Sedation as an Adjunct to Oral Rehabilitation in a Fearful Patient

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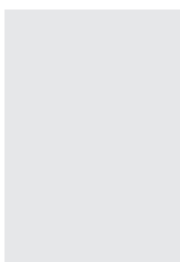

Jason H. Goodchild, DMD [Need headshot and contact info]

[QA: Please check that the figures are cited in the correct places within the text.]

The seeds of dental neglect are often sewn very early in a child's development.[1,2] If the experience of dental care is unpleasant and a patient does not understand the importance of that care, dental neglect begets widespread dental disease. For the past several years, oral (enteral) sedation has gained popularity as a treatment option for high fear patients. In fact, in a recent survey approximately 68% of general dentists are using oral sedatives before treatment.[3] The definition of oral sedation includes the administration of oral medications for the purpose of diminishing anxiety and/or fear of dental treatment.

This article is a case study of a 40-year-old man with whom dental neglect led to advanced dental disease and disrepair. For this patient, dentistry had become a "dark place," a place by his own accord that "he could not fathom visiting." **[QA: Please verify these are the patient's exact words.]** It is unclear how long he had been absent from dental care, but without oral sedation as a treatment alternative his progression of decay would have continued (Figures 1 through 3). He was hoping for a miracle **[QA: Edit okay?]**. Like many of this author's patients, the patient traveled a great distance to receive care (more than 50 miles). **[QA: Testimonials moved to the end of the article]**

The Initial Visit

New patients interested in sedation dentistry are scheduled for a 1-hour consultation. During their initial visit, patients are introduced to all team members who may be involved in patient care. Much of the time is spent discussing the patient's fears and apprehensions as well as the goals and expectations for treatment. The team must understand that patients may feel shame and apprehension about their dental conditions. Therefore, it is the goal of the initial visit to display sincere feelings of concern and empathy[4] so patients can be comfortable.

This author's dental team listens to the wishes and desires of the prospective patient. If the patient feels comfortable and rapport has been developed, a full clinical exam including radiographs, models (Figure 4), and pictures will be completed. Furthermore, the patient is scheduled to see the office's hygienists for periodontal evaluation and case type assessment.

At this particular patient's initial visit, it was obvious that he had been compulsive about maintaining his oral hygiene (Figure 5). This enabled his treatment to begin rapidly, after a scaling and root planning visit with the hygienist. Upon discussion with him, he expressed that sedation was not required for his initial periodontal appointments. However, he did feel that sedation would be needed for invasive restorative procedures. Many adjunctive measures are offered to make dental treatment more comfortable such as:

- Stereo headphones (noise canceling)
- Nitrous oxide
- Oral sedation
- Virtual vision goggles (for movie or concert viewing)
- Massage pads on top of the cushions on the dental chairs

Dentists and team members must remember that a case can be lost at the initial visit. If the patient feels uncomfortable, either with the attitude of the personnel or the care they have received, he/she will leave and not return. For these reasons the team is highly conscious of patient sensitivities. If possible, hygiene instructions are a very helpful way to end the initial visit and a very useful way to fur-

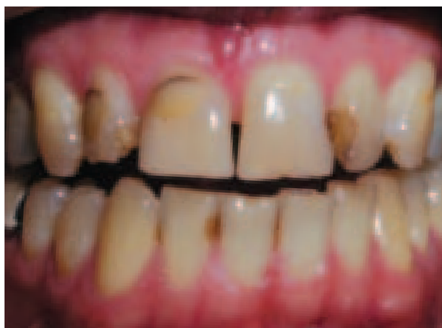

Figure 1—Retracted view of anteriors shows many old, discolored restorations with decay forming marginally. Note the severe rotation and buccoversion of tooth No. 20.

Figure 2—Full-face preoperative view.

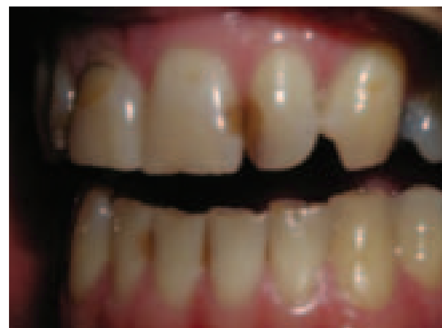

Figure 3—Retracted view, left side.

