdullah

Code 002

Cardiff University
Email: dr.asnan32@gmail.com

Introduction: Tooth Surface Loss "TSL" is a phenomenon that describes the non-carious, pathological loss of tooth tissue involving either single or multiple aetiological factors including erosion, attrition and abrasion. Tooth wear is a common clinical finding in ageing as well as young populations and creates diagnostic and management challenges. Restoration of cases with severe tooth wear could be challenging both functionally and aesthetically as many cases require an increase in occlusal vertical dimension (OVD). In this case report, management of tooth surface loss was undertaken using combination of fixed restorations, removable partial denture and an implant.

Aim and objective: The aim and objective of presenting this report to explore the treatment approach of using an implant and a digitally manufactured magnet-retained removable partial denture for full mouth rehabilitation in a tooth wear case.

Background: A 55-year-old partially edentulous male patient was referred to the University Dental Hospital, Cardiff, UK for restoration of his remaining teeth and replacement of his missing teeth to improve the chewing ability and appearance.

Assessment: Full clinical and radiographic assessments including articulated study models and diagnostic wax-up were carried to assess the treatment options,

which were discussed with the patient in detail and an optimal treatment plan was developed.

Management: An implant was placed in tooth position to aid retention and support the removable partial denture. The remaining teeth were surveyed and crowned with parallel guide planes. Metal post keepers were placed in the central incisors. The definitive prostheses were designed using a computerised technology after scanning the cast digitally. Framework was manufactured in cobalt-chrome by laser printing technology.

Conclusion: Precise fitting and well functional removable partial denture can be delivered by using digitalised technology to design the framework. Retention can be enhanced by the use of implant and magnets.

Influence of Zirconia Surface Treatments on Surface Roughness and Shear Bond Strength to Resin Cement

N Alharbi*, R Alamoush, N Silikas, J Satterthwaite Code **003**

University Of Manchester
Email: nada.alharbi@postgrad.manchester.ac.uk

The aims of this study were to investigate the effect of two zirconia surface treatments on i) the surface roughness and ii) the shear bond strength (SBS) to a resin cement. A total of 30 disc-shaped (10 x 2 mm) zirconium oxide ceramics were prepared and polished using 1200 and 2000 grade silicon carbide paper. The specimens were randomly divided into three groups as follows: untreated (Group 1), treated with 9.6 % hydrofluoric acid for 60 min followed by silane coupling agent (Group 2), treated with 30 µm silica coated Al2O3 particles (CoJet system) followed by silane coupling agent (Group 3). A three dimensional (3D) profilometer (Talysurf, CL1 1000, Hobson, Leicester, UK) was used for surface roughness scanning before and after each surface treatment. The data obtained were analysed using Talymap analysis software to quantify the roughness of zirconia surface. Four surface roughness parameters (Sa, Sp, Sv and Sq), were employed. The specimens were then bonded to an adhesive phosphate containing monomer (RelyX unicem 2) using a polytetrafluoroethylene mould (6 x 2 mm). After storing the specimens for 24 hour in a dry condition at room temperature, the shear bond strength was tested using a universal testing machine at a crosshead speed of 0.5 mm/min. Surface roughness and bond strength data where then analysed using one way analysis of variance (ANOVA). Paired t-test was used to analyse the results of surface roughness within each individual surface treatment group. Zirconia surface treatments significantly influenced the surface roughness of all groups ($p < 0.05$), for all parameters measured. Sa values ranged from 1.25 (Group 1) to 4.95 µm (Group 3). SBS values ranged from 1.4 (Group 1) to 7.2 MPa (Group 3). Group 3 had significantly higher values than Groups 1 and 2. Specimens treated with silica coating demonstrated the highest mean surface roughness and shear bond strength values compared to the control and HF groups.

Dental Health Implications of Novelty Sweets Consumption in Children

A Aljawad*, MZ Morgan, R Fairchild, JS Rees Code 004

Cardiff University
Email: jawadayman@yahoo.com

The expansion of the novelty sweets market in the UK has potentially significant dental health implications in children and young adults as their high sugar and organic acid content may contribute towards dental caries and dental erosion.

Methodology

- A list of the most popular novelty sweets was created by undertaking a scoping visits of shops in the Cardiff city centre area, 3 supermarkets and around the school fringe of five schools.
- The pH assessed was using an pH meter, and the neutralisable acidity was measured by titration against 0.1M sodium hydroxide.
- Erosion test of top ten novelty sweets, orange juice and water was performed on human teeth using surfometer.
- Contact angles were measured using Dynamic Contact Angle Analyzer.
- Viscosity of sweets was measured using viscometer.
- Sugar content of sweet was measured using refractometer.

Results

- Novelty sweets were located on low shelves which were accessible to all age-groups in 73% of the shops.
- Price ranged from 39p to £1.
- The neutralisable acidity of eight sweets was statistically significantly higher than the orange juice.
- The pH of eight sweets was statistically significantly lower than the orange juice.
- The erosive potential of seven novelty sweets was statistically significantly higher than the erosive potential of the orange juice.
- Some acidic solutions have wider contact angles, more viscous and with higher sugar content than orange juice.

Conclusion

A wide range of acidic and free sugar sweetened novelty sweets were easily accessible and priced within pocket money range.

Those personnel involved in delivering dental and wider health education or health promotion need to be aware of current trends in children's confectionary.

The potential effects of these novelty sweets on both general and dental health require further investigation.

Prevalence of temporomandibular disorders in edentulous patients of Saudi Arabia

B K AlZarea Code 005

College Of Dentistry, Aljouf University, Saudi Arabia
Email: bkzarea@ju.edu.sa

Aim: To determine the prevalence of various temporomandibular joint dysfunction signs in subjects who were healthy asymptomatic completely edentulous and denture wearers

Materials and method: 400 completely edentulous subjects who did not complaint of any temporomandibular joint dysfunction and were denture bearers with varied denture wearing span were examined for the presence of signs and symptoms of TMDs.

Results: The total prevalence of TMD in the group was 60.5 % (58.75 % in males and 63.12 % in females). More number of females reported signs and symptoms of TMD. More number of patients reported with two signs of TMD. The most common finding was limitation on mouth opening and least common finding was joint noises (crepitus and clicking). The occurrence of findings was not statistically related to edentulous span.

Conclusion: 60.5 % of healthy asymptomatic completely edentulous patients were found to have signs and symptoms of Temporomandibular disorder (TMD). The gender difference was not statistically significant.

Keywords: Complete dentures, edentulism, temporomandibular disorders

The Use of 3D printing in the Construction of Resin-Retained Bridge Framework

JN Ban*, SE Segelman, K Snell, L McNally Code 006

Bristol Dental Hospital
Email: jamesban11@gmail.com

The framework for resin-retained bridges have traditionally been constructed via fabrication of a wax pattern/pattern resin framework by a dental technician which is invested and cast. However various equipment and machines are required for this process, therefore there are associated maintenance implications, wasted alloy and material costs related with this technique.

With the emergence of new technologies in scanning and 3D printing, methods have been developed to aid construction of dental prostheses. It is now possible to scan models and design the resin retained bridge framework via computer programmes, thus allowing electronic designs to be sent to and planned with clinicians, meaning any changes or alternations can be made prior to construction, therefore avoiding unnecessary remakes.

The process involves a 3D printer producing a layer of metal powder which is fused using a laser, a further layer of metal powder is then added and the process is repeated to create the metal framework.

This technique offers many benefits including the ability to create a virtual diagnostic wax up, creation of a wing abutment with a uniform thickness and reduction in errors introduced by thermal movement of the wax pattern prior to investment. It also has the potential to reduce the amount of laboratory time taken to construct the framework.

At Bristol Dental Hospital, University Bristol Foundation Trust resin-retained bridge frameworks are constructed utilising this modern 3D printing technique and we will describe, using illustrations the process by which this occurs along with a detailed discussion regarding the advantages and disadvantages of using this novel technique.

Aetiology and management of the acquired anterior open bite: a case series

HP Beddis*, J Chesterman, MFW-Y Chan Code **007**

Leeds Dental Institute
Email: h.beddis@leeds.ac.uk

An anterior open bite (AOB) is present when there is no contact or vertical overlap between the upper and lower incisors. Development of an AOB is most commonly observed during childhood, with a reported incidence of 2-4%, reducing until the early teens. In children and adolescents, an AOB may develop due to the underlying skeletal and mandibular growth patterns; or due to habits such as digit sucking or tongue thrusting. AOB may also be associated with conditions such as muscular dystrophy and amelogenesis imperfecta. However, adults may present complaining of a newly developed AOB, and the cause may not be immediately apparent.

