

Practical Patient Management: The Integrated Approach

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Pharmacologic agents have been traditionally used in dentistry for the management of patient fears. Results have been mixed, depending on the drugs and techniques used, the skill and training of the operator, and the degree of anxiety of the patient. Pharmacology alone may be unsuitable and even hazardous for some patients. All forms of sedation and anesthesia should be administered in an environment of trust, empathy, and competence in both the behavioral and clinical sciences. Such an integrated approach will result in reduced drug dosages, decreased need for multiple drug techniques, improved patient safety, and better control of anxiety. For optimum benefits, the teaching of behavioral sciences, including interpersonal and communication skills, should be integrated with the teaching of pharmacologic methods of anxiety and pain control at both undergraduate and continuing education levels.

The following article is based on the treatment of more than 20,000 fearful patients in private practice, along with research, and undergraduate and continuing education teaching in a number of countries with differing philosophies concerning the management of these patients. From these experiences, a personal philosophy has evolved that I believe to be practical, safe, and highly effective in managing the great majority of apprehensive patients.

Until the past decade, there was a shortage of dental manpower, and the major problem was finding space for patients in an appointment diary usually booked several months ahead. As a result, fearful, "difficult" patients were unwelcome in many dental offices, and were even refused treatment in some dental schools.

The patient was expected to provide a receptive, nonmobile oral cavity as close as possible to a phantom head: where the dentist or dental student could get on with a technical procedure under optimum conditions. If the patient was not prepared to acquiesce, there was always another who would. So it was not surprising that many students graduated expecting to see a continual supply of passive, cooperative patients in their practices. Those who did not comply with this expectation were unwelcome, or minimally treated.

Increasing attention is being paid to the management of the fearful dental patient. This is evidenced by numerous publications in the literature, continuing education courses, and the establishment in progressive dental schools of comprehensive teaching programs. In part, this attention has been stimulated by the realization that dentistry no longer enjoys the luxury of an oversupply of patients actively seeking treatment from an undersupply of dental graduates, and that greater efforts must be made to attract the large percentage of the population that still remains untreated. However, it has also been long recognized there is a major problem in the delivery of quality dental care to anxious patients who recognize the need for regular maintenance, but who attend visits reluctantly and often only in emergency.

THE PHARMACOLOGIC APPROACH

Clinicians who were sympathetic to the needs of the apprehensive patient and who were fortunate enough to have received training in general anesthesia as students were able to offer this alternative as a "solution" to the problem. However, general anesthesia had obvious disadvantages, including the risk of anesthetic complications, particularly during long procedures; as well as postanesthetic problems such as delayed recovery, nausea and vomiting, and succinylcholine pains—none of which endeared the method to the busy practitioner as a means of treating ambulatory dental patients. Moreover, the dangers of subjecting anxious, possibly poor medical risk patients to the additional stresses of prolonged general anesthesia should also be carefully considered.¹

The inevitable result was that over the years many

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patients sought only emergency treatment for pain, often ending up with dentures through neglect of their teeth because of their fears. What was apparently needed was a means of bridging the gap between local and general anesthesia, so that dental treatment could be provided with the advantages but without the increased risks and disadvantages inherent in general anesthesia.

In the early 1960s great interest was generated with the advent of the ultra-short acting anesthetic agent methohexital sodium (Brevital, Brietal)²⁻⁵ and the renaissance of nitrous oxide as a sedative rather than as an anesthetic.^{6,7} This was followed by the first of the injectable benzodiazepines, diazepam (Valium);⁸⁻¹¹ along with the use of various drug combinations to produce sedation¹² or basal sedation upon which small, subanesthetic increments of methohexital¹³⁻¹⁵ or nitrous oxide¹⁶ are superimposed to deepen the levels of sedation temporarily as required. With these techniques, the object is to produce a state of controlled "conscious" sedation, where the patient retains the ability to independently and continuously maintain his or her vital functions; as well as to respond to appropriate physical stimulation or verbal command. Under these conditions, analgesia is provided by local anesthetic agents.

