Combating the hypersensitive gag reflex

Mike Gow and Jamie Newlands get their teeth into a particularly hard to handle case

What would top your list of the most frustrating, difficult patient traits to deal with?

For some dentists it might be dental anxiety, restricted patient mouth opening, or perhaps the patient's unwillingness or inability to lie supine. For many other dentists, however, top of their list would be the 'dreaded' hypersensitive gag reflex.

'As the body trembles and the footrest is stamped, large tears roll down from the eyes. The face of the victim takes on the hue of apoplectic purple and the patient gasps for breath, at the same time attempting to eject the intruders from his mouth and his insides with them.' (Feintuch[1]).

Written 55 years ago, this vivid description will probably sound very familiar to many dentists today! It is easy to understand how gagging can compromise the quality of treatment, upset the patient and frustrate the dentist.

Despite advances in dentistry, patients with strong gag reflexes continue to be just as difficult to treat today, as most dentists have little in the way of training in the few techniques that are available. Often, this leaves patients feeling embarrassed, anxious and ultimately may prevent them from obtaining the treatment they need.

This study describes a case that required an approach which we believe is unique in dental practice. We believe this is the first time these disciplines of dentistry have been documented to have been combined in this way.

The gag reflex – a brief overview

The gag reflex is usually a normal, healthy defence mechanism that prevents foreign bodies from entering the trachea, pharynx, or larynx. However, the reflex can become abnormally sensitive.

Physical manifestations may be summarised as gagging, retching, vigorous tensing of lips and circumoral muscles, defensive tongue, hyperventilation, excessive salivation, lacrimation, coughing, sweating and occasionally, vomiting.

Bassi et al[2] presented a useful paper that reviewed literature on gagging from 1940 to 2002. They highlighted the multifactorial aetiology of abnormal gag responses, suggesting that the four main contributing factors are: local and systemic disorder, physiological (anatomical), iatrogenic or psychological.

They observed that there are two main categories of retching patients: somatogenic and psychogenic. However, it may be difficult to differentiate between the two groups, as a physical stimulus may provoke gagging of psychogenic origin.

Milgrom et al[3] believed that the problem may be best viewed as a psycho-physiological reaction that has become over-learned.

Local and systemic disorders and physiological or anatomical factors can be identified by obtaining a detailed history and performing a thorough intra-oral examination. A full dental, medical and social history would reveal any systemic factors, GI problems, breathing problems, and any possible psycho-social factors (sexual abuse, for example).

Somatogenic gagging

The term somatogenic describes gagging that is primarily induced by physical stimuli. Meeker and Magalee[4] identified five intra-oral areas known to be 'trigger zones': palatoglossal and palatopharyngeal folds, base of tongue, palate, uvula, and posterior pharyngeal wall.

Bartlett[5] described how conditions such as chronic nasal obstruction or sinusitis may increase the predisposition to gag. Poor technique on the part of the clinician may cause gagging in a patient who is not normally susceptible – for example, inappropriate positioning of suction tips and instruments, overloaded impression trays, or unstable, overextended or poorly retained prosthesis.

Psychogenic gagging

The term psychogenic describes gagging induced primarily by psychological stimuli. Heap and Aravind[6] state that: 'Psychological contributions are represented by conditioned protective reflexes from earlier experiences or existing stresses and anxieties.'

Classical conditioning can occur, for example; following an incident where gagging occurs as a result of an overloaded impression tray. A neutral stimulus, such as the sight of an impression tray, may then become associated with the gag response.

For more information on psychogenic gagging see Saunders and Cameron[7], who review the literature and present diagnostic criteria, treatment recommendations, and a clinical case.

It is important for the clinician to be aware of the potential situation whereby a history of sexual abuse may be relevant in the aetiology of a sensitive gag response. It is also very important that the dentist avoids 'implanting' any suggestion that this may have been the case, as it may lead

Figure 1

Figure 2

to 'false memory' or 'false suspicion' of such an event.

This author (MG) suggests that it may be best practice to simply ask the patient who presents with a sensitive gag response: 'Can you recall the first time you had the strong gag reflex, or can you recall something specific happening in the past which may have caused it to develop or which made it particularly worse?'

Should the patient then give a history of sexual abuse, be visibly upset without specifically explaining why; if the dentist suspects that there may be a history of abuse for any other reason, or if anything during the session itself arises such suspicion, it would be appropriate for the dentist to consider a referral at this stage.

