



Role of conscious sedation in dentistry.

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ABSTRACT

Management of pain in dentistry is a challenge that ever dentist has to face. Use of local anesthetics has brought about a limit to the amount of pain that a patient has to endure. However pain is mostly precluded by fear and anxiety towards the procedure and the resultant pain and discomfort that one may have to face. To overcome this the use of general anesthesia is employed very often. However due to many of the drawbacks of the use of general anesthesia, newer techniques like the conscious sedation are being employed. The following review highlights some of the advantages for the use of conscious sedation over general anesthesia.

KEYWORDS : Conscious sedation, dentistry, anesthesia

INTRODUCTION:

Pain is an unpleasant emotional experience usually initiated by a noxious stimulus, mediated over a specialized neural network to cortical and subcortical centers where it is interpreted as such. Pain is a complex phenomenon involving fear, anxiety, suffering, emotion, and past experience. Pain results as impulses reach higher nervous system processing centers by way of a neural network and give rise to the peculiar pain experience. This network contains specialized nerve fibers and also involves particular synaptic transmitters and neuro-hormones. Close inspection of the proposed definition reveals the fact that pain has a dual nature. It may be divided into two distinct aspects, pain perception and pain reaction.

Pain perception is the neuro-anatomical process whereby an impulse initiated in the periphery is generated and transmitted to the central nervous system. It is relatively similar in all healthy individuals and markedly constant in the same person from day to day. Pain reaction, on the other hand, is a psychophysiological phenomenon. It is the patient's manifestation of the unpleasant perceptual process that just preceded it. In contrast to pain perception, this aspect varies markedly from patient to patient and in the same patient from day to day.¹

Factors such as fear, anxiety, apprehension, and a bad past experience under similar circumstances decrease the individual's ability to tolerate noxious stimuli. It becomes apparent that, if one is to control the phenomenon known as pain, both aspects must be considered. In dentistry, pain perception is best controlled through the use of local anesthesia, while pain reaction is controlled through the use of conscious sedation. Without any second thoughts it can be said that majority of dental office patients may be managed satisfactorily with local anesthesia alone. However certain patients do require some additional means to manage their anxiety and apprehensions regarding dental procedures.

GENERAL ANESTHESIA IN DENTISTRY:

The first general anesthetic administered for a dental extraction is credited to Connecticut dentist Horace Wells. Having observed at a travelling show that laughing gas induced anesthesia, Wells began experimenting with the gas himself. On the 11th December, 1844, he underwent extraction of one of his own wisdom teeth by a colleague whilst under the influence of nitrous oxide. The following year he attempted to demonstrate this technique in Harvard. Unfortunately, his patient cried out during the operation and Wells was laughed out of the lecture theatre. However, on December 30, 1846, a pupil of Wells, William Morton, exploited the properties of ether to facilitate dental extraction, and this agent was subsequently demonstrated successfully to the public in Massachusetts the following month. The concept of general anesthesia as a means of performing painless dental work

was thus born. This development facilitated the expansion of the dental profession, enabling increasing emphasis on restorative and conservative work, where previously there had been little to offer to sufferers but simple extraction.²

ROLE OF ANESTHESIOLOGIST IN DENTAL SETUP:

The role of the anesthesiologist is to provide comprehensive medical care to the patient undergoing surgical procedure in dental setup. They also manage the patient's medical care throughout the period of their recovery from anesthesia, including postoperative intensive care, when needed. Sometimes anesthesiologists manage anesthesia directly and sometimes they medically direct anesthesia assistants or nurse anesthetists. The anesthesiologist is responsible for the overall care of the patient throughout the anesthetic. In essence the anesthesiologist provides continuous medical care before, during and after operations to permit the dental surgeon to carry out the dental procedures. Constant research and attention to safety has led to a tenfold reduction in anesthesia-related deaths over the past few decades, despite the increase in more challenging operations and in the number of older and sicker patients. However the risks of general anesthesia still exists for management in dental care.

CONSCIOUS SEDATION IN DENTISTRY:

Conscious sedation has become an increasingly important subject in recent years. Its use in dentistry for reconstructive surgery, some cosmetic surgeries, removal of wisdom teeth, or for high anxiety patients has been documented. However it is still not widely accepted in day to day practice. It helps establish communication between dentist and patient which is important for establishing trust, easing a patient's pain, and allowing them to feel they are in control of procedure. The aim is to provide a safe and comfortable anesthesia while maintaining the patient's ability to follow commands. The introduction of new anesthetic applications enables patients to undergo lengthy and complex procedures as outpatients and then promptly and safely be discharged home. The choice and route of anesthesia administration is paramount to the patient's overall surgical experience. If, upon discharge, the patient is alert, has minimal pain, and has no nausea or vomiting, then the surgical experience was a positive one. This level of sedation is used for medical procedures in which it is necessary for the patient to be responsive, and also for minor procedures which do not merit the use of general anesthesia, and for procedures involving patients who cannot cooperate with care providers.³

CHOSING THE RIGHT METHOD FOR DENTAL ANXIETY REDRESSAL:

Conscious sedation offers numerous advantages over general anesthesia which can be summed up as follows.

Conscious sedation alters the patient's mood, thus making him psychologically amenable to dental treatment. Conscious sedation has essentially "changed his mind" toward the pending procedure. It provides for the maintenance of consciousness throughout the procedure. This produces patient cooperation due to the elimination of factors like fear, anxiety, and apprehension that preclude patient cooperation.

Conscious sedation elevates the pain threshold. While not mandatory, elevation of the pain threshold is usually beneficial - particularly when long appointments are contemplated. By raising the pain threshold, extraneous yet bothersome stimulation may be reduced, allowing for a greater degree of patient cooperation over an extended period of time.⁴

This technique permits protective reflexes to remain intact. It is this factor that provides for the inherent safety of conscious sedation. Studies have shown that maintenance of consciousness is the key to retaining protective reflex function. The production of unconsciousness, even for brief periods, results in dramatic alteration of respiratory and cardiovascular system function.

Another significant advantage is that it produces only small variation in vital signs. This objective is readily achieved when consciousness and its attendant normal reflex function are preserved. As a rule, changes in vital signs are toward more "normal" and acceptable levels from those elevated values noted during the apprehensive state.

Conscious sedation does not require continual patient monitoring to the degree required by the general anesthetic state. Since consciousness and normal reflex function are maintained throughout the technique, major deviations in vital signs are not likely to take place. This is not to say that one should take a cavalier approach to the patient's status. Throughout the procedure, the patient should be observed for the presence of consciousness, comfort, and cooperation. It is difficult to imagine major changes taking place in vital functions without altering the status of one or more of these parameters.

Another major advantage is that this procedure produces a degree of amnesia. While it is not a requirement in all instances but the production of amnesia is usually beneficial. Without doubt the application of local anesthesia is one of the most dreaded aspects of dental care. Failure to recall at least this portion of the procedure is usually met with a great deal of patient acceptance. In addition, a degree of amnesia throughout the appointment hastens the passage of time in the patient's mind -another aspect of the technique appreciated by most patients.

Conclusion:

Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression, especially in combination with sedative agents. Conscious sedation — is a depressed level of consciousness, produced by a pharmacological method, which retains the patient's ability to independently and continuously maintain an airway and respond normally to tactile stimulation and verbal command is extremely beneficial. Through the judicious use of pharmacologic agents, conscious sedation, or a state of pleasant relaxation, may be readily produced in a great many patients now undergoing dental care with the use of general anesthesia. By employing regional analgesia for the control of pain perception and conscious sedation for the control of pain reaction, a nearly ideal alternative to general anesthesia may be produced

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