Naturally, proper training is essential before the above procedures are undertaken. In this respect, publication of the American Dental Association "Guidelines for the Teaching of Comprehensive Pain and Anxiety Control in Dentistry" in 1971¹⁷ (revised in 1978 and 1985) was a significant milestone; that was followed by the establishment of a number of undergraduate and continuing education programs that are continually being improved and modified. Unfortunately, despite the generally good safety record of such programs,¹⁸ there have occurred several highly publicized tragedies where poorly trained and/or irresponsible individuals have brought valuable techniques into disrepute, with unfortunate consequences.¹⁹⁻²¹ However, I strongly believe that safety equal to or better than local anesthesia alone can be achieved by skilled, conscientious clinicians who are trained in the proper use of conscious sedation.^{22,23}

THE BEHAVIORAL APPROACH

Despite the traditionally taught pharmacologic techniques, and their undoubted popularity, the purpose of such techniques is to circumvent anxiety, rather than attempt to understand, confront, and deal with the problem of fear from a behavioral standpoint;^{24,25} the behavioral approach has received scant attention in our dental schools.

In recent years, behavioral scientists have directed an increasing amount of their research activities towards an

understanding of why patients become afraid, and developing strategies for coping with their fears. This progress has led to the development of programs such as the Dental Fears Research Clinic at the University of Washington,²⁶ and belated recognition of the work of pioneers such as Nathan Friedman at the University of Southern California, where an undergraduate program has been operating for some 20 years. These programs include topics such as the origins and characteristics of dental fears, and effects on pain tolerance of factors such as conditioning, cultural backgrounds, environment, and anxiety.^{24,27-29} Particular attention is paid to those factors responsible for the development of anxiety, its physiologic effects, and its relationship to pain tolerance in dental patients.

Patient management techniques taught include the use of effective interpersonal and communication skills, "iatrosedation",³⁰ and patient education; and may include subjects such as the role of suggestion and hypnosis, desensitization, biofeedback, relaxation training, and others.

Video and computer technology, together with process recall³¹⁻³³ have also been used with considerable success in such programs, for the teaching of communication skills as well as fear reduction.

THE INTEGRATED APPROACH—A PERSONAL PHILOSOPHY

Although increasing recognition of the important role of the behavioral sciences in managing dental fears is becoming apparent, I have noted resistance in some quarters, particularly from those whose backgrounds have been oriented to traditional, drug-based techniques of anxiety control. This may be partly due to the belief that one must be a practicing, "wet-fingered" dentist in order to deal effectively with anxious patients; along with a certain suspicion of psychology as a practical alternative. Fortunately, this attitude is changing, as more schools incorporate the teaching of behavioral sciences into their curriculae, and students are able to judge the benefits for themselves. However, there is no doubt in my own mind that the best method is that which aims at integrating both pharmacologic and behavioral skills. This philosophy is not new. It was noted over 20 years ago by Egbert and his coworkers³⁴ that "the clinician's interpersonal and communication skills can exert at least as much sedative or calming effect on the patient as the drug itself."

Conversely, if these skills are poor, it can also be stated that it is unlikely good patient management can be achieved without the use of heavier and potentially more hazardous drug dosages and combinations. Of particular

concern is the common addition of depressant systemic agents such as narcotic analgesics to benzodiazepines. The latter are extremely safe when used alone but, when combined with depressant drugs, may lead to potentiation of their respiratory depressant and hypotensive effects. As local anesthesia is used to control pain in conscious sedation techniques, it seems illogical to add a centrally acting analgesic as well. Proponents claim this "improves" sedation, yet experience has taught me that parenteral narcotics, even for surgery, are very seldom indicated, provided good interpersonal and communication skills are also employed. There is a need for much closer liaison between the disciplines of pharmacology and psychology, aimed at the integration of both. Such an approach can only result in better, safer patient care, along with an improved public image, and increased demand for dental services. It is gratifying to see this view shared by others,³⁵⁻³⁷ and hopefully this trend will continue to grow.