In such a situation it would be prudent for the referring dentist to simply explain to the patient that they would best be treated by a medically-trained colleague. A careful referral explaining the concerns, to a medical colleague with experience in tactfully managing cases where sexual abuse is suspected would then be the most appropriate action. It is important to remember that further appointments should still be made with the dentist with regards to getting the dental treatment completed!

Case study: Visit 1

A male patient in his mid 40s presented to the clinic in pain, complaining of 'a broken tooth'. The initial consultation with Dr Jamie Newlands revealed that the patient had last attended a dentist approximately ten years previously. From the symptoms that he described it appeared that he had reversible pulpitis relating to the upper right 6 (16), which had a large amalgam restoration. He was conscious of having a food trap and distal cavity on the tooth for some time. He said that he had previously always been 'knocked out' (with intravenous sedation), even for a check up due to his anxiety and strong gag reflex.

The extent of the reflex became apparent when Dr Newlands moved a mirror towards the patient's mouth. When the mirror was approximately one foot away, the patient started to retch. His gagging severity index (GSI) as described by Dickinson and Fiske[8] was therefore recorded as a '5'.

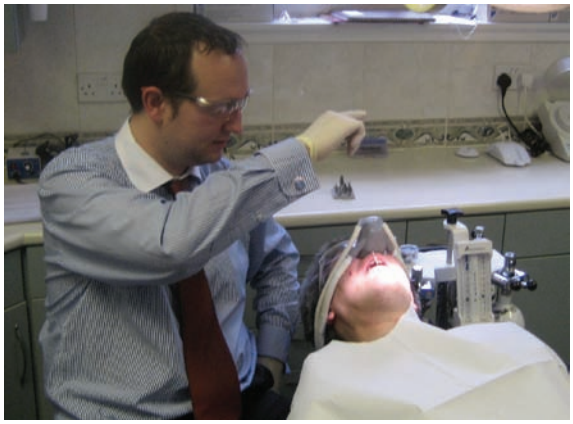

Figure 3

Dickinson & Fiske gagging severity index (GSI)[8]
1: Normal gagging reflex. Very mild, occasional and controlled by the patient
2: Mild gagging. Control is required by the patient with reassurance from the dental team
3: Moderate gagging. Consistent and limits treatment options. Gagging prevention measures are usually required
4: Severe gagging. Gagging occurs with all forms of treatment including simple visual examination. Treatment is limited
5: Very severe gagging. Affecting patient behaviour and dental attendance and making treatment impossible without specific treatment for control of gagging.

To help assess the patient's needs and achieve a visual reference of the dental situation, Dr Newlands asked him to retract his own lip, so that a photograph could be taken of the offending tooth (figure 1). The tooth was tested for tenderness to percussion with a little patient participation, and was thankfully recorded as negative.

The treatment options were discussed, given the apparently vital nature of the pulp, the already heavily restored tooth and the patient's likely inability to tolerate rubber dam.

It was decided that given the history of food trapping, the tooth would best be restored with a ceramic inlay. It was elected to make the inlay in-house using our own Cerec 3D system. This would give the opportunity to design a self-cleansing and anatomically favourable contact

