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EDITORIAL

Controversies in Behavior Guidance and Management of Challenging Pediatric Dental Behaviors and Anxiety: Avoidance of Restraints Wherever Possible

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Abstract

This editorial addresses an aspect of child behavior management currently considered acceptable in the dental setting where strategies for controlling interfering and disruptive behavior include use of physical restraint and other adverse techniques. It is the belief of this author that, under very limited circumstances is the use of physical restraint or adverse strategies remotely appropriate for children. The use of protective stabilization, the term used by pediatric dentists to soften the description of holding a child down, restricting arm, leg or head to prevent potentially harmful movement is found ill-advised, inappropriate, and for the most part virtually avoidable without evidence based support to those who consider themselves child advocates. Almost without exception there are alternative management strategies or techniques to accomplish unpleasant and invasive therapy on pre-cooperative, apprehensive, and resistive children which in essence by this observer need to be exhausted before resorting to restraint. In the absence of making use of alternative strategies, those compelled to recommend and apply these adverse techniques do so out of frustration/impatience and/or a lack of familiarity, experience, or comfort using alternate measures inclusive of efficacious pharmacological approaches. That said, however, there are but a few, al beit without question, instances in which restraint may be justified and these will be described.

Introduction

Management of children lacking cooperative potential poses a significant challenge for those manifesting significant apprehension and an ability to respond favorably to conventional non-pharmacological approaches [1]. The use of immobilization in the treatment of infants, children, adolescents, or patients with special health care needs is a topic of that concerns health care providers, care givers, and the public [2]. Considerable thought must be given by health care providers when choosing such methods to overcome disruptive if not dangerous or harmful behaviors during the performance of invasive dental procedures. Ongoing awareness/assessment of the patient's physical and psychological well-being during the dental procedure must be performed. For a patient experiencing severe emotional distress or hysterics, protective stabilization must be terminated as soon as possible to prevent possible physical or psychological trauma [2]. In addition, application of passive restraining devices carries potential to constrain chest expansion and compromise to airway patentcy.

Dental treatment is openly regarded as unpleasant by much of society. Despite best efforts of the dental profession to dispel this impression, the fact of the matter remains that invasive dental treatment can represent a potentially threatening and unpleasant event for both very fearful and apprehensive children and adults. Resorting to the use of restraints to coerce cooperation for recognizably unpleasant procedures seems at first glance a form of torture reserved for the most reprehensible of human behaviors to impose such for children within the dental environment would seem abhorrent and at the least unforgivable. Nevertheless, for many dentists, exposure to the application of restraints occurs early in training of the pre-doctoral student when first confronting challenging pediatric behaviors. In the undergraduate clinic, for the purpose of providing local anesthesia and cavity preparation both faculty and students find almost insurmountable limitations in the arsenal available to best manage resistive and interfering behaviors. Advanced behavior management strategies are not readily available; referral to the postgraduate clinic is rarely an option and dental students and faculty attempt to make the best of situations they are forced to confront. Regretfully from the perspective of students' initial child contacts, limited resources and management skills for challenging child behavior has potential to leave a dismal recollection of pediatric dental experience for many students. True child advocates, skilled in alternative management

avenues have long been successful in creating a child-friendly environment through effective communication strategies and when appropriate, pharmacologic approaches. In today's environment following contemporary standards, the use of protective stabilization is commonplace under conditions where the use of sedation alone falls short of obtunding interfering behaviors to permit completion of treatment.

It is here that all too often this serves as the single most abused rationale and justification for the use of restraints or "protective stabilization".

An argument made below in this manuscript will focus on the need to make use of more effective pharmacologic strategies as an alternative to the deployment of restraints.

In forty years of academics and private practice, among the most disturbing reports encountered on an almost every day occurrence from parents is the "dentist held my child down" or became frustrated when my child was not obeying his/ her requests to cooperate. Almost invariably, discussion with the parent reveals it became apparent the dentist became adversarial losing his/ her self-control. This observation/complaint appears not to be limited to general dentists but includes pediatric trained dental specialists who for whatever reason, temperament, pressure to generate revenue and productivity, weak training, or lack of a diverse arsenal of behavior management strategies in their 'bag of tricks,' find the application of adverse techniques the end of the road to their control of interfering behaviors. Mark Twain remarked "if you only have a hammer, all problems tend to look like a nail."