THE INTEGRATED APPROACH—AN EXAMPLE

For a number of years, an integrated behavioral/pharmacologic approach has been successfully used in my own practice. Patients calling for appointments are mailed an introductory "welcome" letter, medical and dental history forms, and an anxiety rating questionnaire based on the Corah scale³⁸ (Fig. 1). These are evaluated at interview, and fears and their origins recorded (Fig. 2).

Preoperative Management

The initial interview is essentially a trust-building exercise, based on information gathering, interpretation, and commitment; within the context of an empathic emotional environment. In other words, an "iatrosedative" approach,³⁰ the object of which is to explore and identify any specific fears the patient may have, along with past

Figure 1. Modified Corah Anxiety Rating Scale

I realise that many people are nervous or frightened about going to the dentist.
If you have such feelings, I would like to help you.

The following information will help me make your dental experience more comfortable.

Thank you for your co-operation.

Please indicate the answer that best describes your feelings:

You are going to the dentist today. How do you feel about it?

- It does not bother me
- I am a little nervous
- I am afraid
- I am very frightened
- I am so frightened I sometimes break out in a sweat, or feel sick.

You are waiting in the waiting room, how do you feel about it?

- It does not bother me
- I am a little nervous
- I am afraid
- I am very frightened
- I am so frightened I sometimes break out in a sweat, or feel sick.

You are in the dentists chair, waiting for him to give you an injection.

How do you feel about it?

- It does not bother me
- I am a little nervous
- I am afraid
- I am very frightened
- I am so frightened I sometimes break out in a sweat, or feel sick.

You are in the chair waiting for the dentist to use the drill on your teeth.

How do you feel about it?

- It does not bother me
- I am a little nervous
- I am afraid
- I am very frightened
- I am so frightened I sometimes break out in a sweat, or feel sick.

INTERVIEW Name _____

Specific fear _____

Origin of fear _____

Satisfactory dental experiences _____

TREATMENT RECORD

Treatment date:					
History check: (Medication?)					
Apprehension rating					
Pulse (Normal 60-100)					
Blood Pressure 1 (Normal 80/140) 2 3					
Time in out Duration					
Dosage					
Response 1 2 3 4					
Post-op.					

Figure 2. Fears Assessment and Sedation Record

dental experiences. It is explained how the fears were learned, and how it is possible through a succession of good experiences to “unlearn” those fears. At this point, the use of sedation is usually discussed, as in my experience an initial pleasant nitrous oxide or intravenous sedation procedure is often the vital key to the unlearning process. When this initial rupture of the anxiety/pain cycle has been achieved, patients are invariably more trusting and receptive, eventually leading to the reduction and withdrawal of pharmacologic aids in many cases.

At the initial, unhurried appointment, it is essential the

chosen sedation technique is fully discussed, and any questions or fears the patient may have concerning it are dealt with. Preparation and education are of vital importance before the use of any new procedure, and help eliminate fear of the unknown, a potent stimulus to anxiety. Where pharmacologic agents are concerned, this approach invariably leads to better results, lessened drug requirements, greater patient safety, and reduced side and after-effects. It also results in maximization of the placebo response, an often neglected factor of inestimable value in the overall management of pain and

anxiety.^{24,25,39–44} Janis⁴⁵ has noted that when a frightened patient perceives danger, statements made by the doctor (seen as a “danger control authority”) assume great significance. Positive, reassuring suggestions made by a doctor who is trusted by the patient will dramatically reinforce the placebo response, particularly when high levels of anxiety are present. It is a valuable therapeutic tool, that should be utilized.

Intraoperative Management

The first clinical appointment is an opportunity to further increase the trust engendered at the initial interview. This is achieved by careful preplanning to avoid fear-producing situations. Everything should be in readiness beforehand, so that on arrival the patient is taken immediately to the treatment area. Even a mildly anxious patient who is kept waiting can result in a very apprehensive patient in the operatory. This can lead to decreased effectiveness of sedation, increased drug requirements, compromised operating conditions and safety, and prolonged postoperative recovery—not to mention the loss of much of the trust established.