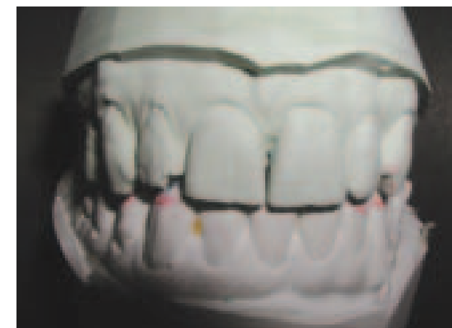

Figure 4—Preoperative study models of case.

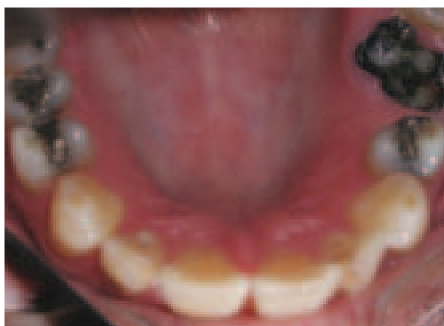

Figure 5—Image shows the effects of neglect and fear on tooth No. 14, even in the mouth of someone who was trying to maintain things as best he could without seeing a dentist.

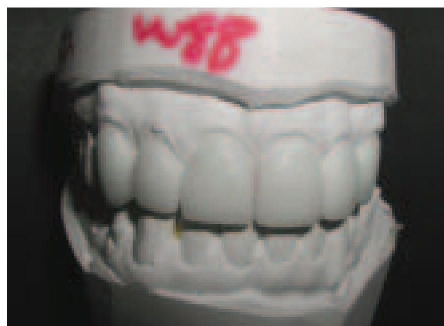

Figure 6—The esthetic sculpture has been performed.

Table 1—Properties of Triazolam[11-14]

Usual dose	0.125 mg to 0.5 mg
Half-life (t 1/2)	1.8 to 3.9 hours (mean 2.6 hours)
Duration of action	4 to 6 hours
Time to maximum concentration	0.75 to 2.5 hours (mean 1.25 hours)
Bioavailability	44% (oral) 53% (SL)
Site of metabolism	Cytochrome p-450 (3A4). Liver, small intestine

Table 2—Preoperative Instructions Given to Patient[17]

Checklist to Use Before Your Sedation Appointment

Things to Do/Remember 24 Hours Before Your Appointment

- No smoking—This affects the level of comfort during your appointment and can negatively affect the amount of time we can work on you.
- No alcohol—The dentist cannot safely sedate you if you have had alcohol, narcotic pain medication, or any street or recreational drugs.
- No caffeine.
- Take no additional medications (ie, over-the-counter pain medications and antacids, herbal or nutritional supplements) unless you have discussed these medications with the dentist.
- Nothing to eat or drink after midnight.
- Remember to remove any nail polish.
- Review your prescriptions and take the medication at designated times.

The Morning of Your Appointment

- Take your triazolam pill as instructed by the dentist before your appointment.
- Leave jewelry and watches at home.
- No contact lenses.
- Wear short sleeves and comfortable clothing.
- Wear comfortable shoes and socks.

It is essential that your escort drives you to your appointment.
Failure to comply with these instructions could cause a life-threatening situation.

Table 3—Factors Accounting for the Variable Effects of Oral Medications[18]

Intrinsic Factors

- Genetic polymorphism
- Age
- Gender
- Height
- Weight
- Lean body mass
- Body compensation
- Organ dysfunction/presence of disease

Extrinsic Factors

- Drug interactions (eg, synergism, potentiation, antagonism)
- Changes to metabolic processes (induction vs inhibition)
- Diet
- Tobacco
- Alcohol

ther the connection with the dental office.

The Sedation Protocol

The author's team has been trained to use the sedation protocol developed by the Dental Organization for Conscious Sedation (DOCS). All team members have successfully completed the Essentials of Oral Sedation and the 20-Hour Hands-On courses offered by DOCS in which all aspects of oral sedation are covered, including: patient management, pharmacology, cardiovascular and respiratory physiology, and emergency preparation and management.