An AOB may develop in adulthood secondary to bony changes in the jaws e.g. orthodontic relapse, condylar resorption or endocrine disturbance (e.g. acromegaly); or in the teeth e.g. due to differential overeruption of posterior teeth.

In the absence of functional or aesthetic concerns, active management may not be indicated beyond monitoring the condition. Management strategies include restorative, orthodontic and surgical modes of treatment, and a multi-disciplinary approach may be required.

This poster will present a series of adult cases where an AOB has recently developed. Potential aetiological factors and management strategies will be discussed. Examples of restorative management are included via planning and execution of occlusal adjustment, placement of restorations and provision of partial dentures.

The Cracked Tooth: Current opinions on the diagnosis and management amongst attendees at the British Society of Prosthodontics Conference in 2015

G. Charan*, R. Porter, S. Eliyas Code **008**

Great Ormond Street Hospital
Email: gcharan44@yahoo.co.uk

Background: ‘Cracked tooth syndrome’, described as an incomplete fracture, involving the dentine of a vital posterior tooth, which may extend to the pulp, was introduced by Cameron (1964). The incidence of cracked teeth is primarily in 30-50 year old patients and is associated with the presence of intra-coronal restorations. Mandibular second molars have the highest occurrence. Many authors have proposed

different classifications and aeitologies of cracked teeth, with varying diagnosis and management strategies.

Aim: To gain an understanding of the varying opinions on the diagnosis and management of a cracked tooth, amongst attendees at the British Society of Prosthodontics Conference in 2015, held in London.

Method: Views were gathered using a structured written questionnaire. A series of closed questions were based on a case with a cracked tooth, which was referred to the Restorative Department at Guy's Dental Hospital. Supporting photographs, history and examination findings were detailed. The questions explored opinions on aeitology, confidence in diagnosing (rated on a scale of 1-low to 5-high), diagnostic tools, management, survival and prognosis of cracked teeth.

Results: Questionnaires were handed out to all 325 attendees at the conference, with a response rate of 75.4% (n=245). After excluding 36 incomplete questionnaires, 209 (64.3%) completed questionnaires were analysed.

Of those included in the analysis, 40.7% were Vocational and Dental Core Trainees (VT&DCT), 20.1% General Dental Practitioners (GDP), 16.3% Post-Graduate trainees (PG) and 23% Specialists and Consultants (Sp&C). Overall, 30% worked in a Hospital setting, 22% in a purely NHS practice, 23% in private practice and 41% in mixed practices.

All respondents chose 'cracked tooth' as a differential diagnosis. Other aeitologies selected included 42.6% 'pulpal', 13.4% 'carious', 3.8% 'periodontal' and 0.9% other.

78.4% of all respondents treated between 1-5 cases of cracked tooth per month, with GDP reporting the largest number seen. 64.6% of Sp&C reported a confidence level of 4 or above in diagnosing cracked teeth, whereas 80.7% of VT&DCT, GDP and PG chose level 3 or below.

Selection of diagnostic indicators was evenly distributed between the groups. Patient symptoms (58%), Tooth Sleuth (96.7%) and removal of existing restorations (86.1%) were the most popular. SP&C did indicate other tools, such as a microscope.

The most favoured treatment options were placement of direct composite (61.2%) or a metal onlay (75.1%). VT&DCT and GDP opted for elimination of occlusal contact and full crown options more often, than PG and SP&C.

The most common opinion of survival rate for cracked teeth was 1-3 years. The highest survival rates were reported by GDP and the lowest by VT&DCT. The extent of the crack, pulpal involvement and restorability were the most commonly cited prognostic factors for failure.

Conclusion: The results illustrate varying opinions on the diagnosis and management of a cracked tooth amongst dental professionals of differing training grades. This may be due to the varied treatment ideologies, complexity of management and resources available. Like many other areas of dentistry, the management of cracked teeth still appears to be a 'grey area', requiring further clinical research, to provide evidence based management.

Implant rehabilitation of hypodontia patients: a retrospective clinical study

P Mylonas, D Chatzistavrianou*, PHR Wilson, R Williams Code 009

Birmingham Dental Hospital, Birmingham Community Healthcare NHS Trust
Email: despoinachatzis06@gmail.com

Aims: The management of hypodontia can be challenging and requires multidisciplinary care for an optimal functional and aesthetic outcome. The number of missing teeth, the status and distribution of the remaining teeth and the size of the edentelous ridge will determine the restorative treatment. Implant rehabilitation is commonly used to replace developmentally missing teeth, but the scientific evidence on the survival of implants in hypodontia patients lacks evidence. The aim of this study is to present the outcomes of patients with hypodontia rehabilitated orally with dental implants between the Queen Elizabeth Hospital Birmingham (QEHB) and the Birmingham Dental Hospital (BDH).

Methods: A retrospective analysis of the clinical records of patients treated within the Oral and Maxillofacial Surgery Department at The Queen Elizabeth Hospital, Birmingham and The Restorative Dentistry Department, University of Birmingham Dental Hospital was conducted. All hypodontia patients receiving implant treatment were identified from the Hypodontia Clinic database. Recorded clinical variables were collated and compared with reporting of adverse events with a follow up period of up to 6.7 years.

Results: 67 patients aged 20 to 57 (average age 28) received 304 implants replacing 54.9% anterior and 45.1% posterior missing tooth units. 49% implants were placed in the maxilla and 51% implants were placed in the mandible. 36.5% implants were placed in non-grafted sites and 63.5% implants were placed in grafted sites. Regarding the type of augmentation, mandibular ramus was used in 80.3% of the cases, iliac crest augmentation in 11.9% of the cases and bovine origin xenografts in 7.8% of the cases.

19.4% patients encountered complications after the surgical procedure including 4 fenestration or dehisence type defects around the implant, in 2 cases the graft failed and in 7 patients transient anaesthesia/pareasthesia was encountered in the inferior dental nerve distribution area after the grafting.

3.2% implants encountered restorative complications after completion of the restorative treatment; 40% of these were soft tissue complications, such as gingival inflammation and 60% were prosthodontic complications, such as screw loosening or ceramic fracture. 1 implant failed within the first year of function resulting in a survival rate of 99.6% within the observation period of up to 6.7 years.

The follow up period was 0.1 to 6.7 years with a mean follow up period of 2.7 years. 39.4% implants were reviewed for 0 to 2 years, 57.6% implants were reviewed for 3 to 5 years and 3% implants were reviewed for 6 to 7 years.

Conclusions: There is limited evidence regarding Implant and prosthodontic survival rates for hypodontia patients. Our data suggests 99.6% implant survival rate up to 6.7 years after placement which is higher to outcomes reported in the only other published study of implants in hypodontia patients (Creton et al, 2010) and in non-hypodontia patient studies (Pjetursson et al, 2007).

The surgical and restorative complication rate is similar to other studies in the literature (Esposito et al, 2009, Pjetursson et al, 2007). Bone grafting prior to implant placement carries high success rates but the complication rate was higher in these cases and short implants may have to be considered as an alternative in cases that require vertical ridge augmentation.

The era of monolithic translucent zirconia: Two case reports

D Chatzistavrianou*, S Shahdad, P Taylor Code 010

Birmingham Dental Hospital/Royal London Dental Hospital
Email: despoinachatzis06@gmail.com

Yttria-stabilised zirconia polycrystalline (Y-TZP) ceramics were introduced as a biomaterial in restorative dentistry to eliminate the incidence of bulk fracture in all ceramic restorations. Although, Y-TZP ceramics exhibit high flexural strength and fracture toughness, chipping of the veneering material, reduced translucency of the core and heavy tooth reduction limits their use.

Recently, monolithic translucent zirconia restorations were introduced in an effort to eliminate chipping of the veneering material and minimise occlusal and axial tooth reduction. Less wear to the antagonist tooth and improved aesthetic outcomes compared to traditional zirconia cores were demonstrated in in-vitro studies. Furthermore, these are cost-effective restorations since ceramic veneering is not required.

The aim of this study is to present two case reports demonstrating rehabilitation with monolithic translucent zirconia restorations and discuss the clinical challenges of this treatment modality.

Case 1: A 25 year old female patient with history of trauma to her maxillary anterior teeth received implant supported crowns in the lateral incisors and monolithic translucent zirconia crowns in the central incisors allowing minimal tooth reduction.

Case 2: A 25 year old female patient with amelogenesis imperfecta received monolithic translucent zirconia onlays in the maxillary and mandibular posterior teeth to increase the occlusal vertical dimension and facilitate full mouth reconstruction.