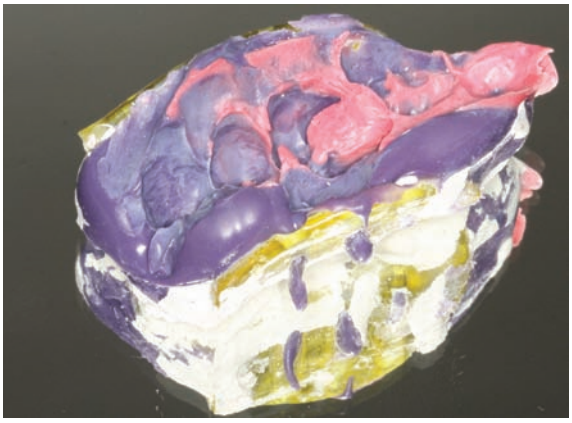

Figure 4

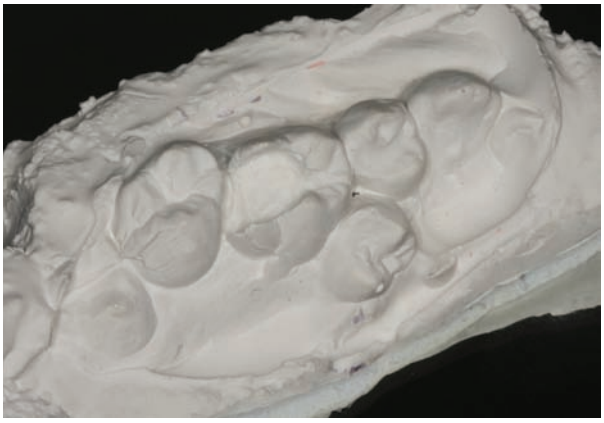

Figure 5

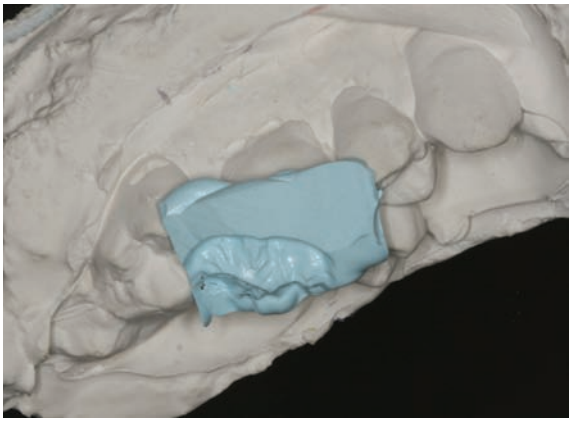

Figure 6

Figure 7

Figure 8

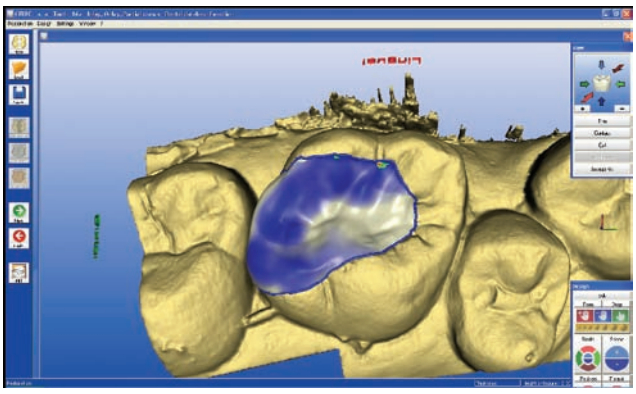

Figure 9

point as well as a properly shaped distal marginal ridge, thus reducing the risk of the food trapping that is commonplace with an open or poorly-placed contact.

The 3D software allows for complete control of the final restoration design (see figure 9). Numerous studies have also shown Cerec inlays to be the longest-lasting treatment modality in situations like this, with long term survival rates that are 21% better than cast gold restorations (Hickel and Manhart[9]).

One current theory as to why machine ceramics can outperform conventionally stacked porcelains is the drastically reduced ceramic flaw content. The particular block used for this patient was an Ivoclar Empress Cad multi shade block. This block is made from a leucite-reinforced glass ceramic material, and due to its manufacturing process is approximately twice as dense as a stacked porcelain inlay.

Following years of requiring intravenous sedation for dental treatment and the inconvenience that this caused, the patient wanted an alternative so that he could become

a 'normal patient' again. After discussion with the patient about his goals, and the aims of the treatment in his case, an appointment was made to see Dr Mike Gow for a consultation regarding his gag reflex.

Visit 2

It was explained at the consultation with Dr Gow that any intervention would be considered to be successful if dental treatment could be successfully carried out with minimum activation of the gag response (i.e. to achieve a grade II on the gagging prevention index [GPI]). It was made clear that the realistic aim of the intervention was to reduce the gag response enough to allow the patient to receive dental treatment with minimum anxiety or stress, rather than to expect to remove it completely.

Dickinson & Fiske gagging prevention index[8]
Grade I: Gagging reflex obtunded. Proposed treatment was completely successful
Grade II: Partial control. Proposed treatment was possible but occasional gagging occurred
Grade III: Partial control. Proposed treatment was part completed or alternative treatment carried out
Grade IV: Inadequate control. Some treatment carried out, but only very simple procedures
Grade V: No control. Gag reflex was so severe that even simple treatment was not possible.