The DOCS is a company based in Norristown, Pennsylvania, dedicated to the education of dentists and team members interested in providing oral sedation to anxious or fearful dental patients. As of September 2003, DOCS has approximately 1,700 active members and hosts seminars nationwide to facilitate oral sedation education. DOCS is an Academy of General Dentistry (AGD) Pace Provider, and its curriculum is currently approved by New York and Tennessee as licensure qualifying. Because regulations pertaining to oral (enteral) sedation are being revised in many states, this author highly recommends that any dentist interested in performing oral sedation verify the state laws and permit requirements.

The first step in determining the acceptability of a potential oral sedation patient is reviewing the patient's medical history. The author's office uses the American Society of Anesthesiologists' (ASA) Physical Status Classification[5] to assess the preoperative fitness of the dental patient. Together with the ASA classification we also determine any potential dental modifications based on medical status[6] and research any possible adverse drug reactions. When the medical risk assessment is complete and the patient is deemed acceptable for oral sedation dentistry, we distribute the appropriate sedative medication dosages based on medical history, past anesthesia history, level of anxiety or fear, and length of appointment. Triazolam is the drug of choice for oral sedation because of its short half-life, wide margin for safety, and reversibility[7-9] (Table 1).

During the office visit before the sedation appointment, the patient was given a thorough instruction sheet that included information regarding diet, medication, or habit restriction (ie, smoking, caffeine, or herbal medications and nutritional supplements) (Table 2). The esthetic sculpture was reviewed and approved to be sure that this was the "look" the patient anticipated (Figure 6). All financial transactions were also completed at this time. All requisite releases and informed consents were reviewed and signed at the time of the scheduling.

The protocol that the office follows stipulates a 0.25 mg dose of triazolam given to the patient 1 hour before treatment was to begin. This initial dose of triazolam was given to assess the patient's susceptibility and to ascertain whether additional doses of sedative medication were required. The DOCS protocol was developed to account for the latency and the wide variability of effects from oral medications. Each patient responds differently to oral medications based on a variety of factors, including: rate of absorption, induction or inhibition of metabolic processes, age and gender of the patient, concomitant medications, presence of food in the stomach, or the presence of disease (Table 3). The important point stressed to the patient is that dosing of medications is still not an exact science and that the amount of sedative medication is tailored specifically for the individual. It is also vitally

important to understand the wishes and expectations of the patient before the sedation appointment so that the dentist can provide a level of sedation commensurate with the patient's level of fear and/or anxiety. Put differently, this author's office uses oral sedation as a coping tool so that patients can comfortably receive the proper dental care. The goal of oral sedation in the office is to work within the safety guidelines of oral medications and the oral sedation technique set forth by DOCS to provide the safest and highest quality dental care.

Upon arrival, the patient's level of sedation was assessed by verbal and visual means. Very often, a simple analog scale is used to have the patient rate the discernable drug effects. This author asked the patient two questions:

1. When did he/she take the triazolam?
2. Rate the level of alertness on a scale from 1 to 10—a 10 would correspond to being very tired and a 1 would indicate they feel no effects from the medication.

In some cases it may be necessary to administer additional medication to achieve proper sedation. Again, proper sedation refers to an idealized individual level of comfort that has been discussed previously by the dentist and patient. For oral sedation, this will be either anxiolysis or conscious sedation (Table 4). The dosing of all sedation medications is within recommended guidelines and is done with special attention to the least effective dose necessary for the patient to receive care. If it is determined that additional sedative medication is needed to achieve patient comfort, the office does one of two things:

1. Reappoint the patient and increase the dose of the sedative medication (bolus technique).
2. Give an additional dose of sedative medication (incremental technique).

Choosing the appropriate course of action is based on the visual and verbal assessment of the patient when they arrive at the office. In general, if the patient feels very little or nothing from the initial 0.25 mg dose of triazolam the patient is reappointed and either the dose is increased or an alternate medication is chosen. If the patient is susceptible to the medication, then an additional small dose of the medication and/or nitrous oxide might be administered to achieve and maintain acceptable sedation.