Patients were satisfied with the functional and aesthetic outcome at the end of the treatment and no complications were noticed at the 2 year for the first case and 9 month for the second case review appointment. Although, the use of these materials is increasing further clinical trials are necessary to confirm its clinical application.

Service Evaluation of the Hypodontia Service at the University Dental Hospital of Manchester: the patient journey.

P Clarke*, N Razaghi, M Ashley Code 011

Central Manchester Foundation Trust / University Of Manchester Dental Hospital
Email: pete.t.clarke@gmail.com

Background/Aim: Hypodontia has a prevalence of 6.53% (+/- 3.33%) and frequently has significant impacts on function, aesthetics and psychological well-being. The complexity of case management frequently requires specialist input via multidisciplinary care. In recognition of this challenge, Manchester Dental Hospital

set up a hypodontia multi-disciplinary team (MDT) in 2010. This evaluation aimed to assess timeframes and delays within the patient journey, for the purpose of improving patient information and streamlining care.

Method: A central database of patients attending the MDT clinic (February 2010 - February 2011) was used for retrospective evaluation of the patients' care pathway; those receiving orthodontic and restorative dentistry treatment at the hospital were included. Information was separated into stages and analysed.

Results: 60 eligible patients were identified, 57.6% having completed treatment to date. The predominantly female (61.0%) cohort had a median age of 16.0 years at commencement of treatment. The median time until completion was 4.01 years (+/-1.02 years) with orthodontic treatment averaging 2.20 years and restorative treatment 0.33 years (implant rehabilitation took significantly longer, $p<0.001$). Mean waiting times for: initial referral to the MDT clinic, orthodontic treatment waiting list and between orthodontic and restorative treatments were 157, 237 & 90 days respectively (mean total 488 days). Unsurprisingly a strong correlation was evident between the time of writing interdepartmental referral letters and the delay to seeing the subsequent specialty ($p=0.002$).

Conclusion: The successful management of hypodontia is complex and demands significant resources of labour, materials and time. This service evaluation highlights the significant commitment required of patients and their families, and the likely burden of care they should anticipate throughout their treatment; important for managing patient expectations. Furthermore, modifications to the care pathway for improved efficiency have been recognised

An investigation into the accuracy of copy denture templates produced by rapid prototyping and conventional means

K Davda*, A Keeling, S Dillon, C Osnes, P Hyde Code **012**

Leeds School Of Dentistry
Email: davda.krishan@gmail.com

Background: One of the advantages of a copy denture is the claim to accurately reproduce the smooth surfaces of the patient's original denture. However the accuracy of this reproduction has been questioned by the work of Kippax and Polyzois8,9. A new method of template production using 3D-printing has been advocated by Keeling et al. This study measures the accuracy of the new technique in comparison with the current gold standard method.

Method: Six copies of a single upper complete denture were reproduced by the two methods under investigation. The first method used the traditional 'Copy Denture Technique'. The second method reproduced the denture using 3D scanning and printing. The two methods were evaluated for accuracy using digital analysis.

To produce each digital replica, the upper denture was scanned using an optical 3D scanner (Rexcan DS2, Solutionix, Seoul, Korea). Two separate scans were required – one of the fitting surface, and another of the polished surface. The two scans were merged and resurfaced to produce a 'watertight', printable object. The model was then printed using a stereo-lithographic printer (DWS 020D, DWS Systems, Vicenza, Italy). To validate this scanning process, five further scans of the original denture were

created and processed to produce files ready for printing. The first scan was treated as the 'base scan' and the other five measured against it.

The conventional, and 3D-printed, templates were then scanned for comparison. Each scanned copy template was digitally measured against the original denture scan using a Hausdorff distance filter. This method sampled >500,000 points, uniformly distributed over the surface of the template denture scan, and measured the unsigned distance to the closest point on the surface of the original denture scan. The mean distance of each denture template to the original was calculated; the mean errors, and standard deviations, for the two test groups were assessed for differences using Students unpaired t-test. The mean maximum error was also investigated.

Results: The scanning process showed a mean error of 17µm, and a mean SD of 17µm.

For the templates, the mean errors were 170µm (conventional) and 125µm (3D-printing). The mean SDs were 172µm (conventional) and 109µm (3D-printing). Both measures showed significance at $p < 0.05$.

The mean maximum errors were 1350µm for conventional, and 725µm for 3D templates ($p=0.006$).

Discussion: The accuracy of a complete 3D scan, including post-processing to build a 3D printable digital object is good, with mean deviations of less than 20µm.

The 3D-printed copy denture templates significantly surpassed the conventionally produced templates in accuracy, regardless of the measurement metric used. In particular, the polished surfaces of the 3D-printed templates appeared to remain a close match to the original denture.

The biggest challenge remains in making this technology more readily available in the market place.

Conclusion: 3D-printed copy denture templates were found to be more accurate and more consistent when compared against the conventional method.

Comparing 3D surfaces in a clinically relevant way is difficult. Multiple measurement metrics are one strategy to fully report findings.

Changing patterns in the restorative management of hypodontia patients in secondary care and the future financial challenges

PA Fee*, I Buchanan

Code 013

Edinburgh Dental Institute
Email: patrickfee@nhs.net

Background: Hypodontia describes a condition where one or more permanent teeth are congenitally absent. Prevalence is estimated at 5.5% in white populations. Severity varies widely, from a single missing tooth to the absence of all permanent dentition (anodontia). The introduction of dental implants has transformed prosthodontic replacement of missing teeth. Studies report high success rates in a wide range of clinical situations. However, the cost of provision of a single implant-supported crown is almost £2000 and National Health Service resources for dental implant provision in the UK are limited. The demand for NHS-funded implant treatment outweighs the available resource. Patients with hypodontia are considered high priority

for treatment. With the NHS facing considerable financial pressures the provision of implants for this patient cohort has implications on future planning of NHS resources.

Objective: To review changing patterns in the restorative management of patients with hypodontia in Glasgow Dental Hospital and the associated implications on NHS resources.

Method: A retrospective review of the definitive restorative treatment completed for 100 patients with hypodontia in Glasgow Dental Hospital and comparison with restorative management of hypodontia patients in 2002.

Results: 29% of hypodontia patients were managed with implant restorations, adhesive bridgework 29%, veneers 21%, direct composite resin additions 7%, and 14% received no restorative treatment. In comparison to figures from 2002 – 7% of hypodontia cases were managed with implant restorations, adhesive bridgework 45%, composite additions 32%, and no restorative treatment 16%.

Conclusions: The recent increase in provision of implant restorations in hypodontia cases is comparable to that found in other UK units, with funding difficulties in the provision of NHS-funded dental implants consistently reported8. This problem is likely to increase as financial pressures on the NHS and demand for implant restorations increase and has implications on future planning of NHS resources.

The Referral Pathway in Restorative Dentistry: from receipt to New Patient Consultant clinic

G Fenton*, D Chatzistavrianou, Professor D Walmsley Code 014

Birmingham Dental Hospital, Birmingham Community Healthcare NHS Trust
Email: gavinfenton22@gmail.com

Introduction: The NHS Constitution states that patients have the right to access certain services commissioned by NHS bodies within maximum waiting times or for the NHS to take all reasonable steps to offer a range of suitable alternative providers if this is not possible. National guidelines state 95% of non-admitted service users including dental services will commence their first treatment within a maximum of 18 weeks from receipt of referral. Failure to meet these targets will lead to financial penalties.

The referral pathway includes receipt, scanning and vetting of the referral and the appointment to the new patient consultant clinic. Local guidelines suggest 8 working days from receipt to completion of vetting by consultant; and 12 weeks since receipt to new patient clinic. The aim of this audit was to assess whether processing targets are met, identify potential delays associated with administrative processes and assess the effect of current processes on the 18 week target.

Method: A retrospective audit of 100 referrals for patients on Prosthodontic and Restorative new patient consultant clinics at Birmingham Dental Hospital. Individual weeks were chosen from a 6 month period by random sampling. After applying inclusion and exclusion guidelines 50 patients from each department were eligible. Data was collected using a pro forma on an excel spreadsheet. Data collection included when the referral letter was received, scanned and vetted and when the patient attended the new patient consultant clinic and received their first treatment if required.

Results: Referrals from the Prosthodontic (84%) and Restorative (86%) departments respectively were processed and vetted by consultants within 8 working days of receipt. Patients were seen on Prosthodontic (90%) and Restorative (74%) new patient clinics respectively within 12 weeks of referral receipt. Patients received their first treatment on Prosthodontic (98%) and Restorative (100%) clinics respectively within 18 weeks of referral receipt.