It is worth noting that patients often feel very embarrassed about their gagging problem. By helping the patient understand the nature of gagging, some of this embarrassment and anxiety may be removed or reduced. The patient in this case was informed that the problem is quite common, and that there are techniques available that would help. It was emphasised that dentists encounter the problem on a regular basis, and that should he experience the reflex at any time, he should feel comfortable that he is in the company of professionals who are used to helping many patients with the same problem.

Following assessment of the gag reflex and discussion of the history of the problem, it was confirmed that the patient had a current GSI of 5. The main trigger areas seemed to be the lateral borders of the tongue, suggesting some somatogenic aetiology.

The patient described, however, that he was able to use cutlery and toothbrush without incident, and this – combined with stimulation of the reflex with visual stimuli – suggested significant psychogenic aetiology.

Hypnosis was discussed with the patient (Gow[10]), as there seemed to be a significant psychogenic component to the aetiology. The patient was interested in exploring this option further, and brief assessment confirmed that the patient was a suitable candidate for a hypnotic intervention.

It was explained to the patient that there are a number of techniques available for reducing the reflex, which would also be discussed at the next visit and used as appropriate.

The patient stated that he would be interested in any technique that would help and allow him to remain fully conscious and aware during his treatment.

Visit 3

Prior to the hypnotic intervention at this visit with Dr Gow, a 'positive anchor' was set up. This positive anchor (associating positive feelings with touching the middle finger and thumb on the non-dominant hand) is important, as it ensures that the patient can be safely brought out of trance at any point during the session.

A rapid induction technique was used, followed by basic deepening and ego strengthening techniques.

Robb and Crothers[11] describe that the permanent reduction of the gag reflex can be achieved using three main hypnotic approaches. The hypnotic intervention in this case used all three of these approaches.

Uncovering circumstances that caused the reflex to develop

This can be a very useful technique, and often reveals that a previous event has led to the current inappropriately strong gag reflex.

Please note – care must be taken when using techniques to 'uncover the circumstances that caused the reflex to develop', as it is possible that the patient may have traumatic memories of (for example) sexual abuse, which may arise during the session. As previously described, should this become apparent, or if the dentist is suspicious that this may be the case, a tactful referral to a suitably trained colleague would be the most appropriate action.

After setting up 'ideo-motor signalling' (which allows unconscious responses to be recorded for specific questions), Dabney Ewin's very useful hypno-analysis technique 'COMPISS' was used to safely investigate and uncover any potential causes of the abnormal gag reflex (Ewin and Eimer[12]).

Given the scope of this paper, a full explanation of the technique here would be too lengthy. However, any practitioner utilising hypnosis should be aware of how to effectively use it, as it is extremely useful when treating many problems with hypnosis.

The technique is frequently taught and refreshed at BSMDH (Scotland) courses, workshops and meetings. It is an effective tool as it allows the clinician to be accurate in their diagnosis of the underlying cause (or causes) of a problem, and therefore helps in choosing the most suitable hypnotic interventions.

In this case, the technique uncovered that the patient had a gagging episode as a child (about seven years old), when an impression was taken by a female school dentist. It was also confirmed that there were no other significant previous experiences.

Importantly, the COMPISS technique also flagged that the dentist made a specific negative comment immediately after the gagging incident; she said that he was 'wasting her

time'.

Using COMPISS, it was identified that this comment was a significant factor in his continuing recurrence of the strong gag reflex during dental treatment. The negative comment was 'collapsed' and hypnotic techniques then allowed the patient – as an adult – to safely travel back and re-evaluate what happened on that day to the child.

The 'adult' was able to comfort the 'child' in the imagined scene and reassure the child that he (the adult) was living proof that he (the child) would survive the ordeal and ultimately be OK.

The adult was also then able to explain to the dentist why her actions and comments were inappropriate that day, and make her realise how these made the child feel (something that, in reality, the child was obviously unable to do at the time).

The adult was then able to travel back to the present day, with the knowledge that the child was reassured and feeling better about the situation. The patient appreciated that it is impossible to change his past – but realised that it is possible is to change how he feels about the past.

Actively engaging patient in treatment

Once the circumstances that caused the reflex to develop had been uncovered and treated, it was then possible, as Robb and Crothers[11] mention, to 'actively engage the patient in the treatment'.

This was done by encouraging the patient to see the benefits of overcoming the problem and being able to have treatment (improved health, appearance, increase in comfort and so on). The patient could then view overcoming the problem as a positive achievement.