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The key to oral sedation is the ability of the patient to respond to verbal commands and maintain their own airway. If a patient displays signs of oversedation or a loss of airway patency, it is important for the dentist to recognize and treat the impending emergency. Because oral

Table 4—Definitions of Sedation[15]

Anxiolysis —the diminution or elimination of anxiety.

Conscious sedation—a minimally depressed level of consciousness that retains the patient's ability to independently and continuously maintain an airway and respond appropriately to physical stimulation or verbal command and that is produced by a pharmacologic or nonpharmacologic method or a combination thereof. In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of conscious sedation.

Combination inhalation–enteral conscious sedation (combined conscious sedation)—conscious sedation using inhalation and enteral agents.

Deep sedation—an induced state of depressed consciousness accompanied by partial loss of protective reflexes, including the inability to continually maintain an airway independently and/or to respond purposefully to physical stimulation or verbal command and is produced by a pharmacologic or nonpharmacologic method or a combination thereof.

Titration— the administration of small incremental doses of a drug until a desired clinical effect is observed.

When the intent is anxiolysis only and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation-enteral conscious sedation (combined conscious sedation) does not apply.

Table 6—Postoperative Instructions

After Sedation Instructions

1. Patient cannot drive for 24 hours after sedation.
2. Do not operate any hazardous devices for 24 hours.
3. A responsible person should be with the patient until he/she has fully recovered from the effects of the sedation.
4. Patient should not go up and down stairs unattended. Let the patient stay on the ground floor until recovered.
5. Patient should resume normal eating and drinking after the sedation appointment, unless otherwise instructed by the dentist.
6. Patient needs to drink plenty of fluids postoperatively to prevent dehydration.
7. After leaving the office, patients should not be left alone. Patients may seem normal, but the effects of the medication can last for several hours after the appointment has ended. Do not allow the patient to make important decisions for the remainder of the day after his/her sedation appointment.
8. Always hold patient's arm when walking.
9. Call the office if you have any questions or difficulties. If you feel that your symptoms warrant a physician and you are unable to reach us, go to the nearest emergency room immediately.

Possible Medications

- Amoxicillin—Fill prescription and take as directed.
- Erythromycin—Fill prescription and take as directed.
- Acetaminophen—Take two every 4 hours.
- Ibuprofen—Take two every 4 hours.
- Vicodin—For pain only. Take one every 6 hours.
- Vitamin C—One (1,000 mg) at every meal 3 times per day.
- Co Q 10—50 mg 2 times per day.

Table 5—Emergency Management for the Oral Sedation Patient[9]

Assessment	Check patient responsiveness Check monitors for malfunction Activiate EMS/Call 911
Maintenance	ABCs (airway, breathing, circulation)
Definitive Care	Defibrillator (AED) Reversal agents Emergency medications
Discharge	Release patient to companion Send to hospital

sedation involves giving the central nervous system (CNS) **[QA: Correct?]** depressant medications, adverse reactions or emergencies that may occur are usually the result of oversedation. As such, emergency management of the oral sedation patient should focus on CNS depression. If a patient becomes unresponsive, the dentist must take steps to lighten the level of sedation before vitals and/or airway become compromised, inluding: a change of position, physical stimulus, oral carbohydrates, or reversal agents. If these measures fail, it is crucial to begin basic life support to maintain vitals until emergency care can be instituted or paramedics can be summoned (Table 5).

Because one of the known side-effects of triazolam is temporary amnesia, it has been this author's experience that even at light levels of sedation, patient reaction to noxious stimuli (noise of the drill, sensation of a lack of profound anesthesia) are not recalled the next day.