Conclusions: The Prosthodontic and Restorative departments complied with national guidelines in 95% of patients commencing their first treatment within 18 weeks. Delays occurred for patients receiving their new patient clinic appointments. Administrative processes operate well across all departments.

Recommendations for improving patient care include re-assessment of referral criteria and provision of more new patient clinics. Ultimately seeing patients earlier within the pathway allows greater scope for providing initial treatment. Similar issues have been identified in an audit of the Restorative department at the Royal London Hospital. Achievement of referral to treatment targets are a challenge for dental departments on a national level.

Acknowledgements: The authors wish to thank Dr Bardsley, Consultant in Restorative Dentistry, Birmingham Dental Hospital and Dr Claudia Wellman, Consultant in Restorative Dentistry, The Royal London Dental Hospital for their help with this project.

The Prosthodontic Management of a Patient with 'Multiple Chemical Sensitivity': A Case Report

S Franks*, K Mahmood, D Chatzistavrianou, AD Walmsley Code 015

Birmingham Community Healthcare Trust, Birmingham Dental Hospital
Email: sarahlouisefranks@hotmail.com

Introduction: Multiple Chemical Sensitivity (MCS) is a chronic condition, manifesting as allergic reaction to environmental stimuli. These triggers can include low-level chemical exposures, often resulting in subjective non-specific symptoms. Allergy testing and investigations often prove inconclusive for patients suffering with MCS. This condition poses a challenge to clinicians proposing the use of conventional acrylic dental materials; as these contain substances such as polymethyl methacrylate, a monomer sited in causing hypersensitivity reactions.

The aim of this poster is to present the oral rehabilitation of a patient with MCS, with a removable prosthesis and share with colleagues the challenges of this treatment modality.

Case Study: A female patient (45 years old) was referred by her general dental practitioner regarding bilateral upper edentulous spaces that require prosthodontic restoration. With regards to her medical history, she presented with a contact allergy to cobalt and nickel, as well as suffering from Multiple Chemical Sensitivity and a history of bulimia. Previously she had encountered allergic reaction and intolerance to conventional denture acrylic prostheses. However, she had previously been able to successfully wear a thermoplastic nylon denture (Valplast®, Westbury, NY, USA).

On examination, bilateral free-end saddles (Kennedy Class 1), Atwood class 3 ridge form to the upper right and class 4 to the upper left, were present. The remaining

teeth were the upper right first premolar (UR4), upper right canine (UR3), and upper right lateral incisor (UR2). The remaining dentition suffered moderate to severe tooth surface loss, Smith and Knight Index grade 3 and 4. This was attributed to a history of intrinsic and extrinsic acids; bulimia and an erosive diet. Despite an increased freeway space, over eruption of the lower incisors complicated the management of the vertical dimension, as the space needed exceeded that available.

The initial treatment plan aimed to assess the patient's tolerance to a trial base plate, using a hypoallergenic denture base material (Puran HC, Novodent, Liechtenstein). This was followed by an upper mucosa borne partial denture, at an increased vertical dimension. Once posterior support had been provided by the upper partial denture, restoration of the upper anterior dentition was planned, with direct composite restorations UR3, UR2.

Summary: Although the management of patients with an intolerance to conventional denture materials can be challenging, they are rare. The use of provocation challenge tests allow clinicians to assess tolerance of alternative dental materials. Hypoallergenic denture materials are available and their use can be investigated in similar cases.

Unilateral Removable Partial Dentures for Replacing Missing Teeth

WA Goodall*, AC Maxwell, Professor N Martin

Code 016

University Of Sheffield
Email: wagoodall@gmail.com

Removable Partial Dentures (RPDs) are widely used to replace missing teeth in order to restore both function and aesthetics for the partially dentate patient. Conventional RPD design is frequently bilateral and consists of a major connector that bridges both sides of the arch. However, patients who present with a single, unilateral edentulous space may not require or wish for such an extensive appliance. For these patients, bridgework may not be a predictable option and it is not always possible to provide implant-retained restorations. This poster presents unilateral RPDs as a potential treatment modality for such patients.

Through case examples, various aspects surrounding the provision of unilateral RPDs will be explored. The indications and contraindications for their use will be presented, including factors relating to patient history, clinical presentation and patient wishes. Advantages and disadvantages of unilateral designs will also be covered.

Survey of teachers in undergraduate dental schools in the United Kingdom on the current teaching of complete denture definitive impressions: A survey of materials, methods and techniques

M Hayati* and Dr P Hyde

Code 017

University Of Leeds - Leeds Dental School
Email: fy10mh@leeds.ac.uk

Purpose: The purpose of this survey was to identify and compare the different materials, methods, philosophies and techniques taught for undergraduate dental

students in the United Kingdom regarding definitive impressions for complete dentures.

Materials and methods: In October 2015, a questionnaire was emailed to the head of each prosthodontics/restorative department in the 16 undergraduate dental schools in the UK. The questionnaire comprised of 10 questions regarding the teaching of complete denture definitive impression in the undergraduate curriculums.

Results: 12 of the 16 undergraduate dental schools responded, providing a response rate of 75%. All responders (100%) agreed on teaching students to use a special tray for obtaining definitive impressions. The majority (83%) of schools reported using VLC acrylic resin for construction of special trays. All schools taught students to border mould the special tray, with 67% of schools preferring to use tracing compounds for border moulding. The majority of schools agreed on teaching students to use a spaced tray if using alginate or silicone, and to use a close fitting tray if using zinc oxide eugenol paste. The most widely used impression material was addition cured silicone rubber (43%), followed by alginate (29%) and zinc oxide eugenol paste (19%). 75% of schools did not include vent holes in the fabrication of special trays, while 25% of schools did. 8 schools taught the open mouth technique, 2 schools taught the closed mouth technique and 2 schools taught a combination of both.

Conclusion: Undergraduate curriculums agree on numerous aspects regarding techniques and methods of obtaining definitive impressions for complete dentures. However, there is a slight degree of variability in impression materials and philosophies taught to students.

Unilateral RPDs can be constructed in various materials including Acrylic, Cobalt-Chrome (Co-Cr) and Nylon-based (flexible) materials; the benefits and drawbacks of each these materials will be presented. The cases featured will also allow other design and fabrication considerations to be explored.

Whilst their use is not widespread, there are a number of patients who benefit from the provision of unilateral RPDs. They are a useful treatment option to have in the clinicians' armamentarium, but careful case selection is essential for them to be a reasonable and predictable prosthetic choice.

Techniques for the conservative management of Fluorosis

P Hoyle*, L Webb and P Nixon Code **018**

Charles Clifford Dental Hospital, Sheffield
Email: philippahoyle1@hotmail.co.uk

Fluoride from topical and systemic sources has reduced the prevalence and incidence of dental caries over the past few decades. Dental fluorosis results from the excessive consumption of fluoride during tooth development. The free fluoride ions disrupt normal enamel mineralisation during the maturation phase of amelogenesis, resulting in enamel that is porous and hypomineralised at the time of eruption.

As the severity of fluorosis increases so does the porosity and fluoride content of the sub-surface enamel resulting in increased extrinsic staining. Severely affected teeth are more at risk of mechanical surface breakdown.

In his early studies Dean estimated that water fluoride levels of 1.0ppm led to a 10% prevalence of mild or very mild fluorosis in permanent teeth. There is a large

range in the prevalence data across the world, ranging from 7.7%-69% in fluoridated communities, and from 2.9% to 42% in non-fluoridated communities.

Fluorosis can have a substantial impact on dental aesthetics depending on its extent. This in turn can affect a patient's confidence and daily life immensely. Previously severe fluorosis may have been managed in a more destructive manner with indirect restorations.

This poster highlights a conservative approach to the management of severe fluorosis, with a case series of three siblings who grew up in the Ethiopian Rift Valley. The mean fluoride content in drinking water in this area has been found to be 10mg-F/L compared to the World Health Organisation guidelines upper limit of 1.5 mg-F/L.

A combination of microabrasion and direct composite veneers were used to treat the discolouration. This case series illustrates what is achievable in the treatment of severe fluorosis with minimal biological cost.