In this case, a variation of Geoff Graham's 'double mirrors' future pacing exercise (which I learned on the BSMDH training modules) allowed the patient to see and then experience what it would feel like in the future, having overcome his problem and having had his dental treatment. These positive feelings were anchored and he was taught that he could re-access these positive feelings any time in the future.

A further 'future rehearsal' technique was used, whereby the patient was able to visualise watching a DVD of himself having his dental treatment carried out comfortably and easily.

He was able to watch the DVD to the end, seeing himself getting up from the dental chair, looking happy and confident, having successfully completed his treatment. Using an anchoring technique, the patient was able to bring back all the positive feelings from the future to the present.

Hypnosis as an adjunct to desensitisation

Robb and Crothers[11] describe that hypnotic techniques can also be used as an 'adjunct to desensitisation'.

This can allow the patient to control the reflex, and remain calm during dental treatment. This approach is the basis of the recommendations of Barsby.[13,14]

Zach[15] describes a hypnosis case in which he helped a patient control his gag response using an imaginary switch. In this case, the patient was able to visualise that his gag reflex could be controlled by an imagined dial (the design and specifics of which are, importantly, chosen by the patient. The dial can be a dimmer light switch, a shower dial reducing temperature, a volume control, or a speedometer, thermometer, or simple number dial).

It is the opinion of this author (MG) that a dial is more appropriate than a simple on/off switch, as it allows some level of fine-tuning and control. This is important in the case of gagging, as it is actually useful to have some gag response to prevent aspiration of foreign objects.

In this case, the patient stated that his dial was a 'number dial', which was currently set at 9/10 (with 0 representing no gagging and 10 maximum gagging). The patient said that he wished the dial to be reduced to the 3/10 it was before the experience he had had as a child with the school dentist. It was emphasised that as it is important to maintain some gag response as a useful defence mechanism, 3/10 would be appropriate.

The patient was then able to visualise gradually turning the dial down from a 'nine' to a 'three'. He was also reassured that he could control the dial during any future dental treatment. At the end of the session the patient commented that he found this technique especially useful.

Standard safeguards and ethical blocks were used before the hypnosis session was brought to an end. The session lasted approximately one hour, although the patient believed it to have been much shorter. Time distortion is commonly experienced by patients who have been 'in trance'.

The patient was very pleased with how the session went and gave very positive feedback.

Following the session the patient was able to tolerate a mirror in his mouth for a short time, but had a minor gag response upon touching the 'trigger zone' of the lateral border of the tongue. He was congratulated on the fact that mirror was successfully in his mouth for a short time.

It was emphasised that it can take time for the hypnotic techniques used to process and fully take effect, and that his control of the gag reflex would increase as he rehearsed the hypnosis techniques he had learned at home while performing the following desensitisation exercises:

a) Systematic desensitisation can be a very useful technique to reverse the conditioning process (Morse et al[16]).

The principle is that the previously adverse stimulus is gradually introduced and increased, in stages, with the patient as relaxed and as comfortable as possible. The intensity, duration and frequency are gradually increased. A toothbrush, X-ray, impression tray, marbles (Singer[17]), acrylic discs (Barsby[13]), buttons and training devices are all examples of items that have been used in the literature.

In this case, the patient was given a disposable mirror and suction tube to practice with at home, while using his

self-hypnosis and breathing techniques (which will be detailed subsequently). He was instructed to gradually build up the amount of time these instruments were in his mouth each day, by a few seconds. It is important that this exercise is gradual, and reinforces positive exposure to the instruments.

This is the essence of the 'errorless learning' technique described by Bassi et al[2]. If the patient were encouraged to keep the instruments in for as long as he could manage, this would ultimately result in repeated occurrence of gagging, and would therefore be reinforcing the conditioned response.

The patient is asked to determine how long they feel that they are currently capable of keeping the instruments in their mouth (for example, 10 seconds). On the first day, they are encouraged to repeat the exercise a number of times and, using the breathing/hypnosis techniques, place the instruments for a maximum of eight seconds (a timer can be set if this is helpful).

The following day, the time should be increased to nine seconds. This time should then be gradually increased each day by an agreed increment. If the patient experiences any difficulty, he must revert to the previous day's time (at which he had success) before moving forward again by one increment the following day.