For these reasons, it is also highly desirable that the first clinical encounter should consist of a short, simple procedure wherever possible. Such an initial “good” experience will lay the foundation for mutually pleasant future appointments.

The patient should be seated in the dental chair and preparatory communications relative to the chosen sedation technique begun. These verbal and nonverbal communications are aimed at minimizing feelings of helplessness, dependency, and the unknown; along with the use of euphemistic, nontechnical and nonthreatening language, positive suggestion, and a skilled tactile approach. This conveys a sense of competence to the patient and further engenders trust. Relaxing, supportive comments during the induction of sedation and the use of topical obtundant spray before venipuncture, for example, are also important adjuncts.

It is essential during sedation that verbal communications are continued throughout, particularly before using any instrument or performing any action that may be construed as a threat. During the induction of sedation, in particular, a quiet background and the use of suggestion will enhance the placebo effect. However, all this can be lost by inflicting an unexpected stimulus upon a calm, sedated patient. Those who have appeared “resistant” to sedation have usually been those who become frightened by the sound of the drill or the nongentle administration of a local anesthetic, especially when there has been no forewarning by the doctor. Anxious patients who appear calm under sedation must

never be taken for granted, and deserve at least the same amount of consideration as the nonsedated patient.

Postoperative Management

During the early stages of recovery from sedation, it is important psychologically that the doctor remains with the patient, so the patient experiences the reduction of any stresses associated with the dental procedure in the doctor’s presence. Withdrawal of the negative reinforcer (eg, a stressful surgical operation) in the doctor’s presence will strengthen the desirable response of being with the doctor. If the negative reinforcer is removed after the doctor leaves, particularly when after an unpleasant or difficult procedure, stress reduction occurs after the patient and doctor have parted company, thus strengthening the undesirable response of escaping and avoiding the dental office. This example of operant conditioning can be an important reason for failed and cancelled appointments, late arrivals, and general noncompliance; and its importance is not widely recognized.

When the patient is reasonably alert, he/she may be taken to a recovery area for coffee before being taken home by a responsible escort. It is advisable during this time that a brief, friendly farewell is made by the doctor when possible, that will also strengthen the desire to return for further treatment.

If such common sense, behaviorally-based approaches are included before, during, and after sedation, it is likely that a cumulative calming effect will become evident in future visits. This can progress to a stage where many formerly fearful patients are eventually able to accept dental procedures while fully conscious or in the presence of only very light sedation.

FUTURE EDUCATIONAL DIRECTIONS

Pharmacologic research has led to the development of a number of effective conscious sedation techniques that, provided the administrator is properly trained in their use, can provide major benefits to both patient and doctor. Training requirements at both undergraduate and continuing education levels have received increasing attention in recent years, and standards will undoubtedly continue to improve and to incorporate new advances in pharmacology. Much that is worthwhile has already been achieved since the original ADA Guidelines were published in 1971, and this trend should continue.

It is my hope that equal efforts will be applied in the behavioral area, that in many dental (and medical) schools is approached tentatively and/or inadequately, if considered at all. Dental pioneers in the behavioral field have often found it difficult to capture the interest of

students and fellow faculty members in what is sometimes seen as a peripheral or even nonpractical subject. However, to obtain the optimum from our pharmacologic techniques, we cannot ignore what psychology has to offer, as Egbert and his fellow workers³⁴ found many years ago. Teaching the importance and understanding of behavioral factors in the management of fear, non-compliance, and chronic pain should surely now be an important part of the curriculum of every progressive dental school.

Hopefully, the time is not too distant when a teaching philosophy is established in our dental schools that aims at this integration of behavioral and pharmacologic patient management. Such teaching will encompass the behavioral sciences as they relate to the understanding and management of acute and chronic dental pain, and the teaching of communication skills; as well as the prevention and management of both patient and professional stress.