Survey of UK General Dental Practitioners investigating their impression procedures for complete dentures

N Hussain* and TP Hyde

University Of Leeds Dental School
Email: dn11nh@leeds.ac.uk

Code **019**

Background: A previous survey (Hyde and McCord, 1999) looked at general dental practitioners' (GDP) preferences for impression materials and techniques used in their provision of complete dentures (CDs). Since then, there have been two significant changes for UK dental practice in relation to CD impressions. Firstly UK NHS dental contracts have changed and ceased to remunerate NHS GDPs for the usage of laboratory constructed special trays. Secondly RCTs by Hyde et al (2014) and Jo et al (2015) have established that the use of silicone materials in laboratory custom trays for CD impressions leads to increased patient satisfaction, denture stability and function with a greater oral health related quality of life.

Purpose: To investigate current clinical practice of GDPs in relation to impression taking in the provision of complete dentures in light of contractual change and current research of best practice. This involves comparison of current clinical practice trends with that of reported in 1999. The secondary aim is to investigate the differences between current NHS and private practice.

Methods: 475 questionnaires (adapted from Hyde and McCord's original survey) were posted out to GDPs in the Leeds areas.

Results: The response rate was 48.7% i.e. 229 GDPs (after 5 warranted exclusions from the initial sample).

Overall 28% of GDPs stated they do not routinely provide CDs, with 21% of NHS GDPs and 35% of private GDPs stating they do not routinely provide of CDs.

In relation to primary impressions:

- 68% of GDPs selected alginate solely which is less than GDPs in the survey of 1999.
- 49% of private GDPs and 83% of NHS GDPs solely selected alginate impression material.

In relation to laboratory special tray prescriptions:
- 81% of GDPs stated routine usage of special trays which is higher than 1999 survey
- 67% of NHS GDPs and 99% of private GDPs stated routine special tray usage.

Regarding secondary impressions:
- 73% of GDPs selected alginate as an option.
- 81% of NHS GDPs and 33.6% of private GDPs solely selected it.
- 31% of GDPs listed silicone materials as an option for their definitive impressions.
- 34.2% of private GDPs solely selected silicone materials and 7% of NHS GDPs listed it as an option.

Conclusions

1. Alginate still dominates the market as the material of choice for primary and secondary impressions in NHS practice but its overall use has decreased from the survey carried out in 1999.
2. Silicone materials are becoming more popular for secondary impressions under private contract where it has taken over from alginate as the material most often mentioned for sole usage.
3. Special trays are normal practice amongst the majority of GDPs with 81% using them overall. Under private practice 99% of GDPs reported using them routinely.
4. Reported provision of CDs by GDPs has decreased under both private and NHS practice since the 1999 survey.

A Survey looking at the current practice of UK GDP's for Complete Denture Impressions received by Dental Laboratories from both NHS and Private practices

H Jabbar*, JM Lockwood and P Hyde

Code **020**

Leeds Dental Institute
Email: hummaid.jabbar@hotmail.co.uk

Introduction: Experts agree that high quality impressions are the basis of the fabrication of a high quality complete denture. Before 2014 there was a paucity of Randomised Controlled Trial (RCT) evidence on the best materials and techniques for complete denture impressions. However, two recent RCT's have suggested better dentures are produced using silicone in customised impression trays. The opinion and practice among General Dental Practitioners has been surveyed using questionnaires sent to GDP's. Further surveys, performed in dental laboratories, have investigated the reality of current practice by examining the materials and methods actually used by clinicians. However, there has not yet been a study which has gone to dental laboratories and looked at the differences in current practice between dentures made under an NHS contract and dentures made under a private contract. The aims of this research are to: identify current practice in taking complete denture impressions in both NHS and Private practices, whether any differences exist between quality of impression dependent on its financial arrangement and whether current practice is in accordance with teaching received in UK dental schools.

Materials and Methods: 8 Dental Laboratories were contacted who were known to have a large prosthetic workload. 6 Dental Laboratories were visited and complete denture impressions were inspected by a dental student and Clinician. A pre formed

survey was used to collect data from each impression with regards to different aspects of the complete denture impression.

Results: A preliminary number of 33 complete denture impressions were inspected. 24% (n=8) of these impressions were from private practices. 62.5% (n=5) of impressions from private practices were taken with silicone compared with 20% (n=5) of impressions from NHS practices. 76% (n=19) of impressions from NHS practices were taken using alginate. 37.5% (n=3) of impressions from private practices were border moulded compared to 28% (n=7) of impressions from NHS practices. 0% of trays from NHS practices had been adjusted whereas 25% (n=2) of trays from private practices had been adjusted with green stick. 84% (n=21) of impressions from NHS practices were taken with special trays compared to 75% (n=6) of impressions from private practices. A total of 82% (n=27) of special trays were spaced both in NHS and private practices. Voids were present in 50% (n=4) of impressions from private practices and 56% (n=14) of impressions from NHS practices.

Discussion: A greater percentage of impressions from private practices were taken with silicone when compared to NHS practices. This may be attributed to the cost associated with silicone. As well as this, more trays were adjusted in private practices with green stick when compared to the NHS. This could be as a result of the time constraints found in NHS practices.

Conclusion: 1. Silicone materials were used more in private practices when compared to NHS practices. 2. Special trays had a higher percentage of use in NHS practices compared to private practices.

The role of the overlay denture

RY Jablonski*, HP Beddis, BR Nattress

Code **021**

Leeds Dental Institute
Email: rachaeljablonski@msn.com

Conventional overdentures are removable prostheses which gain support from abutments which often only have a few millimetres of tooth structure remaining supragingivally. Overlay dentures are a subset of overdentures and are utilised in circumstances where a larger amount of tooth structure remains. This type of prosthesis can be used in a number of situations by covering the occlusal/incisal surfaces of teeth in order to re-establish occlusal stability, increase the occlusal vertical dimension and in some cases provide soft tissue support.

Traditionally, overlay dentures were used in the treatment of patients with congenital anomalies such as cleft lip and palate or for patients with limited occlusal contacts due to skeletal discrepancies such as severe class II or III skeletal relationships or posterior open bites. These dentures were also used as an alternative to more invasive fixed prosthodontic options in order to re-establish occlusal contacts in cases of the worn dentition. With the increasing use adhesive techniques, indications for overlay dentures in these situations have decreased. There is increasing evidence that composite build ups are the preferred treatment option for cases which were previously managed with fixed prostheses or overlay dentures.

This poster explores current uses for the overlay denture as both a diagnostic appliance and a definitive treatment option, as well as discussing the advantages and disadvantages of the overlay denture. Overlay dentures may be used as an interim

prosthesis to allow changes to the occlusal scheme to be trialled whilst stabilising oral health. The use of overlay dentures to restore occlusal stability in cases of severe malocclusion is illustrated. Additionally, the use of overlay dentures in patients with tooth surface loss is contrasted with the use of adhesive restorative techniques where patient or local factors may further complicate more complex rehabilitation options. Treatment planning and challenges associated with managing cases of this nature are reflected upon.

Patients' perceptions of implant placement surgery, the post-surgical healing and the immediate fixed and removable implant retained restoration; a qualitative study

WA Kashbour*, NS Rousseau, JM Thomason, JS Ellis Code 022

Newcastle University
Email: w.a.a.kashbour@gmail.com

Objectives: this study aimed to explore patients' thoughts of, feelings about, and experiences of, surgical implant placement; the post-surgical healing stage and the immediate post-surgical temporary implant retained restoration (fixed and removable)

Methods: A qualitative study design was chosen and 38 semi-structured telephone and face-to-face interviews were conducted with 34 patients at different stages of implant treatment (4 patients were interviewed twice after they moved to a subsequent stage). The interviews were transcribed verbatim; the data collection and coding process followed the principles of thematic analysis, which was facilitated through the use of NVivo 10.

Results: Patients anticipated that surgery would be painful and unpleasant but were prepared to accept this temporary discomfort for the expected benefits of implant treatment. However, a key finding was that patients felt they had overestimated the trauma of surgery but underestimated the discomfort and difficulties of the healing phase. A number of difficulties were also identified with the temporary restoration phase immediately following implant surgery.

Conclusion: Existing research has tended to focus on the longer term benefits of dental implant treatment. This qualitative study has investigated in depth patients' perceptions of dental implant surgery, including their experiences related to sedation, and of immediate implant retained restoration. While patients felt their concerns were overestimated in relation to the implant surgery, they experienced struggles related to the healing phase. Recommendations are made for relatively small changes in care provision which might improve the overall patient experience. The partially dentate patients experienced advantages of temporary implant retained restoration more quickly than patients with overdenture.