If dentists wish to administer additional or incremental doses of sedative medications, it is again encouraged that state regulations and laws be verified. There is much debate surrounding which technique—bolus or incremental—is safer and more effective. While no definitive scientific evidence settles this debate, each dentist should practice according to state laws and level of training. Furthermore, the responsibility must fall on the dentist to research the appropriate technique that will be effective and safe for each individual patient. The incremental technique is the newest method of oral sedation and also the least studied. However, incremental dosing is not without pharmacologic basis, according to Wilkinson. "Increasing the dose also prolongs a drug's duration of action but at the risk of increasing the likelihood of adverse effects. Accordingly, unless the drug is nontoxic (eg, penicillins), increasing the dose is not a useful strategy for extending a drug's duration of action. Instead, another dose of drug should be given to maintain concentrations within the therapeutic window."[16]

His/her escort or a same-sex dental assistant then takes the patient to the bathroom before entering the treatment room. When the patient is comfortably seated in the operatory, they are connected to a pulse oximeter to record and monitor vital signs throughout the procedure. It is the job of the assistant to attend to the patient's comfort while the dentist closely monitors the patient's vital signs, airway, and responsiveness. All efforts are made to create a comfortable environment for the patient during the sedation visit, including: a clean blanket, a neck pillow, a chair pad with electric massage cushion, protective eyewear, and headphones with soothing music. The patient is even encouraged to remove his/her shoes

At the conclusion of the oral sedation appointment the patient is assessed for discharge. Before the patient is permitted to leave under the care of a responsible companion, discharge criteria must be met. This author's discharge criteria includes a patient who is alert, ambulatory, oriented to time, place, and location, displays normal balance, and responds appropriately to verbal commands. Postoperative instructions are presented to the

Table 7—Dos and Don'ts of Oral Sedation

Dos
- Check state laws and permit requirements before performing oral sedation.
- Attend continuing education courses intended to teach the safe use of oral sedation.
- Make patient comfort a team effort.
- Be careful with the patients you select for oral sedation. Use good assessment tools to keep yourself out of trouble.
- Treat ASA 1 and 2 patients. Get medical consultation if needed.
- Get the proper in-office monitoring equipment.
- Train and be prepared for in-office emergencies. Get a complete emergency drug kit including the antidotal medications (ie, flumazenil, naloxone).
- Avoid polypharmacology.
- Release patients to responsible companions.
- Offer oral sedation to patients who:
  1. Are fearful or anxious about dental treatment.
  2. Need longer treatment appointment.
  3. Are bad gaggers.

Don'ts
- Never perform oral sedation without a license or permit.
- Never provide oral sedation to medically complex patients (ie, ASA 3 and 4) without medical consultation.
- Never treat sedation patients without monitors.
- Never give sedative medications without knowledge of possible adverse effects, half-life, duration of action, time to maximum concentration, etc.
- Never give large or excessive doses beyond recommended guidelines.

responsible companion in writing and are signed before leaving (Table 6). All patients are contacted twice within 4 and 24 hours to assess recovery, and it is advisable that patients be seen in the office for follow-up in 3 to 7 days to correct any occlusal problems.

Patient's Oral Sedation Visit

During his initial visit, the patient expressed that his fear of dentistry was the result of traumatic experiences as a child. He recounted horrible memories of being "dragged" to the dentist, and how "novocaine" did not work causing procedures to hurt tremendously. When he felt comfortable with the office and the care provided, he was able to request oral sedation without shame. Too often, patients are ashamed of the fear that has prevented them from seeking the dental care they so desperately need. For this patient, oral sedation was the means by which he could finally restore his mouth to a healthy state. His medical history was reviewed and the exact procedures were explained to him before finalizing the treatment plan. It was noted that he had no significant medical history, was taking no medications, and was not allergic to any medications. This was corroborated with his primary care physician [**QA: Edit okay?**]. He was classified as an ASA 1 patient, and it was determined that no modifications to our dental treatment would be needed because of medical status.

Restoratively, the patient was not interested in changing the shape or alignment of his maxillary anterior teeth. His goal was to have anterior teeth that looked unrestored and natural. This author has numerous consultation tools in the office that allow patients to choose not only the shape and shade of teeth, but also the relative sizes, translucency, texture, incisal edge color, hue, and chroma. His treatment was to be divided into phases:

- Phase 1: Eliminate all maxillary decay and prepare maxillary anterior six with veneers to reconstruct cuspid and incisal guidance.

