Valium Induction

Mary Alice Costello, C.R.N.A.*
Cincinnati, Ohio

In this day of instant communications, we tend to think that the whole world is caught in the grip of new tensions, hitherto unknown to mankind. The world shares its problems and anxieties via modern news media, with the result that escape from reality, on the drug route, seems to be the only answer for many.

What we forget is the proof produced by anthropologists, historians, and archeologists, that tension has apparently always been the lot of man. It is now known that men have sought measures to relieve pain and combat tension for many thousands of years. As Aldous Huxley wrote, "It is evident that primitive man experimented with every root, twig, leaf, and flower, every seed, nut, berry, and fungus in his environment. Pharmacology is older than agriculture." We are reminded in a booklet entitled "Pain," issued by the United States Department of Health, Education and Welfare, that pain killers were recorded thousands of years before Christ and that ancient man used opium, surgery, heat, cold and massage for the relief of pain.

It is the old story of how very little is new under the sun. Basically, the man of 1970, for all his scientific sophistication, is still searching for improved ways to alleviate pain and eradicate tension. We have come a long way from the ancient dependence on opium and later the dependence on morphine; but our search for the finally satisfying answer is a search we share with generations who have gone before us.

As many authorities recognize, a little tension may be a very good thing. Some fears are not only rational, but necessary to survival, and the release of adrenalin is a meaningful provision of nature. Tension seems to be the inevitable lot of individuals living in society. Man—the one "being aware of himself," identifies his longings and, finding them frustrated at every turn, builds up tensions within himself. Tensions, like fears, are not necessarily irrational or without sensible cause.

Among the acceptable and reasonable tensions is the apprehension felt by patients who are awaiting surgery. Physicians have recognized and accepted these kinds of tension and have resorted to the use of various drugs to relieve them. For the patient, the whole aura of the operating room is mystifying and frightening. Even the clothes worn by operating room personnel have a forbidding quality: the caps, the masks, the gloves, the gowns. To the uncomprehending patient, even the great lights are cause for
fear; something of primitive man's awe of the unknown overpowers him in that strange room.

For a century and a quarter, anesthesia has been the answer to the patient's normal fear of the agony of surgery. In more recent decades, calming medications have routinely been administered before surgery. Patients are often given a combination of Demerol, atropine, and Nembutal. This frequently leads to unconsciousness before the patients reach the operating room.

Recently we have been using the drug Diazepam (Valium) to accomplish the basic goal of reducing pre-operative tension. We have successfully used Valium in many kinds of surgery, involving all varieties of anesthesia.

Our search was for 1. an effective drug, which could adequately do the job we asked of it; 2. a drug which had been satisfactorily tested on a broad spectrum of cases; and 3. a drug which would leave a minimum of aftereffects to be combated by the patient. As a bonus, we hoped for a drug which might permit the use of lower amounts of anesthetics.

We think we have found such a drug in Valium, which has been successfully used for years in the control of tension and in the treatment of psychoses and neuroses. The patient approaching an operating room is in a state of tension, not psychosis, but we hoped to discover how effective Valium would be controlling that tension.

We tested Valium on 575 patients of all ages and in many conditions; we tested it in oral surgery as well as in general surgery; we used it as an accessory with many combinations of anesthesia. Our experience with Valium at General Hospital in Cincinnati has been altogether gratifying. With it, we have been able to relieve the patient of that normal tension arising at the prospect of surgery. We have used it successfully in cardioversions, and in oral surgery. Valium may very safely be used to anesthetize the patient without prolonging the recovery period.

In many respects, our findings paralleled those reported in a symposium on Diazepam held at the Royal Society of Medicine, London. A major conclusion of the symposium was that the danger of toxicity from Valium is minor, compared to other available drugs. This is true even of heavy doses (50 to 60 mgs. — far exceeding the normal dosage of 5 to 10 mgs. — which we used).