Nowhere does this seem more appropriate than for managing the vexing manifestations of childhood anxiety and uncooperative behavior. Parenting has its challenging moments; child rearing is plagued with uncertainty. The search for paradigms for solutions to enhance patient acceptance when confronting varying levels of cooperation continues. The dental office setting has potential to present imposing demands to provide quality treatment under conditions that fall short of optimal. Literally tens of thousands of adults continue to report avoiding dental care for reasons related to the fear and unpleasantness of treatment, let alone the recollection of unpleasant and/or painful experiences as a child. Such experiences no doubt gravitate to children under circumstances where clinicians lack refined proficiency in making available broad, diverse and advanced skills in helping children of all ages and temperament to best cope with the unpleasant rigors of dental care, be they minimal or invasive treatment needs.

Major psychological theorists have described their perceptions of timid and fearful children [3-6]. No where in the opinion of this author are these conceptual observations more spot on or better described. They believed those children lacking a history of successful experiences coping with stress, focused on the negative aspects of noxious stimulation (local anesthetic and drilling) and exaggerated the stress these imposed. They were less able to appraise the limits of threat and as result, were less able to channel their responses into coping behaviors. Such individuals required more time and experience to accurately appraise their situation and manifest coping behaviors. Careful attention to these astute details might best enable clinicians to make best use of fundamentals of behavior guidance through conventional communication strategies as opposed to more advanced techniques where conservative approaches are prematurely abandoned.

The American Academy of Pediatric Dentistry, (AAPD) envisions among its missions the tacit responsibility to protect children and prepare its membership for proficiency in behavioral management skills which seeks to preserve child self-esteem and offer safety when providing needed treatment. As child advocates, it is somewhat surprising that the use of physical restraints constitute an acceptable pathway in today's practice. Only recently has the AAPD acknowledged that little is known about safety of todays' practice. Dentists' abilities to assess patient tolerance and apply sound principles of proven management approaches for differing levels of cooperative potential is highly variable [7]. On the positive side, future energies we are told are being directed to better assess safety and scientifically provide evidence based data where possible. Various mainstream and advanced behavior management techniques have long been described to manage fearful, pre-cooperative, and resistive behaviors. Despite considerable clinical opinion based on fundamental principles of child psychology and occasional if not limited evidence-based support, amongst approaches still identified as appropriate, use of physical restraint is today considered acceptable when hidden within the realm of informed parental consent. General agreement, however, identifies that the use of restraints should never be used as substitute for following fundamental principles of behavior guidance or used as discipline, convenience or retaliation [2]. The premise of this editorial is that there are very limited instances where the use of restraint may be justified. Except for these limited circumstances, use of restraints can and should be eliminated. At a minimum, application of restraints under conditions where care lacks urgency should compel parents and dentists to explore and exhaust alternative strategies. In both the short term and long-term perspective of creating patients accepting of care, it is highly difficult to conclude restraint techniques can contribute to that goal. A barrier however to progress in this direction remains in the arena of viable safe, and efficacious pediatric sedation pathways. It might be hypothesized that need for restraints coincide with an absence of efficacious and safe sedation agents and dosing sufficient to overcome varying levels of apprehension and patient resistance. Contemporary sedation curriculum varies widely with respect to how to best determine agent and dosage selection to achieve patient acceptance and consciousness while minimizing adverse reactions and risk. Perhaps the rule rather than exception is a generalized acceptance of the use of the lowest dosing, at the expense of making use of restraints to avoid the occurrence of deeper than desired levels of sedation. Complicating this process is a decreasing armamentarium of agents that seek to avoid agents without reversal capabilities. Complicating the challenge of successful behavior management are Iatrogenic Causes of Misbehavior and non-coping behavior that further contribute to the use of restraint. Dentist-induced causes of misbehavior, heightened anxiety and non-coping behavioral responses are numerous

