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Editorial

Taking Charge of the Quality of Advanced Training in Pediatric Dentistry in the Teaching and Proficient Use of Sedation: An Editorial

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Abstract

This editorial takes a critical look at contemporary teaching of the proficient (and ineffective) use of pediatric sedation in advanced dentistry training programs. The application of physical restraint (protective stabilization) under conditions where sedative agents and dosages prove inadequate appears rampant, if not universal in many pediatric dentistry residency and postgraduate programs.

Keywords: *Advanced Training; Pediatric Dentistry; Teaching and Proficient; Sedation*

Exploration into what programs use or permit their students to employ reveals a diverse range of agents and dosing. While some make use of sedation effectively, the majority of programs experience a high propensity for failure and either abort for general anesthesia or end up relying on physical restraint to accomplish treatment.

What constitutes a reasonable expectancy for clinical success has never been defined. It has been the observation and opinion of this author that 80% and preferably 90% success is achievable defined as having been able to accomplish most or all treatment objectives without need for persistent application of physical restraint. When asked, pediatric dental residents report experiencing fewer success in the frequency more resembling 20 - 50% [1].

The extent to which programs experience success (or failure) using various agents, combination, and dosing is largely dependent on the knowledge, skills and expertise of its Program Director and supervisory faculty. The occurrence of a catastrophic outcome due to incompetent or less than proficient clinical judgment no doubt has significant impact within a clinical setting for what agents and dosing will be made available through an institution's formulary. Untoward events and failures to reversal/correction of such events, whether within institutional settings or private clinical practice generally filter down to define acceptable agents for a given program.

Where candid inquiry of resident experience occurs, an equally diverse range of responses results. For some, residents report frequent success and safety. These experiences logically contribute to reports that those with a history of successful sedation experiences during their training anticipate using sedation upon graduation. For countless others, deplorable results are reported with low expectations for

the use of sedation upon graduation. When asked based on training experience if residents anticipate making more or less frequent use of sedative techniques in a private practice setting, their responses coincide with the extent that they experienced success in training [1,2].

The fact of the matter is that few programs report making use of a diverse repertoire of agents. The vast majority report making use of a single agent, midazolam, administered orally or intra-nasally. it is not uncommon that dosage ranges employed are 3 - 5 mg largely in an effort to avoid a mishap. In doing so, outcomes have proven largely inadequate. Many program's sedation protocols restrict the use of multiple agents, and/or narcotic supplementation due to fear of adverse respiratory depression or cardiovascular events. The use of excessive (toxic dosages) local anesthetic has been recognized as a frequent causative factor for adverse outcomes. While extensive development of safety guidelines have been available since 1990, there is wide variability in the training experience of program directors and faculty teaching skills using sedation safely [2]. In rare cases, a few programs have initiated periodic continuous education drills to reinforce their ability to intercept and manage adverse responses.

There is an abundance of retrospective support for the use of both Midazolam with and without Meperidine at higher dosing because of their ability to avoid need for restraint, while retaining the ability to be reversed [3]. Despite a paucity of prospective data, considerable support has been provided for the use of more diverse range of agents [4]. An awareness of the need to diligently avoid exceeding toxic dosing of local anesthetic in combination with lowering of sedative dosages is now prevalent. However, those less experienced exhibit reticence to make use of therapeutic dosing of agents like chloral hydrate or midazolam.

A plausible and reasonable approach taken by some programs have limited their sedation arsenal of agents to only those for which reversal can occur. Conceptually this is sound, however only benzodiazepine and narcotic reversal agents exist and as such, limits drug selection. Time tested agents like chloral Hydrate (alone or in combination) and ketamine are not uncommonly eliminated or discouraged.

This editorial proposes that residents, faculty and program directors make a concerted effort to evaluate their experiences and protocols under circumstances where sedations prove inadequate on a frequent basis. Involvement with other regulatory agencies (Commission on Dental Accreditation and the AAPD) is encouraged. While there are exceptions where programs are making use of a diverse repertoire of agents based upon relevant selection criteria, accurately determine dosage criteria as per the level of patient anxiety and resistance and the demands of treatment, the vast majority of programs make use of highly restrictive agent and dosing.

Assessment of opinion of numerous pediatric dentists recently having completed advanced training reveals that few expect to make use of oral sedation in their private practice setting. They largely cite highly limited success with its use during their training. During such, they indicate being highly restricted in agent and dosage selection and need for persistent physical restraint to permit accomplishment of any treatment objectives on challenging and highly refractory subjects. The arsenal of agents made available for these pediatric dentists is reportedly highly limited to single agents of weak efficacy. These responders indicate a predominant reliance on unconscious techniques to avoid need for physical restraint, a modality parents find even more objectionable. More easily said than done, many state and regulatory agencies by virtue of catastrophic outcomes have chosen to impose strict restrictions on what agents in their region are available [2]. In the absence of more experienced and better trained program directors, such actions to enable critical review of institutional protocols is unlikely.

As a clinician, researcher, and academic for 45 years, and a friend of the court serving as consultant and expert witness on several fatal outcomes, one cannot place blame on parties looking to constrain the use of pediatric sedation, particularly where incompetence prevails.

Despite guidelines generated on timely review to clarify reasonable demands on clinician judgment, the fact of the matter is that catastrophic outcomes and morbidity continue to be reported. The decision to make use of unconscious techniques to render care to so many who are potentially manageable by the appropriate and proficient use of sedative agents remains a challenge for parents and experienced program directors.

Acknowledgment

This editorial solely reflects the opinions of the author.

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