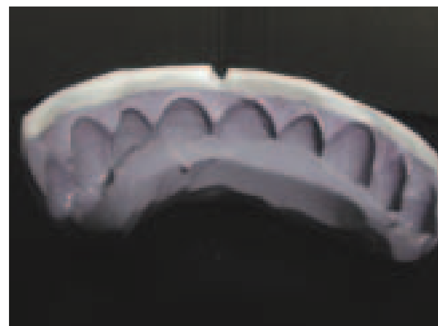

Figure 7—The Sil-Tech® index (Ivoclar Vivadent®, Inc).

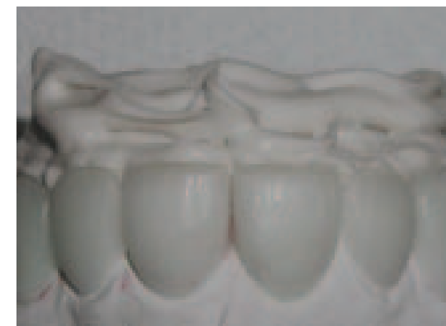

Figure 8—The incisal index allows the dentist to evaluate the reduction of the preparations for sufficiency of porcelain in a horizontal, vertical, and saggital dimension.

- Phase 2: At subsequent visits mandibular decay would be eliminated, with dental implants planned for the upper left quadrant after healing of the extraction sites.

On the morning of the oral sedation visit, the patient took 0.25 mg of triazolam 1 hour before his 9 AM appointment. He was escorted to the treatment room at 9 AM and the blood pressure cuff and finger probe of the pulse oximeter were placed. He was then properly positioned and started on 100% oxygen delivered via nasal hood. The patient selected soothing music, and headphones were placed. At 9:25 AM he was given another 0.25 mg of triazolam because his anxiety was not sufficiently diminished to begin treatment. This determination was based on conversation with Ray and any nonverbal cues observed (eg, eye contact, posture, quickness of responses, etc). Approximately 15 minutes later, nitrous oxide was added to the oxygen at a 30% concentration. Two minutes after nitrous oxide was administered, this author injected small amounts (0.45 cc) of prilocaine (using a 30-guage short needle) in the areas where work would be completed to begin anesthesia. This author prefers to take this extra step with the less acidic dental anesthetic prilocaine to help minimize injection discomfort.[10] At this point, nitrous oxide administration was terminated and 100% oxygen was continued throughout the procedure. All teeth were subsequently anesthetized with 2% lidocaine with 1:100,000 epinephrine.

After allowing sufficient time for profound anesthesia, treatment was started. To maintain maximal opening and visualization, a mouth prop was positioned during all treatment. Oral sedation is used for longer procedures, and patient comfort and compliance can be maximized with the simple step of adding a mouth prop and massaging the temporal regions. However, at intervals throughout the procedure and at breaks, it is imperative to remove the prop to avoid muscle soreness. Treatment progressed without interruption after the patient was adequately comfortable and local anesthesia was verified. It is important to reiterate that patients undergoing oral sedation in the office are not unconscious. The patient at all times is capable of responding to requests such as "open wider" or "tap your teeth together." Furthermore, patients are continually asked about level of comfort and if a break is needed to visit the restroom (Figures 7 and 8).

At approximately 1 PM, the patient informed the author his level of sedation was becoming unacceptable (he was too aware of where he was and wanted to be taken back to his earlier state). Most of the planned treatment had been completed including caries control and the preparation, impression, and temporization of the maxillary anterior teeth. However, the surgical extraction of tooth No. 14 remained to be completed, and the patient felt he needed additional sedation. This author concurred knowing that the removal of tooth No. 14 in all likelihood would be a surgical procedure. It was decided that because the remaining treatment time was relatively short, nitrous oxide would

be used instead of additional sedative medication to achieve the needed depth of sedation. A few minutes of 30% to 50% nitrous oxide was all that was needed to make the patient comfortable, and tooth No. 14 was extracted without complication.

The decision to re-administer additional oral medications should be based on the amount of elapsed time between doses and the depth and length of sedation needed. The worst possible situation is a patient to whom sedative medication is given close to the time of discharge. In this case a sedated patient will be under the care of an untrained individual and will be unmonitored. Because oral sedatives can last many hours, it is imperative to take duration of action into account before the discharge of any oral sedation patient.