in origin [8]. Possibly the most frequent etiology is a failure to anticipate or secure adequate pain control to perform treatment. The dentist must accurately perceive the extent to which pain control is necessitated and take appropriate steps to verify it has been achieved. Accurate assessment of a child's pain threshold and need for adequate anesthesia is foremost in the interception of behavioral deterioration. All too often, dentists lacking experience and good judgment as to when or when not to administer local anesthesia, attempt to perform treatment without local or regional anesthesia. In many instances, inadequate time to permit anesthesia is simply not allocated. Appropriate testing to verify when pulpal anesthesia has been achieved is often overlooked. Some clinicians simply lack confidence in their ability to safely and gently introduce anesthesia to young pre-cooperative children or those lacking coping skills. These scenarios often result in spontaneous and rapid deterioration in child behavior and visits are terminated with after the fact referral to specialists possessing greater communication and/or advanced management skills. Alternatively, deployment of restraints to an already uncomfortable patient occurs with little expectation for childhood acceptance.

Some non-pulpal procedures may be accomplished without local anesthesia. Under-estimation of the need for pain relief heads the list of iatrogenic causes of non-coping behaviors of children. Clinician frustration from less than optimal productivity can result to no one's benefit. Setting excessive or unrealistic expectations for patient tolerance, attempting to accomplish more treatment than should be expected frequently has potential to redirect one's attitude from acceptance of care. Failure to acknowledge a child's limited attention span or tolerance for treatment is not uncommon. In-efficient technical management of dental pathology or a lack of proficiency performing specialty procedures can contribute to deterioration of cooperative potential. Common occurrences include seeing a child that the generalist now refers after discovering an inability to adequately remove caries or need for pulpal intervention. Referral to a qualified specialist or a clinician with greater communication skills, or a broader arsenal of management proficiency may be in the best interests of all. This scenario often occurs too late in many instances after having created a management problem that need not exist.

Inappropriate verbal communication when confronting initial negative or interfering behaviors to the point of harshness, derision or ridicule, particularly out of frustration or lack of dentist self-control, for whatever reason is unacceptable. Failure to acknowledge or attend to indications of child discomfort can rapidly cause behavioral deterioration. Superficial reassurances telling the child they are not experiencing discomfort, or ignoring child or parental concerns can cause the dentist-patient relationship to rapidly deteriorate to the extent that more advanced strategies (sedation) or management modalities (general anesthesia) will be necessitated when otherwise might have been avoided.

As identified earlier as a complicating factor, proficiency in the use of sedation strategies amongst pediatric specialists is highly variable. While some rarely or never consider a pharmacologic approach, others make variable if not frequent use of sedation pathways on the basis of their training and competency. Many generalists and pediatric specialists make use of nitrous oxide in varying concentrations for virtually all restorative care. For subjects manifesting mild to moderate levels of apprehension, nitrous has potential to aid in the acceptance of local anesthesia and cavity preparation [9,10]. For others, its use is intended to intercept deterioration in cooperation. For older needle phobic children, nitrous is viewed as beneficial. In an adjunctive manner, nitrous is frequently used in conjunction with other sedative agents, to potentiate their effects. These approaches are intended to render sedation more effective and safe. Where interfering movements persist, use of restraints is often employed. The dilemma for the clinician becomes how treatment may under these circumstances be completed with avoidance of general anesthetics. In this scenario, this author suggests that reassessment of agent and dosage selection, or modality is preferable to use of physical restraint.

The choice to abandon conventional strategies, be they communication, nitrous oxide, or more advanced strategies using nitrous oxide and sedation, is not always simple. For some parents, general anesthesia may be perceived as excessive and unacceptable risk; for those without insurance benefits for the prohibitive expense of general, incentives to make use of either sedatives and/or restraint may become preferable.

By today's standards, restraints are employed and included when informed consent is provided. Parents are often told that should sedative agents alone be insufficient to control interfering behaviors, their child will be bound to permit completion of treatment objectives. As stated above, judgment to either increase agent or dosing selection to circumvent interfering behaviors, deploy restraint, or change modality altogether is subject to the experience and expertise of the dentist. On rare and unfortunate occasions, some clinicians may opt for what they know to fall short of adequate dosing (because of inexperience and diminished comfort levels) to help convince a parent to agree to an unconscious technique. Fear of a mishap and change to a more potent sedation strategy remains a judgment call. Knowingly selecting dosing unlikely to circumvent interfering behavior may be used as justification to opt for general anesthesia as the next viable modality; such approaches suggest serious and questionable ethical concerns.