CLINICAL EXPERIENCE

Two hundred of our patients, who were to have surgery, ranged in age from 16 to 65 years. Upon arrival at the operating room, the effect of the premedication was judged by the anesthetists as being adequate, depressed, or poor. One hundred-twenty-five were adjudged to be poorly pre-mediated, and these were given an empirical administration of 10 mgs. of Valium intravenously. Our study closely paralleled several British studies, as well as the study made under the direction of Dr. Frank J. Torretta, director of the Department of Anesthesiology, Montgomery Hospital, Norristown, Pennsylvania. Those studies, as well as ours, evidenced basically that Valium is an excellent calmative agent, producing a state of relaxation in the patient before surgery and also providing a degree of amnesia afterwards.
In giving the Valium intravenously, we diluted 10 mgs. of the drug with 5 cc's of glucose and water, and injected it slowly. In no case did this procedure produce changes in the blood pressure, pulse, or respiration. All vital signs remained unchanged. But the patient did go into a light sleep from which he was easily aroused. He was, throughout, able to respond to verbal commands. Patients who were to be given Pentothal sodium required appreciably smaller doses for anesthesia. Their vital signs remained much more stable, not undergoing the precipitous changes often observed.

Many patients included in our study were to receive conduction anesthesia, an experience which carries its own traumas for patients. While no pain is felt under anesthesia, the patient remains aware of the sights and sounds surrounding him, as well as sensations accompanying pressure and touch. As a result, many patients do not relish being awake during their surgery and, when fully awake, they often misinterpret what they hear and see. Sometimes they believe they have received insufficient anesthesia. Frequently, they are rigid with fear and apprehension.

In our test group, the 200 patients ranged from 14 to 95 years. The amounts of Valium we used varied with the needs of the individual patient; often a small dose of from 2 to 5 milligrams was sufficient to produce a state of comatose tranquility in the patient.

We discovered that patients under the age of 70 required larger doses than did those over that age, with our maximum dosage being 10 milligrams. Elderly patients (those over 75 years of age) responded well to the minimum dosages, and did not suffer the disorientation which so frequently follows sedation with barbiturates. Nor did the Valium produce that other familiar disadvantage which often follows the administration of barbiturates—restlessness as a result of cortical depression. The patient moves about a great deal and fails to respond to the commands of the anesthetist. With Valium, none of these results was observed. Throughout the procedure the patient and the anesthetist maintained easy communication.

CARDIOVERSION

Our research showed clearly that Valium may be successfully used in cardioversions. The use of Valium for this procedure was praised by British surgeons in the Royal Society Symposium and is common in this country. In cardioversion, which uses electric shock with a direct current cardioverter, there is a need for swift-acting anesthesia of very short duration. To provide such anesthesia we used Valium on 75 patients between the ages of 50 and 85 years. Two to ten milligrams were administered intravenously; and in many cases, 5 mgs. were sufficient for patient-ease while the blades were applied and the procedure completed. Often we used accompanying doses of Pentothal sodium added to the Valium to produce amnesia and relieve the tension and stress experienced by the patient. Relaxation was produced in all patients, accompanied by amnesia, and complete recovery from the effects of the Valium followed quickly. Our experience with the drug in the cardioversions was thus highly satisfactory, and we envision a more widespread resort to Valium as an alleviating agent in this procedure.
ORAL SURGERY

Very little has been published on the use of Valium for outpatients in oral surgery. Our study included one hundred such outpatients between the ages of 14 and 65 years. Because of its relaxant properties and its demonstrated lack of aftereffects, we decided to test the use of Valium in oral surgery. Other anesthetics require elaborate recovery arrangements and produce effects such as disorientation or prolonged drowsiness. Moreover, as is commonly known, many persons put off needed oral surgery because of their fears of the procedures.

Valium's characteristic ability to eliminate tension seemed to be exactly what we sought. We administered ten milligrams of Valium intravenously, after which, with the patient relaxed, the local anesthetic was easily given. The oral surgeon was able to examine the patient's mouth before extraction; and no seriously detrimental aftereffects were noted. Pentothal sodium was then administered in small amounts (an average of 25-100 mgm) with the Valium to complete the anesthesia and surgery.