Instruction will also include modern pharmacologic techniques, with clinicians skilled in both behavioral and sedation modalities working to achieve this desirable optimum in patient management and care. Ideally, teaching should start in the first professional year, introducing the basic behavioral concepts at a time when students are receptive and less concerned with clinical requirements. The training should be continued through the clinical years, with courses planned so as to incorporate these concepts in a meaningful way. An example of this may be seen in the sophomore year at the University of Southern California, where local anesthesia is used as the first clinical application of behavioral and communication skills to a technical procedure. Students readily relate to the importance of a sound behavioral approach to this traditionally feared procedure. A similar approach could well be used in the senior years, with operative dentistry, surgery, and the teaching of sedation incorporating similar behavioral concepts.

CONCLUSION

A personal view of a practical, effective philosophy based on a combined behavioral and pharmacologic approach to patient management has been presented. To achieve the optimum in patient care and practical skills in this area, the groundwork should be prepared during the undergraduate years. While continuing education courses can do much to rectify past years of neglect, more attention must be paid by our teaching establishments to this critically important aspect of the delivery of effective dental care.

REFERENCES

1. McCarthy FM. Sudden Death. In: McCarthy FM (ed), *Emergencies in Dental Practice*, 3rd ed, Philadelphia, W.B. Saunders, 1979, pp 3-14.
2. Foreman PA. Very light anaesthesia in dentistry. *NZ Dent J* 1965;61:18-20.
3. Foreman PA. Intravenous sedation: a technique for the routine dental treatment of the apprehensive ambulant patient. *Anesth Progress* 1966;13:218-223.
4. Foreman PA. Intravenous sedation: a technique of pain control for conservative dentistry and minor surgery. *Aust Dent J* 1967;12:332-338.
5. Foreman PA. Pain control and patient management in dentistry: a review of current intravenous technics. *J Am Dent Assoc* 1970;80(1):101-111.
6. Langa H. *Relative Analgesia in Dental Practice—Inhalation analgesia and sedation with nitrous oxide*, 2nd ed, Philadelphia, W.B. Saunders, 1976.
7. Trieger N, Carr S. Pharmacosedation—inhalation route. In: McCarthy (ed), *Emergencies in Dental Practice*, 3rd ed, Philadelphia, W.B. Saunders, 1979, pp 280-315.
8. Foreman PA, Neels R, Willetts PW. Diazepam in dentistry. *Anesth Progress* 1968;15:253-259.
9. Foreman PA. Intravenous diazepam in general dental practice. *NZ Dent J* 1969;65:2432-2532.
10. Healy TEJ, Edmondson HD, Hall N. Interdisciplinary study of diazepam sedation for outpatient dentistry. *Br Med J* 1970;3:13-17.
11. Driscoll EJ, Zale JS, Lightbody PM, Fiorucci RD. Sedation with intravenous diazepam. *J Oral Surg* 1972;30:332-343.
12. Jorgensen NB. Local anesthesia and intravenous premedication. *Anesth Progress* 1966;13:168-169.
13. Berns JM. "Twilight sedation": a substitute for lengthy office intravenous anesthesia. *Journal of the Connecticut Dental Association* 1963;37:4-9.
14. Shane SM. Intravenous amnesia for total dentistry at one sitting. *J Oral Surg* 1966;24:27-32.
15. Foreman PA. Control of the anxiety/pain complex in dentistry: intravenous psychosedation with techniques using diazepam. *Oral Surg Oral Med Oral Path* 1974;37(3):337-349.
16. Foreman PA. Pharmacosedation—intravenous route. In: McCarthy (ed), *Emergencies in Dental Practice*, 3rd ed, Philadelphia, W.B. Saunders, 1979, pp 327-328.
17. Laskin DM (ed). *Guidelines for the Teaching of Comprehensive Pain and Anxiety Control in Dentistry*. Pain Control Conference, Columbus, Ohio, October 25-26, 1970. American Dental Association Council on Dental Education. Published May, 1971.
18. Foreman PA, Donaldson D, Jastak JT, Reveal DR. Continuing education in intravenous sedation. *Anesth Progress* 1982;24:163-167.
19. Report of the California Board of Dental Examiners. *State of California vs Tony Protopappas*. *Anesth Progress* 1983;30:96-98.
20. Trieger N. Response to "20/20" Program. *Anesth Progress* 1983;30:135.