Clinician judgment, proficiency, and appropriate discussion are key with respect to modalities in which both parent and dentist can accept. Communication and informed consent are critical elements to avoid iatrogenic causes of misbehavior and confrontation. Application of physical restraints as a level of sophistication and proficiency to overcome mismanagement of potentially cooperative children would seem counterproductive. Toleration of its deployment under conditions of an absence of enhanced communication or sedation skills seems inappropriate if not a step backward in managing fearful and apprehensive children.

Current Armamentarium for Managing Disruptive Behaviors

At present, behavior management falls into two categories. Basic communication strategies consist of fundamental communication techniques and verbalized tools of control and influence. Where these fall short to overcome fearful and disruptive child behaviors, pharmacological strategies beyond nitrous oxide in which levels of consciousness can be altered, become what has been termed advanced protocols. Also included is use of adverse methods such as the use of physical restraints, protective immobilization, or stabilization.

The past has witnessed the resultant removal of specific adverse techniques once perceived to permit rapid alterations in patient cooperation and avoidance of general anesthesia.

Hand-over-Mouth exercise, described by Craig and more articulately by Levitas in 1974 to defend its value, presented a technique to safely and compassionately help many children in almost spontaneous fashion reverse negative behavior and avoid the subsequent need for either pharmacological or unconscious techniques [11]. This was essentially a communication strategy intended in a timely and gentle fashion interrupt or terminates verbal misbehavior and facilitate the dentist to secure the attention of the child to at the very least, to listen to the dentist in a soft, modulated, controlled and compassionate voice. The dentist gently placed a hand approximating the child's lower face and mouth to muffle the child's verbal protest. The intent was to simply re-direct the child's attention to listening to the dentist. Over the next decade or so, some, however, miss-applied and abused the technique placing their hand over the mouth of children uncomfortably beyond an ability to muffle disruptive child responses. Instead, out of frustration, these operators restricted or covered the airway to a degree that the technique was never described to do. Some applied the maneuver in a manner that left no room for positive interpretation. Voice and behavioral control of the operator was lost and perceptions of misuse became a predominant concern. The technique understandably fell out of favor in light of fundamental and accurate interpretations by pediatric dentists that the technique was misused and abused by dentists who made inappropriate application. For some who maintain the usefulness of this technique when properly used, it's elimination from the behavioral management arsenal has resulted in the greater use or reliance on potent pharmacological strategies with and without physical restraints.

It is with a similar oversight that this author suggests careful and diligent review of how restraints are deployed when confronting persistent interfering behaviors [12]. When pharmacological approaches fail to overcome persistent interfering behaviors, is it appropriate to deploy physical restraint? The frequency by which medication and dosage selection prove inadequate for the purpose of obtunding and eliminating interfering behaviors, and children are being bound to permit completion of treatment vs reassessment of both dosing and modality, is a major concern today. To the extent that numerous researchers have persisted in methodologies that immediately deploy restraints without regard to the shortcomings of their judgment when selecting agents and dosing, the rule rather than exception, is to subsequently react by binding a child at the outset. Evidence-based support of a negative or positive impact of restraints on children's subsequent acceptance of care seems somewhat appropriate if not unreasonable. No substantive data has been provided to indicate a positive effect in this arena. Evidence to the contrary suggests that parents do not wish to witness restraint and see no benefits to restraining their child with respect to subsequent acceptance. It has become clear that strong preferences lie in the direction of selecting more effective sedation strategies and avoidance of adverse management methods altogether. This author cannot recall an instance in which a reasonable parent indicated a preference their child be held down or bound to permit treatment. That does not go to say that there haven't been parents who out of frustration requested restraint over having to return for another visit, or alternatively to avoid general anesthesia.