Prior to the use of Valium in oral surgery, a narcotic plus the average one-half gm of Pentothal sodium was administered for routine extractions. This combination frequently occluded the airway, produced circulatory changes and lengthened the recovery period. It should be noted that this anesthesia in oral surgery gave the surgeon a full 45 minutes in which to work.

With no prolonged recovery period, patients may depart sooner and the surgeon can perform more procedures in a day than was heretofore possible.

Our tests of Valium on 575 patients have convinced us that we have a valuable agent for the eradication of the normal, rational fears and tensions of the pre-operative period. It has proved to be an admirable sedative for preparing patients mentally and physically to receive anesthesia.

Pre-anesthetic sedation is of the utmost importance to the patient, the anesthetist, and the surgeon. The habit of giving pre-anesthetic medication "on call" is a practice which, more than any other factor, makes for poor anesthesia. The drugs have not had the time to produce the effects for which they were intended. The patient has entertained deep fears, expressed or unexpressed, is given his pre-medication subcutaneously, and immediately taken to the operating room. The pre-medication has not had time to benefit him. He arrives in a state of great agitation and much more anesthesia is required to produce relaxation.

With Valium used in the operating room, fears assaulting the patients are eradicated. Valium may be used alone or synergistically with narcotics or barbiturates. When we have used it as a synergist, we have had to use less of the intravenous barbiturate during the induction of anesthesia.
FIGURE 2
ADDITIONAL USES OF VALIUM

A. - Pre-operatively

1 - To potentiate action of narcotics and strengthen the pre-operative medication

2 - As a pre-operative prophylactic measure to prevent seizures when local anesthetics are to be used

3 - To relieve anxiety associated with certain procedures such as local cystoscopic examinations angiograms and arteriograms

B. - During Surgery

1 - Sedation during local with procedures

2 - Adjunct to conductive anesthesia

3 - During maintenance to cut down on use of muscle relaxants and anesthetic agents

4 - Helps slow the pulse during adrenal and kidney manipulation

5 - Helps depress respiratory drive when trying to control a patient either manually or on a ventilator

6 - Demerol (25 mgms.) I Valium (10 mgms. IV) can be used to control pain to avoid general anesthesia

C. - Post-operatively

1 - To control behavior on emergence from Ketamine

2 - Often provides adequate sedation for change of dressing and deep suture removal
SUMMARY

I do not claim that Valium is the perfect pain-relieving drug for which mankind has yearned for generations. But it has, for us, demonstrated its merit as an induction agent especially for the frightened patient, the aged, for those requiring cardioversions, and for outpatients in oral surgery. With it, we have been able to make the operative experiences of many patients a great deal more tolerable and to put unpleasant aspects beyond the reach of memory.

Many of us would not like to live in a world whose dimensions are set by pharmacology — where the peace and pleasures we yearn for would come from drugs. Our pride as human beings is that we control our own destinies and are not the slaves of outside forces, whether these be government or drugs. But all of us know that pain is an unwelcome experience and few of us reach out to accept suffering with joy. As the French surgeon, Rene Leriche, said, “There is only one pain that is easy to bear, and that is the pain of others.”

As anesthetists, we do not easily bear the pain of others, but work to eradicate those pains insofar as we can. To me, Valium is a trustworthy weapon in our arsenal for fighting the pain of others. As such, I consider it a valuable means for making a most difficult experience more tolerable for human beings.

If chemotherapy has to be used, this is, in our experience to date, the safest of all tranquilizers.

CONCLUSION

Writing on the history of tension, Aldous Huxley predicted, some years ago, that the discoveries to come in pharmacology will be more significant to the individual man than all the recent discoveries in the field of nuclear physics. Pharmacologists, he prophesied, will be able to transform life for us—creating beauty, wisdom, joy, and loving kindness.