Many dentists ask, "Why don't you just reverse your patients routinely so that they can be awake and safe for the ride home?" The answer to this question is based on the half-life and duration of action of the reversal agent (ie, flumazenil). For example, if the sedative medication triazolam can cause effects for 4 hours and the reversal agent flumazenil will antagonize triazolam's effects for only 45 minutes the problem becomes evident. The major disadvantage of reversing patients routinely is that resedation can occur if sufficient agonist drug remains in the blood after the antagonist drug is metabolized.

The patient was maintained on 100% oxygen for the last 20 minutes of his visit. When all treatment was terminated and he was preparing to leave, a carbohydrate-rich drink was administered to accelerate his recovery. After sufficient time had passed to witness his complete recovery and the discharge criteria had been satisfied, the patient and his companion were given the postoperative instructions. The patient was dismissed into the care of his companion at approximately 3 PM.

This author called the patient at home the night of the sedation visit and was informed that he was resting comfortably with no complaints. When asked about analgesia and memories of the visit this author was told that the patient was feeling no discomfort and had fuzzy but accurate memories of the day's treatment.

The Follow-Up Visit

The patient was seen again 4 days after his sedation visit, at which time all sutures were removed and occlusion was rechecked. He was questioned about his satisfaction with all facets of his dental visit, including: level of sedation, overall comfort, postoperative condition, and esthetics of his temporaries. Had he not been satisfied with any part of the visit, the follow-up visit is the office's opportunity to seek a solution. For example, if his level of sedation needs to be changed the treating dentist can discuss options with the patient. Or, if the patient is unhappy with the esthetic result, a new impression can be sent to the laboratory technician so that

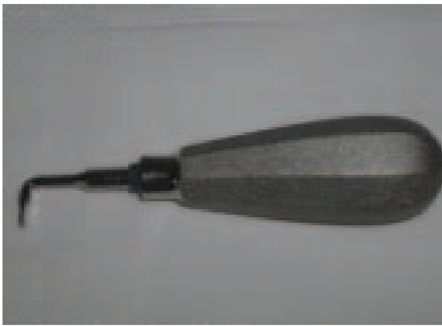

Figure 9—The Christensen Crown Remover (Hu-Friedy® Manufacturing Company, Inc) allows for rapid removal of temporaries without potential for damage to preparations or composite cores.

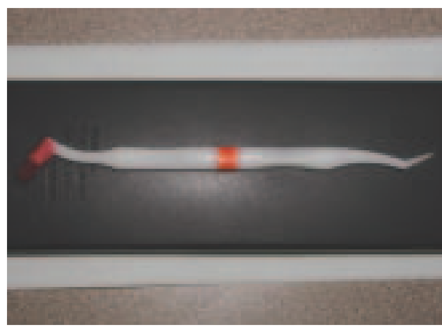

Figure 10—Utility wax in a paintbrush handle allows for easy manipulation of veneers and crowns.

Figure 11—The tacking tip for the L.E.Demetron 1 Curing Light (Kerr Corporation) allows for pinpoint curing of resin to hold the veneer or crown in position and then clean up marginal excess before the final cure.

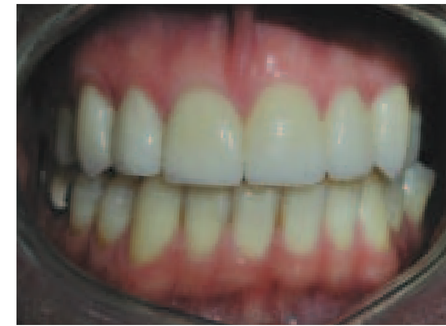

Figure 12—The completed smile. Compare with Figure 6 to see how the esthetic sculpture becomes the blueprint for success.