Keywords: implant surgery; conscious sedation; implant healing; immediate implant supported/ retained restoration; overdenture; fixed retained restoration

The use IPS e.max Press® all ceramic Resin Bonded Bridges for Anterior Tooth Replacement

DP Laverty*, O Addison Code 023

Birmingham Dental Hospital
Email: dominiclaverty560@hotmail.co.uk

Resin bonded bridges RBBs are a well-recognised minimally invasive fixed prosthetic tooth replacement option. There is good evidence to show that RBBs have high success rates and are less invasive than other treatment options such as conventional bridgework. They also have reduced costs and high patient satisfaction.

One of the main disadvantages of metal winged RBBs is the greying effect of the metal wing showing through the abutment teeth (also known as 'shine through'), they also have the disadvantage of a higher corrosion rate, and an allergenic potential to the non-precious alloys used.

Patients are becoming more demanding and have higher expectations for oral health; they also want attractive aesthetic dentistry. This increased aesthetic demand by patients and reluctance for intra-oral metal have led to the devel-opment of metal-free restorative alter¬natives which includes the all-ceramic RBBs.

All-ceramic RBBs were introduced in the early 1990s as a more aesthetic alternative to traditional metal winged RBBs and have been subsequently optimized for the anterior aesthetic region. With continued development in resin and ceramic technology, it is now possible to replace missing anterior teeth with all-ceramic RBBs successfully.

The aim of this poster is to provide a brief overview of all-ceramic RBBs and the advantages and complications associated with these prosthesis and also briefly describe the clinical process involved with case examples using IPS e.max Press® all ceramic RBBs.

Prosthodontics Essential Care Indices Audit

K Mahmood*, V Shah and Professor D Walmsley Code 024

Birmingham Community Healthcare NHS Trust, Birmingham Dental Hospital
Email: kazim.mahmood89@gmail.com

Introduction: The initial assessment appointment is significant to the future success of any treatment undertaken; therefore it has a huge bearing on the future management of the patient. Taking this into consideration it is important to accurately document the findings of this assessment within the patient's dental records.

Aims: The aim of this audit is to evaluate the quality of record keeping in the Prosthodontic new patient clinic appointments. Essential information such as the medical history, medication list completed, clear diagnosis, clear treatment plan and choice of denture material should be recorded at each occasion. All instruments used during the consultation appointment should have evidence of being scanned into the patient records. Following consultation, a letter to the referrer should be scanned into the patient record within 2 weeks of the consultation. There should be evidence of all of the above items in the consultation clinic appointment records in 100% of cases.

Methods: A retrospective audit of clinical notes was performed of patients seen on consultation clinics between September-November 2015. The data was collected and recorded in a digitised data capture form regarding all essential care indices.

Results: It was shown that 96% of records had the medical history completed, with 88% of medication lists recorded. It was found that 85% of patient records had a clear diagnosis and 95% had a clear treatment plan that included a specific denture material in 85% of cases. A total of 61% of records had instruments scanned within the entry and 51% of consultations had a letter addressed to the referrer scanned onto the digital system within the recommended time period.

Discussion: The importance of medical history taking, compliance with infection control tracking and timely provision of a letter back to the referrer are prerequisite of good clinical practice. A new patient proforma for Prosthodontics consultations is to be introduced, which will also assist with undergraduate teaching. A prospective second cycle will be undertaken to assess whether the essential care indices measures have improved and to what degree.

Management of Tooth Wear in Primary Care

AC Maxwell*, JW Vere, PF Wragg

Code 025

Sheffield Teaching Hospitals NHS Foundation Trust
Email: annamaxwell7@googlemail.com

Introduction: Tooth wear is an increasing problem in the United Kingdom as shown by the Adult Dental Health Surveys. Restorative Dentistry Departments receive a significant number of referrals for tooth wear but there is limited capacity within secondary care. The aim of this study was to assess the attitude of General Dental Practitioners (GDPs) towards the management of tooth wear in primary dental care.

Method: A questionnaire consisting of 3 examples of patients with tooth wear was distributed to 119 GDPs. Respondents were asked about diagnosis, prevention and treatment. The questionnaire also included questions on barriers to treatment in primary care.

Results: A response rate of 49% was achieved with 91% and 98% of respondents correctly diagnosing cases 1 and 2 as attrition and erosion respectively. A large number of respondents recommended a preventative strategy or rehabilitation with direct composite restorations in these cases. Only 33% of respondents felt that composite restorations placed for tooth wear would last longer than 4 years. Case 3 shows a patient with more severe tooth wear and 69% of respondents felt that acquired tooth loss was a contributory factor. Dentures were part of most treatment strategies (74%) for this case. Managing the occlusion and changing the occlusal vertical dimension were concerns repeatedly raised.

Barriers to providing treatment in primary care were insufficient training (50%) and experience (55%), insufficient time (59%) and inadequate fee (78%). Over a quarter of respondents (28%) felt that the GDP should not assume responsibility for the maintenance of treatment carried out in secondary care.

Conclusion: GDPs were confident with diagnosing and treatment planning for milder tooth wear and less confident with severe cases. Barriers to managing tooth wear in primary care need to be addressed to allow more cases to be managed by GDPs with support from secondary care.

Evaluation of Restorative Dentistry Specialty Registrars' Clinical Experience of Developmental Disorders: A Survey

C Moore*, S Critchlow, G Quilligan, G McKenna Code 026

Queen's University Belfast
Email: cmoore0217@hotmail.co.uk

Background: Specialty Registrars in Restorative Dentistry (StRs) should be competent in the independent restorative management of patients with developmental disorders, including hypodontia and cleft lip/palate, upon completion of their specialist training. Knowledge and management of these cases may be assessed via the Intercollegiate Specialty Fellowship Examination (ISFE) in Restorative Dentistry.

Objective: The aim of this study was to collate and compare data on the training and experience of StRs in the management of patients with developmental disorders across different training units within the British Isles.

Methods: Questionnaires were distributed to all StRs attending the Annual General Meeting of the Specialty Registrars in Restorative Dentistry Group (SRRDG), Belfast, in October 2015. Participants were asked to rate their confidence and experience of assessing and planning treatment for patients with developmental disorders, construction of appropriate prostheses, and provision of dental implants. Respondents were also asked to record levels of clinical supervision and didactic teaching at their unit, and to rate their confidence of passing a future ISFE station assessing knowledge of developmental disorders.

Results: Responses were obtained from 32 StRs (n=32) training within all five countries of the British Isles. The majority of respondents were based in England (72%) with three in Wales, and two in each of Scotland, Northern Ireland, and the Republic of Ireland. Approximately one third of respondents (34%) were in the final years of training (years 4-6). Almost half of the StRs reported that they were not confident of independently assessing (44%) new patients with a developmental disorder, with larger numbers (72%) indicating a lack of confidence in treatment planning. Six respondents rated their experience of treating patients with obturators as 'poor' or 'very poor'. The majority (56%) rated their experience of implant provision in these cases as 'good' or 'excellent' with three-quarters (75%) rating clinical supervision at their unit as 'good' or 'excellent'. Less than half (41%) rated the didactic teaching at their unit as 'good' or 'excellent', and only 8 StRs indicated that they were confident of passing an ISFE station focused on developmental disorders.

Conclusion: Experience and training regarding patients with developmental disorders is inconsistent for StRs across the British Isles with a number of trainees reporting a lack of clinical exposure.

The Oro-facial Reconstruction of a patient with Squamous Cell Carcinoma of the Left Maxillary Sinus: A Case Report

R Munjal*, K Jones, F Deans Code 027

Royal Derby Hospital
Email: raggimunjal@gmail.com

Introduction: A 62 year-old gentleman was diagnosed with a T4 N2a Squamous cell carcinoma. This case report explores his oro-facial reconstruction and management

following extensive head/neck surgery and adjuvant radiotherapy. It highlights the role of the oral and maxillofacial surgeon, restorative dentist and general dental practitioner in the restorative management of oncology patients.

Case Description: A routine referral to the OMFS department from the GDP. The complaint was of a large, firm swelling on the palatal mucosa; which had caused the patient to lose the retainers of his anterior maxillary bridgework and an acrylic denture to no longer fit. Following histological assessment and CT views, the aforementioned diagnosis was made. The patient underwent a lengthy procedure involving tracheostomy, resection of anterior maxillary squamous cell carcinoma, left DCIA harvest, left modified neck dissection, right extended supraomohyoid neck dissection and microvascular anastomosis. Thereafter, Hyperbaric oxygen therapy (HBO) was provided in Plymouth pre and post extractions of hopeless teeth; which involved a dental clearance. Following this, a sulcoplasty procedure was performed in the neo-maxilla, where 4 dental implants were placed and two further implants in the mandible to support implant retained complete dentures. The gentleman has remained on regular follow-up.