It is vital that the progress is gradual, and that as many 'positive' experiences as possible are achieved. The patient should keep a diary to bring to the next appointment for discussion with the dentist.

This technique is also useful for desensitising a patient who has intolerance to an appliance or prosthesis that is otherwise deemed to be of suitable design and dimensions.

b) The patient was taught to swallow with his mouth open and teeth apart. He was encouraged to practice this several times per day while using self hypnosis, until his next visit (Wilks and Marks[18]).

c) The patient was also encouraged to practice holding water at the back of his mouth, while breathing through his nose – again while using his self-hypnosis.

Additional interventions

As the patient presented with a score of '5' in the Dickinson and Fiske[8] gagging severity index, and as he had expressed specific interest in them at the previous visit, it was deemed to be in his best interests to use any and all additional techniques available that he showed an interest in, to allow him to achieve his goal of being conscious during his dental treatment.

It was stressed that as this would be a combined approach – these techniques would work synergistically and thus actually be even more effective than if used individually.

In addition to hypnosis, the following techniques were therefore discussed in greater detail:

Breathing techniques

It was discussed again that gagging is a reflex response involving the oesophagus, while breathing involves the trachea.

Just as it is impossible for an adult to swallow and breathe at the same time, it is impossible to breathe and gag at the same time. It was explained that a valve closes over the oesophagus while breathing, making gagging impossible.

The patient was instructed to practice taking long deep breaths in, and then fast forced breaths out between visits, especially while doing his desensitisation exercises.

It was emphasised that there should be no pause between expiration and inspiration. Barsby[19] describes the control of hyperventilation and gagging by teaching patients breathing techniques.

Acupuncture

Acupuncture has been demonstrated to have an effect on the gag response (Fiske and Dickinson[20]). In this case, acupuncture point CV-24 was deemed to be the most appropriate (see figure 2).

Nitrous oxide inhalation sedation

It is well established that inhalation sedation may effectively reduce the gag response and anxiety.

Following discussion, the patient stated again that he did not wish intravenous sedation, but was happy to have inhalation sedation during his active treatment.

As hypnosis was to be used during the treatment session as well, it is worthy to note that Whalley and Brooks[21] recently concluded in their study that nitrous oxide actually increases imaginative suggestibility and imaginative ability.

Desensitising trigger zones with topical anaesthetic

Following discussion, the patient was also keen that a topical anaesthetic pump spray be used to desensitise the lateral borders of his tongue, which he had identified as the main 'trigger zone' for his hypersensitive gag reflex.

Please note that this technique may not be suitable for all patients. It may cause distress to some as it can create an altered sensation when swallowing.

Distraction techniques

Corah et al[22] described several basic distraction techniques in managing hypersensitive gag reflexes. A very useful distraction technique, which was used in this case,

is the 'straight left leg technique.' The patient is instructed to raise their non-dominant (in this case left) leg six inches from the dental chair. They are told that they must keep the leg raised, to prevent the gag response (Krol[23]). Other commonly cited distraction techniques involve placing salt on the tongue, or staring at a spot on the wall, the ceiling, or a stick, for example.

Visit 4

Following a brief discussion about the how the session would progress, Dr Gow inserted an acupuncture needle at point CV-24. This remained in situ for the duration of the treatment (figure 2).

The inhalation sedation was then titrated to the patient's responses, with a mix of 50% nitrous oxide: 50% oxygen being administered. Following a wait of several minutes to ensure a stable level of sedation, a rapid hypnotic induction technique was employed (figure 3).

Topical anaesthetic spray was then used to desensitise potential trigger zones on the lateral borders of the tongue.

The hypnotic techniques used included basic relaxation and ego strengthening techniques, with the patient being able to relax in his 'special place' while visualising the dial previously described, over which he was told he would have complete control throughout the session.

The patient was reminded to use the breathing techniques he had previously learned and rehearsed. He was reassured that any time he needed to have a break, or wanted to swallow, he could raise his left hand (thus avoiding bumping the dentist, who was on his right) as a stop signal, indicating to the dentist and nurse to remove all instruments and fingers from his mouth.

Immediately prior to local anaesthetic being infiltrated in the 16 region, the patient was asked to use the 'straight leg technique' during the injection. This technique was repeated each time any instruments, or the operator's fingers were inside the patient's mouth.