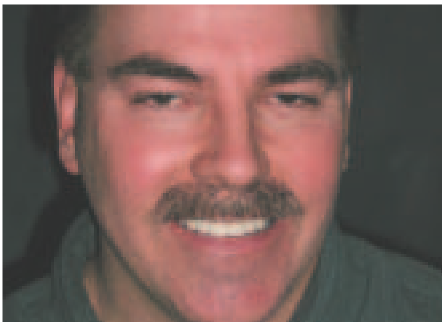

Figure 13—Full-face postoperative image.

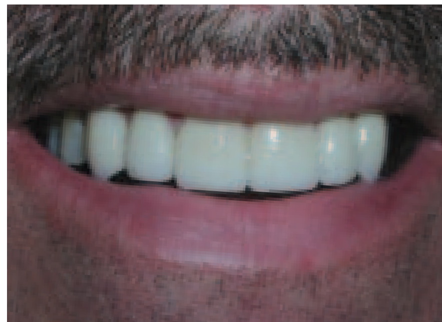

Figure 14—The final IPS Empress® (Ivoclar Vivadent®, Inc) veneers show natural texture and translucency.

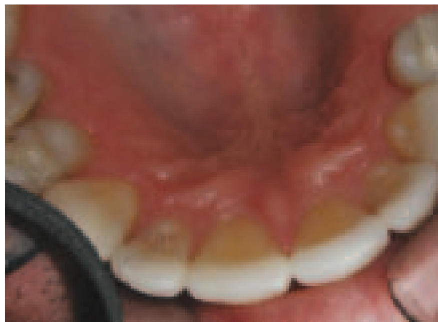

Figure 15—Maxillary arch still needs implants on the upper left, and porcelain inlays will eventually replace the direct composite restorations.

the temporaries become a guide for the successful completion of the case.

Because he was pleased with the progression of his case, he scheduled another oral sedation visit for the final insertion of the case. In some cases patients choose not to receive sedation for the insertion visit. However, this decision is always left to the patient.

The Insertion Visit

An amazing thing sometimes happens on a patient's second oral sedation appointment. Because patients know what to expect and have developed a level of trust with our office, the amount of sedative medication required is usually substantially less. This was the case with this particular patient; his preoperative dose of 0.25 mg triazolam was sufficient to render him comfortable for the entire visit.

One important issue at this point is the acceptance of the final esthetics before final cementation. If the patient chooses sedation, this author insists that a spouse or a trusted companion be present to accept the esthetics on the patient's behalf. If the patient cannot provide a proxy, we sometimes do an esthetic try-in without sedation so that the patient can personally approve the case.

Because the technique for temporary removal entails the slitting and cracking off of the temporaries, he chose to be sedated (Figure 9). Precautions were taken to avoid the unintended aspiration or deglutition of temporary material, or permanent veneer, by placing a rubber dam (Figures 10 and 11).

Again, the patient's oral sedation visit was uneventful and all planned procedures were performed. The final case was inserted and he was released to his companion exactly as before (Figures 12 through 14). The patient is currently in orthodontic treatment to correct the cross-bite relationship on the left side of his mandible. When tooth movement is complete, he will again undergo oral sedation for the placement of implants (Figure 15).

Conclusion

This is just one example of the many patients our office has helped with the treatment adjunct of oral sedation. Patients such as this one become "walking advertisements" for the extraordinary care that they have received at your practice. Patients who have given up hope of regaining a healthy mouth and beautiful smile now have another option for receiving dental care. With the further use of oral sedation and the refining and study of the techniques, patients can be assured a comfortable and safe dental experience.

To read the correspondence between the patient and the author, please visit http:// www.smiles9.com/ pages/testimonials-ray.htm.

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Product References

Products: Sil-Tech®, IPS Empress®
Manufacturer: Ivoclar Vivadent®, Inc
Address: 175 Pineview Drive
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Phone: 800.533.6825
Fax: 716.691.2254

Product: Christensen Crown Remover
Manufacturer: Hu-Friedy® Manufacturing Company, Inc
Address: 3232 North Rockwell
Chicago, Illinois 60618
Phone: 773.975.6100
Fax: 773.975.1683

Product: L.E.Demetron 1 Curing Light
Manufacturer: Kerr Corporation
Address: 1717 West Collins Avenue
Orange, California 92867
Phone: 800.KERR.123
Fax: 800.KERR.345