Discussion: This case demonstrates the importance of having neoplasia in your differential diagnosis when a swelling arises in the palate and the need for an urgent referral if concerned. In this instance, the lesion had been present a considerable time resulting in the need for more radical surgery. HBO treatment is regarded as the gold-standard for prevention of osteoradionecrosis. Funding for its use was eventually sort after much deliberation, but this is proving increasingly more challenging in times of austerity. Dental implants have significantly lower success rates in irradiated bone and they should be placed in a secondary care setting; with regular follow-up. The case emphasizes the crucial need for joint-multi disciplinary care in the restorative management of such patients in order to achieve an aesthetic and functional outcome as in this case.

An audit to assess the prosthodontic and endodontic status of cases accepted for apicectomy treatment over a 3 month period by the Intermediate Minor Oral Surgery (IMOS) service in Kent

N Razaghi*, A Elder

Code **028**

Manchester University Dental Hospital
Email: nahal.razaghi@gmail.com

Aim: An audit to assess whether national guidelines on prosthodontic and endodontic status are met for cases accepted for apicectomy treatment by the Intermediate Minor Oral Surgery (IMOS) service in Kent.

Background: The IMOS service allows GDPs to refer appropriate cases to the local minor oral surgery/hospital for apicectomies. Existing guidelines include the RCS 'Guidelines for Surgical Endodontics' and the European Society of Endodontology 'Quality guidelines for endodontic treatment'. Coronal seal has been shown to be a key factor affecting endodontic outcome.

Method: Consent was gained to use retrospective data from accepted referrals including radiographs sent by GDPs over 3 months (1st April 2015 - 3oth June 2015); the same data provided to the triaging clinicians. Detailed data was collected to

assess the quality of referral, prosthodontic status, endodontic quality, functionality and restorability of the tooth.

Data was analysed by a Dental Core Trainee and Restorative Dentistry Consultant to conclude whether criteria for apicectomy treatment were met or if root canal re-treatment or extraction were more clinically appropriate.

Results: 55 cases were accepted for apicectomy treatment and only 4 cases rejected. Majority were maxillary incisors (49%) followed by maxillary premolars (29%). Overall, only 24% cases met recommended guidelines for apicectomy treatment; 54% cases root canal re-treatment and 22% deemed unrestorable. 73% cases were restored with a crown, post-retained crown or bridge-abutment. 44% cases showed inadequate coronal seal radiographically.

Conclusion: The results indicate that current guidelines for apicectomy treatment are not being met resulting in inappropriate treatment on poor-prognosis teeth. Non-surgical root canal retreatment should be first-line management where appropriate to improve prognosis and use of resources. Advised changes include more vigilant acceptance criteria including relevant clinical information by the GDP; accordance with apicectomy guidelines and consideration to involve a Prosthodontist or Restorative Dentist as part of the triaging team.

Evaluation of a malignancy screening checklist of patients with trismus on the Temporomandibular Disorder (TMD) Clinic at University Dental Hospital of Manchester (UDHM)

H Crane, N Razaghi*, S Davies Code **029**

Manchester University Dental Hospital
Email: nahal.razaghi@gmail.com

Aim: A re-audit to ensure compliance with the use of a trismus checklist designed to screen patients with mouth opening <30mm for signs of malignancy to reduce the risk of misdiagnosis.

Background: Trismus is limitation of mouth opening. It has a variety of causes including rarely, malignancy. A checklist was devised in July 2010 following two cases of delayed diagnosis of carcinoma presenting with features of TMD to UDHM. The checklist was designed to alert the clinician to signs and symptoms of possible malignancy. If any 'yes' answers are identified, the flowchart must be followed to guarantee appropriate management. The use of this checklist has been re-audited annually since its introduction to ensure continued patient safety.

Method: For each audit cycle, 50 consecutive new patient notes were examined retrospectively to ascertain whether the checklist was present, whether maximum mouth opening was recorded and where appropriate, the checklist and flowchart completed. The data was analysed and compared to previous audits.

Results: 49 of the 50 cases assessed had the trismus checklist present; mouth opening was recorded in 100%. Of three patients with mouth opening <30mm, two had the trismus checklist completed correctly; the third was recorded manually in the clinical notes. Two cases had one or more 'yes' answers in the checklist however for only one of these cases the flowchart was correctly followed. Compared to previous

audit cycles, a consistent use of the checklist has been shown although there is some variety in the management of patients.

Conclusion: The use of this checklist has made clinicians working on the TMD clinic more vigilant to check for atypical features in patients presenting with trismus. This system has been shown through re-audits to have a high rate of compliance although further work is required to ensure uniformity in use of the flowchart.

The Restorative Management of Hypodontia: Three Case Reports

V Shah*, K Mahmood, D Chatzistavrianou, Professor AD Walmsley Code 030

Birmingham Community Healthcare NHS Trust, Birmingham Dental Hospital
Email: vinayshah1406@googlemail.com

Introduction: Specialists in Prosthodontics and Restorative Dentistry will often be challenged with the rehabilitation of hypodontia patients. The number of missing teeth, the status/distribution of the remaining teeth and the size of the edentulous ridges will often determine the complexity of the restorative management of these cases.

There is paucity of evidence on oral rehabilitation of hypodontia patients making it difficult for young clinicians to adopt an evidence based approach. The aim of this poster is to present the restorative management of three hypodontia cases managed with a multi-disciplinary approach and to share with colleagues the different treatment modalities available for this group of patients.

Case studies

Case 1: A male patient (26 years) with hypodontia affecting all lateral incisors underwent orthodontic treatment to allow ideal distribution of spaces and align upper canines into the lateral incisor positions. Subsequently, the lower incisors were replaced by ceramic resin bonded bridges and the canine shape was optimised by direct composite restorations.

Case 2: A female patient (36 years) with severe hypodontia presented with only the upper central incisors and upper first permanent molars present. A mandibular complete removable prosthesis and two six unit fixed-fixed adhesive bridges were provided in the upper arch. After 10 years this work was still intact and functional. Follow up treatment involved provision of a new lower complete denture using the copy technique and a replacement veneer.

Case 3: A female patient (44 years) with severe hypodontia affecting all laterals and second premolars was rehabilitated with a combination of conventional fixed prostheses, adhesive restorations and strategically placement of implants.

The patients were reviewed up to 10 years after the completion of treatment. All patients were satisfied with the functional and aesthetic outcome of the treatment and all restorations were intact at the review appointments.

Summary: The three cases highlight a range of complexity that these patients can often present with. All the patients were satisfied with the functional and aesthetic outcome of the treatment.

The rehabilitation of patients with hypodontia is challenging and requires multidisciplinary care for optimal functional and aesthetic outcomes. Minimally

invasive techniques and a stepwise approach are the first lines of treatment whilst considering the restorative cycle that patients are inevitably entered into. Moreover, with the lack of robust evidence on management of these patients it is essential that clinical experience is shared amongst specialists and junior trainees to increase the knowledge base.

Acknowledgements to Dr Shakeel Shahdad, Consultant in Restorative Dentistry, the Royal London Dental Hospital and Dr Philip Taylor Consultant in Restorative Dentistry, the Royal London Dental Hospital for their contribution in case 3

An Analysis of Emergency Appointments Within The Restorative Department: A Re-Audit

R Smyth*, L O'Dowd Code 031

Edinburgh Dental Institute
Email: robert.smyth@nhslothian.scot.nhs.uk

Objective: To evaluate the effectiveness of the implemented solution for managing dental emergency patients in the Restorative Department one year after initial audit completion.

Methods: Data was collected retrospectively between 01/01/2015 and 31/03/2015, identifying patients who were booked into emergency slots, or who were listed as emergencies in other slots. The gold standard was that all of emergency patients seen in the department should have a genuine need to be seen, be seen within a 24 hour period and be seen by an appropriate member of staff. In addition to this there should be an appropriate number of slots available so that the clinical time is utilised efficiently.

Results: 38% of emergency slots were used, the time of day was not significant. Slots were less utilised earlier in the week. 22% of patients were seen within 24 hours and 46% were seen in under 48 hours. The most common reasons for attendance included issues with implants and implant dentures and lost restorations. The majority of emergency patients had open treatment plans, however 3 patients hadn't been seen in over a year.

Conclusion: There was a wide variation in types of cases seen as emergencies however, not all those seen as emergencies needed to be seen urgently. We need to provide clarification regarding what constitutes a dental emergency in the context of the Restorative Department. Majority of patients were not seen within the Gold Standard of 24 hours and additional slots added after the first cycle did not of appear of value. Plans to rationalise the number of slots and distribution have been implemented alongside inclusion of information in new patient leaflets regarding emergencies. A further cycle will be completed in one year.