The existing amalgam and secondary caries were removed, revealing a very deep cavity. The patient coped well with this part of the procedure, with minimal interruptions using the stop signal or activation of the gag response.

Care was taken to eliminate any undercuts and the cavity walls were checked under 4x magnification to help rule out internal enamel fracturing.

Following a small sectional impression in Impregum Penta Duo Soft Quick (a 3M polyether impression material), a squash bite was taken in Ivoclar's CADbite. To finish, the preparation was sealed with 3M Scotchbond XT and total etched to preserve the dentine bonding and prevent sensitivity and bacterial ingress between the preparation and the final seating.

A provisional Protemp 3 inlay was fabricated and cemented with eugenol-free provisional cement (3M RelyX Temp) to retain the position of the tooth and prevent over-eruption and contact point drifting.

Glycerol was used as a separating agent instead of the more commonly used Vaseline. Glycerol is easier to completely remove and therefore less likely to reduce the final bond strength upon final adhesive cementation. This final bonding stage will be essential for the long-term preservation of the cavity walls.

Normally we would be looking to immediately place a Cerec 3D inlay due to the size of the cavity and the proven long-term efficacy of the treatment modality. Given the need to scan powder the preparation and scan intraorally it was elected to opt for an indirect use of the technology using a sectional Impregum impression (figure 4). The patient tolerated this impression with no incident.

Once the dental treatment had been completed for the session, the acupuncture needle was removed. The patient was praised for how well the procedure had gone and was given post-hypnotic suggestions so he would find the treatment at the next visit even easier.

100% oxygen was administered for five minutes, during trance safeguards and ethical blocks, and the hypnotic trance was then reversed.

The patient was delighted with the success of the session, and an appointment was arranged for him to return to have the restoration fitted.

After the patient had left, the impression taken by Dr Gow was cast in a precision-scannable crown and bridge stone by Dr Newlands (figure 5).

The preparation was scanned by Dr Newlands and a subsequent scan was taken with the CADbite in situ (figure 6), which provided the information needed for correctly designing the occlusion.

Following design and milling by Dr Newlands, the restoration was trial seated (figure 7) on the cast.

Visit 5

Dr Gow repeated the acupuncture, hypnosis, inhalation sedation, topical anaesthetic spray, distraction and breathing techniques detailed in the fourth visit. The temporary restoration was removed and the Cerec restoration was trial seated in situ.

The marginal fit was excellent and cementation was carried out following ceramic etching with hydrofluoric acid and then silanation with 3M Espesil. The cement used was translucent RelyX Unicem (3M). Following clean up the tooth was successfully restored, occlusal adjustments were not required (figure 8).

Following reversal of the hypnotic trance, inhalation sedation and acupuncture, the patient was able to tolerate a final examination of the restoration with a dental mirror with no incidence of gagging.

The patient was delighted with the outcome of the treatment.

Conclusion

Using hypnosis, acupuncture, inhalation sedation, topical anaesthetic spray, distraction and breathing techniques, this patient was able to tolerate dental treatment while being conscious for the first time since he was a child. He was delighted with the progress that he had made and was especially pleased that he had not lost a day from his busy schedule because of the aftereffects of intravenous sedation.

There is a growing reputation for the use of hypnosis in the management of the inappropriate gag response, with several case reports backing up its use (Noble[24], Zach[15], Eli and Kleinhauz[25]). It is likely that this success is due, at least in part, to possible psychogenic components of the aetiology.

There are, however, very few controlled studies reporting on the efficacy of hypnosis in treating patients with problems with gagging. Walker[26] concluded that hypnosis can be a valuable adjunct in the treatment of gagging, with 56% success in complete eradication, and an additional 32% achieving partial success. The success rate of either complete or partial success was therefore 88% out of a total of 31 treated patients.

Hypnosis may be especially beneficial when used, as was the case here, in conjunction with other techniques such as inhalation sedation, acupuncture, topical anaesthetic sprays, relaxation, distraction and breathing techniques. In fact, Barsby[13] stresses that: 'Hypnosis can provide the clinician with a set of techniques that may be used to augment or facilitate a particular course of treatment.'

It is possible that this case may have been successfully managed with a different combination of techniques. However, it is the view of this author (MG) that, as the patient was keen to utilise everything available, it was reasonable to do so.

Obviously, this makes it very difficult to assess exactly what aspects of the intervention had the biggest impact on the successful outcome – but as this is a clinical case, all that is really important is that a successful outcome was facilitated.