21. McCarthy FM. The Protopappas anesthesia deaths. *J Am Dent Assoc* 1985;110(1):26.
22. Conscious sedation: benefits and risks. *J Am Dent Assoc* 1984;109(4):546–557.
23. Foreman PA. Conscious sedation and the public. Letter to the Editor, *J Am Dent Assoc* 1985;110(5):668.
24. Foreman PA. Behavioral considerations in patient management. *Anesth Progress* 1979;26:161–166.
25. Foreman PA. An integrated approach to the management of dental anxiety. *Aust Dent J* 1984;29:1014.
26. Milgrom P. Perspectives from a dental school-based fear clinic. *Anesth Progress* 1986;33:62–64.
27. Kleinknecht RA, Klepac RK, Alexander LD. Origins and characteristics of fear in dentistry. *J Am Dent Assoc* 1973;86(4):842–848.
28. Scott DB, Hirschman R, Schroder K. Historical antecedents of dental anxiety. *J Am Dent Assoc* 1984;108(1):42–45.
29. Berggren U, Meynert G. Dental fear and avoidance: causes, symptoms and consequences. *J Am Dent Assoc* 1984;109(2):247–251.
30. Friedman N. Iatrosedation: the treatment of fear in the dental patient. *J Dent Educ* 1983;47:91–95.
31. Gatchel RJ. Impact of a videotaped dental fear-reduction program on people who avoid dental treatment. *J Am Dent Assoc* 1986;112(2):218–221.
32. Waller W. Development of a computer-assisted behavioral skill training system. *J Dent Educ* 1983;47:107–109.
33. Gershen JA, Marcus M, Strohle A, Pretzinger M. An application of interpersonal process recall for teaching behavioral sciences in dentistry. *J Dent Educ* 1980;44:268–269.
34. Egbert LD, Battit GE, Turndorf H, Beecher H. The value of the pre-operative visit by an anesthetist. *JAMA* 1963;195:553–555.
35. Dworkin SF. Integrating behavioral and pharmacological modalities. *Anesth Progress* 1986;33:55–59.
36. Weinstein P. Integrating behavioral methodologies into dental pharmacological research. *Anesth Progress* 1986;33:55–59.
37. Dworkin SF. Psychological considerations for facilitating anesthesia and sedation in dentistry. In: Dionne and Laskin (eds), *Anesthesia and Sedation in the Dental Office*, New York, Elsevier, 1986, pp 15–28.
38. Corah NL. Development of a dental anxiety scale. *J Dent Res* 1969;48:596.
39. Beecher HK. The powerful placebo. *JAMA* 1955;159:1602–1606.
40. Wolf S. The pharmacology of placebos. *Pharmacol Rev* 1959;11:689–704.
41. Laskin DM, Greene CS. Influence of the doctor–patient relationship on placebo therapy for patients with myofascial pain-dysfunction syndrome: a comparative analysis. *J Am Dent Assoc* 1972;85(4):892–894.
42. Levine JD, Gordon NC, Fields HL. The mechanism of placebo analgesia. *Lancet* 1978;2:654–657.
43. Goldstein A, Grevert P. Placebo analgesia, endorphins and naloxone. *Lancet* 1978;2:1385.
44. Epstein JB. Understanding placebos in dentistry. *J Am Dent Assoc* 1984;109(1):71–74.
45. Janis IL. Psychological stress, psychoanalytic and behavioral studies of surgical patients. New York, John Wiley, 1958.