An Audit On Prevalence Of Periapical Pathology In Severely Worn Teeth

S Somi*, Professor J Rees, FAb Raof Code 032

Cardiff University Dental Hospital
Email: SomiS@cardiff.ac.uk

Objective: The aim of this study is to establish the prevalence of periapical pathology in association with severely worn teeth.

Methodology: Thirty patients (18 males and 12 females) with mean age of 48.7 referred for tooth wear in the Cardiff University Dental Hospital were examined. All teeth with a Smith and Knight Tooth Wear Index (TWI) score 2 or above, with tooth wear extending to the dentine had a periapical radiograph taken by a qualified photographer using a Heliodent DS digital x-ray set with a digital phosphor plate , a matching phosphor plate sensor holder and centering device. These radiographs were then examined using IMPAX Web 1000 for evidence of periapical pathology.

Results: Out of 350 teeth radiographed three teeth presented with undiagnosed apical pathology giving an overall prevalence value of 0.86%.The results also showed that of all the samples four teeth (1.14%) presented with evidence of apical pathology with existing root filling and 14 teeth (4.0%) were reported root filled without evidence of apical pathology.

Conclusion: This clinical audit found that 99.1% of teeth with severe tooth wear did not show evidence of apical pathology. This low prevalence was most probably due to the tooth wear itself as a slow process and the response from the pulpal-dentinal defense mechanism. This also raises a question on the necessity to take routine radiographs on worn teeth which involves the dentine.

Management of an Akerly Class IV Case: Deep severe overbite with Severe Tooth Surface Loss

D Sumal

Code 034

Barts & the London
Email: sumal_deepak@hotmail.com

The patient presented with a Class 2 skeletal base, severe attrition on the anterior teeth, loss of OVD, failing root canal treatments on the UL1 and UL2, with chronic apical periodontitis on the UR2

The treatment plan was performed in stages:

- Study casts were mounted in centric relation for further occlusal analysis and to assess occlusal plane changes with alteration of the OVD. I performed a diagnostic wax up of the anterior teeth at a 6mm increase in OVD to determine tooth shape and size. Due to the skeletal pattern and the large overjet present in centric relation for the proposed OVD change, a maxillary denture needed to be provided with a maxillary palatal bite plane. This provided a surface against which the mandibular incisors could occlude and was shaped to allow smooth excursive movements.
- The patient had a gag reflex which made it difficult to restore posterior teeth. The LR6 needed a filling replacement. Due to the patients anxiety for treatment and gag reflex, this procedure was performed under IV sedation.
- Re-Root canal procedures were performed on the UL1 and UL2.
- Primary root canal treatment was performed on the UR2.
- Due to the severe tooth surface loss the anterior teeth were built up with direct composite resin to improve the appearance.
- There was a need to provide a denture with an anterior bite plane, but to ensure the patient was able to tolerate the proposed changes in the OVD, an acrylic trial denture was made.
- Following determining the patient could tolerate the change in OVD, the definitive denture was constructed.

This case showed a method on how to manage a severe deep overbite in a skeletally Class 2 patient. Such cases can be challenging to treat, if not planned carefully. This case shows a series of steps undertaken to control the occlusion to produce a successful outcome.

A hospital wide audit of IRMER compliance at Manchester Dental hospital relating to radiographic reporting

A Tahboub*, S Shah, J Darcey, M Ashley Code 035

Manchester Dental Hospital
Email: ahmed.tahboub@gmail.com

In accordance with current legislation, it is anticipated that there is 100% compliance with IRMER 2000 guidelines suggesting that all dental radiographs will have a documented report. In this audit, 200 records for patients who had radiographs at the hospital were assessed for the presence of a radiographic report. The audit was carried out across 10 clinical areas at the hospital, with 20 radiographs from each area. The results were analysed, and the results were compared to the previous year. The audit led to a hospital wide action plan to improve compliance with IRMER regulations.

Aim: To audit the clinical records of patients referred to the Radiology Department for the completion of a radiographic report for each medical exposure.

Method: A retrospective review of 20 consecutive radiography requests each from ten different departments in the Dental Hospital was undertaken, making a total of 200 cases evaluated.

Results: The overall compliance across the dental hospital was 82%.

Action plan:

- Disseminate results to all clinical staff, post graduate students, undergraduate students
- Add a radiographic reporting and grading field in the recently introduced software across all departments
- Re-Audit once SALUD is active amongst departments

Case report: Denture replica technique using a modified selective pressure impression approach

A Tahboub*, N Grey Code 036

Manchester Dental Hospital
Email: ahmed.tahboub@gmail.com

History: A 65 year old lady was referred to the dental hospital for construction of upper and lower complete dentures. She has been edentulous for twenty years.

The patient required new dentures due to resorption of the alveolar ridge and wear of her dentures. She has multiple dentures by different dentist but was unable to tolerate them.

She presented with a class 5 mandibular alveolar ridge and a class 4 maxillary ridge, with severe resorption and a flabby ridge in the anterior maxillary ridge.

A denture replica technique was used to provide a new set of dentures and a non conventional impression technique was used at the try in stage.

This clinical case outlines an impression technique that combines principles of denture replica and selective impression technique.

A window was cut in the acrylic base in the area covering the flabby ridge, and a selective pressure impression technique was used using medium and soft body silicone for the definitive impression.

The result was a successful denture, which the patient is happy to wear and able to tolerate.

Conference dinner

The conference dinner will take place on Friday 18th March at Manchester Town Hall, Albert Square, Manchester, M60 2LA. The Town Hall is one of the most iconic landmarks in the city. Situated on Albert Square, the Town Hall was opened in 1877. A Grade 1 listed building, which radiates the history of the city is definitely one of the hidden jewels in Manchester's crown.

Drinks reception at 7.00pm followed by dinner at 7.30pm. The dress code is Lounge suit.

During the dinner we will be entertained by Jay Rollins who offers an intimate and engaging style incorporating magic, juggling skills, mind control and elements of cold reading, graphology and mime.

After dinner speaker

Our after dinner speaker is Paul Redmond. With almost 30 years of working in the employment and education sector Dr Paul Redmond has established himself as the employment and generations guru.

Currently employed as Director of Student Life at the University of Manchester, Paul's career includes being the ex-president of the Association of Graduate Careers Advisory Services and the former Director of Employability and Educational Opportunities at the University of Liverpool. With a doctorate in Educational Sociology, Paul knows everything that needs to be known about generations X, Y and Z, the graduate labour market, and how companies and organisations can establish, develop and maintain an engaged workforce.

CPD certificates

This meeting will provide 12 hours of verifiable CPD in total (6 hours Friday and 6 hours Saturday. Delegates wishing to obtain CPD MUST sign in on both days to be awarded the hours allocated for that day.

Following the conference, delegates will receive an email containing a link to the conference on-line feedback form. Once this form has been completed, the CPD certificate can be downloaded.


bsspd
Certificate of Verifiable CPD
This is to certify that
Mr Chris Butterworth
President, BSSPD

Prosthodontics, The future is digital

The British Society of Prosthodontics 2017 Annual Conference

Friday 6th & Saturday 7th April 2017, London

Conference themes

- Digital Prosthodontics – the revolution happening now
- Prosthodontics for the cancer patient
- Prosthodontics for the early career dentist

Conference venue at 155 Bishopsgate

- Spectacular venue in the heart of the City of London
- Simultaneous presentations
  - 550 seat primary auditorium
  - Two other 150 seat lecture theatres
- Modern audio-visual facilities
- Large communal/exhibition areas.

Conference Dinner

- Friday 6th April 2017 at Savoy Place
- 15 minutes walk from Conference venue.

We look forward to seeing you in 2017.

Notes

Schottlander: http://www.schottlander.com
Coltene: http://www.coltene.com
Saxon: http://www.saxonimplantology.co.uk
Southern Implants: http://www.southernimplants.co.uk
Ivoclar: http://www.ivoclarvivadent.com
3M: http://solutions.3m.co.uk
Dentsply: http://www.dentsplyimplants.co.uk
Align Technology: http://www.aligntech.com
NSK-UK: http://www.uk.nsk-dental.com

The society would very much like to thank our most generous sponsors to whom we owe a great deal. Please make time to visit their stands and enter the prize draw.

BSSPD conference booklet, website and member management database by 2020 Design
www.2020design.co.uk