There is a real need for more controlled research to determine the effects of each of the approaches described in this case, and to determine if – as is suspected by these authors – the use of techniques in combination actually creates a synergistic effect in managing what is often a very complex and difficult condition.

Certainly, advances in technology such as Cerec have provided new ways in managing difficult restorative cases. In this case, predictability, the longevity of the restorations and the complete control over the final morphology allowed for a restoration that should be serving the patient well for many years to come.

Knowing that the restoration will not have an open contact and will almost always be occlusally accurate without adjustment affords the clinician a greater degree of confidence especially when treating difficult patients.

Despite the patient presenting with a GSI of the maximum of 5, a Grade II was achieved in the GPI. There were only a couple of minor gagging incidences during the dental treatment visits and these were short in duration and quickly controlled. To put these minor gagging incidences into some perspective, they were comparable to the type of incidences witnessed by most dentists almost on a daily basis with patients who have no specific issue with sensitive gag responses, and were most likely caused by the usual iatrogenic culprits of a build-up of water and inappropriate positioning of the suction tip.

In this case, the patient received an approach tailored specifically to his requirements that addressed his specific concerns and needs. This involved using several approaches, integrated together, which successfully allowed him to tolerate dental treatment for the first time in many years.

Many of the techniques described here have a background in hypnosis, but in fact, can be applied without any need for 'formal' hypnosis induction (see Gow[27]).

Following a description of hypnosis in the control of gagging, Stolzenberg[28] identified this nearly fifty years ago, concluding that: *'The practitioner who is competently trained in hypnosis will find that there is a diminished need for the use of hypnosis per se, with most of his patients.*

'His understanding of the psychodynamics will aid immeasurably in establishing rapport with his patients, and he will develop an excellent patient-dentist relationship. His semantics will be a vocabulary of positive words that will not trigger off negative reactions in his patients. As a rule, the dentist who has been exposed to hypnosis indoctrination usually displays kindness and understanding, and treats his patients with tender loving care.'

Patient comments

'Ever since childhood I have had a severe gag reflex, which has made dental treatment almost impossible. For many years I avoided going to the dentist at all.

'Recently, one of my teeth broke and I realised that I needed to get treatment for it. I knew I had to find a dentist who would be happy treating someone with a gagging problem. I looked on the internet for a suitable dentist and came across the Berkeley Clinic. The facilities and standard of the clinic were impressive. I went along and after a couple of sessions the tooth was repaired.

'Dr Mike Gow used several techniques in combination, hypnosis, nitrous oxide, acupuncture, which kept the gagging well under control. I was given a treatment plan designed to deal with my specific problems.

'I appreciate the way Mike made me feel less like a patient being told what to do, and more like a partner in the process. I felt like I was in control of things at all times. Plenty of time was allocated for the treatment sessions.

'I was nervous at first but I soon felt very comfortable about going along. If any problems do come up in future I know that I will be quite relaxed about going back for more treatment. Dr Mike Gow, Dr Jamie Newlands and the team at the clinic gave me a very positive experience – thank you.'

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Dr Michael A Gow BDS (Gla) MSc Hyp (Lon) recently won 'Best Young Dentist, Scotland', as well as the prestigious 'Best Young Dentist, UK' at the 2008 Dentistry Awards.

Last year he was voted as the 66th 'most influential person in UK dentistry' by readers of *Dentistry* magazine and he hopes to get into the top 50 this year!

He is president of The British Society of Medical and Dental Hypnosis (Scotland) and teaches on the society's training modules (visit www.bsmdh-scot.com).

Mike has a Masters in Hypnosis Applied to Dentistry from University College London and is now a tutor and examiner for The Hypnosis Unit UK on its diploma modules (visit www.hypnosisunituk.com).

Jamie Newlands BDS is the clinical director of The Berkeley Clinic in Glasgow.

Since graduating from Glasgow in 2001, he has undergone extensive postgraduate training in composite resin and aesthetic dentistry.

He has lectured across Germany and America, and currently teaches layered composite and Cerec 3D techniques throughout the UK. Jamie is currently studying at Glasgow Dental Hospital and School for a Masters degree with a special interest in restorative dentistry.

Jamie also has an interest in parafunction, occlusion and TMJ problems, and is happy to accept referrals for restorative and aesthetic cases.