One option to consider for managing very challenging and interfering child behaviors might include postponement. This includes circumstances where treatment need lacks urgency, or if the only viable approach would include potent sedative medication that raises the level of risk to an unacceptable level, the feasibility of allowing for sufficient maturation to occur until which time that care might readily be accomplished using a safer modality seems reasonable. For the child advocate, this approach may be seen as appealing. For others, perceptions of urgency may find this option unacceptable. It might be hypothesized that pressures to generate income may lead some clinicians to recommend approaches that permit treatment to be accomplished at this juncture. It has been my observation over the years that including postponement is an underused option.

Fiscal pressures to generate revenue should never displace interest in the child's well-being. Urgency of care in these instances should determine both timing and modality selection.

Problematic to this observer is a notion that generalized acceptance accompanies the use of persistent application of physical restraints for neurologically normal pre-cooperative or apprehensive subject exists in pediatric dentistry. Variable if not limited skills of clinicians to select therapeutic agents and adequate dosing to preclude the need for restraints appears the rule rather than the exception in contemporary practice.

When asked if re-assessment of what and how much drug is being used to sedate when restraint becomes needed on a frequent basis, it is perplexing that a majority of clinicians find restraint acceptable. Some parents, regardless of the severity of apprehension and resistance presented by their child or extensiveness of treatment needed, are reticent or refractory to the selection of general anesthesia. While rare, the circumstance has occurred from a handful of parents where they actually have requested we simply "hold their children down and perform treatment." Motives to do so can be difficult to comprehend. Whether acceptable or not, final decisions on modality selection or approach fall on both parent and clinician alike.

Clearly, in these instances, it translates out to the fact that some parents may consider the risks of general anesthesia as unacceptable compared to restraint. Prohibitive costs for families without medical coverage likely accounts for a lack of choice for these circumstances. In recent memory, however, I am unable to recall a parent requesting I hold their children down against their will.

For a unique few, however, this author has had parents express the desire to 'just get it done.'

Under such circumstances, the suggestion that care might best be sought elsewhere becomes viable.

Instances in which active or passive physical restraint may be unavoidable [2].

1. Brief application for traumatic injury where urgency and immediacy of treatment is warranted.
    a. Major lacerations and uncontrollable bleeding
    b. Inability to consider a pharmacologic remedy to overcome interfering behavior due to Urgency of treatment, or recent ingestion of food.
2. Need for brief inspection on young infants and children to ascertain potential treatment concerns.
3. For neurologically challenged incapable of preventing interfering movement by virtue of their disability, but who understand the nature of the restraint and its ability to help them to help the provider to treat.
4. Inability to make use of sedative or unconscious modality with a recognizable degree of urgency involved.

Current Teaching Trends and Implications for Future Study

A current teaching trend in pharmacologic approaches appears to have impact on the need and use of restraint. Mounting institutional, regulatory commission constraint, and social media when alerted to tragic outcomes involving in-office sedation from practitioner incompetence and non-compliance of safety standards likely accounts for pressure to reduce medication dosing to virtually eliminate the possibility of an adverse reaction. Studies have reported diminished comfort levels of program directors and faculty using specific medications and dosing to accomplish treatment objectives with acknowledgment of a frequent need for physical restraint. Some programs have elected to avoid use of any medication regimen that does not possess reversal capabilities. Contemporary teaching programs report heavy reliance on the use of short-acting if not ultrashort acting benzodiazepines, such as midazolam for procedures of moderate or long duration despite full acknowledgment that selection of this agent or low-end dosing for longer duration procedures accompanies persistent deployment of restraints.

Summary

Research is needed to provide controlled data to best enhance our current armamentariums for pharmacological management of interfering behaviors that demonstrate efficacy and safety without need for the use of physical restraint. Contemporary need and use of restraints or protective stabilization under conditions where initial use of sedation proves inadequate should be revisited with respect to appropriateness. Enhanced sedation via retrospective clinical trials comparing various agents and dosing making use of valid behavioral selection criteria, intra- and post-operative treatment assessments, and recovery parameters are needed. Prospective study involving the aforementioned with well-controlled and non-confounded experimental groups seems needed to best clarify how to secure predictable and consistent control of varying levels of apprehension and interfering child behavior to offset the need for otherwise potentially harmful if not barbaric forms of intervention.

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