



CNA HealthPro

Lightening the Risks of Vital Bleaching

As Americans retain their teeth longer and more serious dental problems become less common, the demand has risen for procedures to remove extrinsic discoloration – caused by aging and by cola, coffee, tea and tobacco stains – from vital teeth. The dental profession has responded by offering in-office vital bleaching, a relatively safe and inexpensive procedure that permits patients to brighten their teeth several shades.

In a 1995 survey of more than 8,000 members of the American Academy of Esthetic Dentistry, 91 percent of the respondents said that they have performed vital tooth bleaching. And sales of over-the-counter bleaching products reached almost \$400 million in 1997, up 185 percent from 1995, although the American Dental Association has questioned the safety and efficacy of these do-it-yourself kits.

While vital bleaching using a peroxide compound is a time-tested and simple procedure, risks do exist. As more dentists help their patients achieve the gleaming smile they desire, CNA HealthPro has seen an increase in claims alleging damages due to improper bleaching technique.

Bleaching Methods

Dentist-supervised vital bleaching takes two major forms: at-home bleaching (sometimes referred to as “matrix bleaching” or “nightguard vital bleaching”) and in-office “power bleaching.” Both procedures involve the use of a custom-fitted mouth tray and a sticky bleaching gel containing hydrogen peroxide or carbamide peroxide.

At-home systems generally use a bleach solution containing 10 to 15 percent carbamide peroxide. Patients apply this solution to the dentist-provided, custom-made mouth tray, then leave the tray in their mouth overnight for several weeks. This treatment, when conducted under dental supervision, is generally considered safe and effective. However, the gradual rate of improvement can be frustrating for patients and may result in poor compliance.

Power bleaching uses a more concentrated peroxide solution, typically 30 to 35 percent carbamide peroxide, that is catalyzed by heat. The solution can be applied warm or warmed after application by a heat lamp or specialized laser. Patients undergoing power bleaching, with its higher potency peroxide mixture, are always protected by a rubber dam and constantly observed.

Power bleaching produces quicker, more dramatic results than at-home procedures, but discoloration may return afterwards. To minimize recurrence, power bleaching sessions are often followed by at-home bleaching using a weaker peroxide mixture placed in the mouth for short periods. Alternatively, some dentists perform multiple in-office bleaching treatments scheduled several weeks apart.

Risks

At-home bleaching is a gentler procedure than in-office techniques and consequently poses less risk of patient injury. The stronger chemical solutions and heat source used in power bleaching require careful setup and close supervision on the part of the dentist to prevent potentially serious burns.

Certain other risks inhere in all bleaching procedures:

Tooth sensitivity. This is the most common complaint reported by patients undergoing bleaching. Researchers note that in-office treatment is more likely to result in tooth sensitivity (possibly caused by the effect of heat on the pulp), but that the discomfort is usually mild and short-lived. Patients most vulnerable to tooth pain include those with large restorations, cervical erosions, cracked enamel and similar problems. (See Nathanson, "Vital Tooth Bleaching: Sensitivity and Pulpal Considerations," JADA, Vol. 128, April 1997, pp. 41S-44S.)

Soft-tissue irritation. This is another common complaint, often caused by leakage of bleaching gel around the mouth tray or rubber dam. Badly designed or fitted trays contribute significantly to this risk.

Disappointment. Patients may have inflated expectations about the effects of dental bleaching. As with all esthetic procedures, bleaching results are often judged subjectively, in terms of self-image and social success.

Risk Management Strategies

A review of current bleaching claims shows that the following steps may help protect both your patients and your own practice:

Manage expectations. Before beginning treatment, carefully explain to patients the limitations and risks of dental bleaching – for instance, that it does not work equally well for all patients and all types of stains and that further cosmetic treatment may be necessary. It is essential to evaluate tooth color before and after treatment using a shade guide. You may also wish to take "before/after" photos of the treated teeth with a shade guide included in the pictures. Answer patients' questions thoroughly and clearly and document your discussion.

Assess thoroughly. Check the cause and type of stains and look for underlying pathology. Yellow-brown stains associated with normal aging respond well to bleaching, while blue and gray stains take longer to treat. Vital bleaching is less successful with intrinsic stains such as tetracycline and fluorosis. (See Haywood, "Nightguard Vital Bleaching: Current Concepts and Research," JADA, Vol. 128, April 1997, 19S-25S.)

Avoid anesthesia. Never use local anesthetic during an in-office bleaching treatment. The dentist must rely on the patient's sensitivity to properly adjust the intensity of the heat and to detect and remove any unwanted bleach touching soft tissue.

Monitor sensitivity. Cease power bleaching treatment if a patient feels undue discomfort, and consider using the at-home method if power bleaching causes pain. Analgesics offer relief for temporary, mild discomfort, and fluoride treatments can help lingering sensitivity.

Delay restoration. Wait at least two weeks after bleaching before attempting further restoration, which gives the new color time to stabilize.

Inquire about home product use. Describe the potential problems that may result from using over-the-counter whitening agents, including gum irritation, enamel erosion, uneven whitening and stain recurrence. Explain why a full checkup prior to treatment, dentist supervision during treatment and follow-up afterward are necessary to assure safety and satisfaction.

Performed correctly, vital bleaching is a proven method of helping patients achieve a more attractive appearance. However, practitioners should realize that the procedures, while uncomplicated, are not risk-free. The risk management strategies listed above can help protect patients' safety and reduce dentists' liability exposure.

For a thorough treatment of vital bleaching, including research findings on patient safety issues, check the April 1997 issue of JADA (vol. 128), previously cited in this article, which contains a special section devoted to this topic.

Case History of a Bleaching Claim

Adapted from the claim files of CNA HealthPro.

Bret, a high school student who worked part-time as a model for major fashion designers, decided to have vital bleaching for teeth 5-12. Dr. Tyler described the power bleaching technique to him and administered local anesthesia, explaining that the treatment might cause some discomfort.

The rubber dam was put in place and the bleaching solution applied with saturated cotton gauze. A high intensity heat lamp was placed two to three feet from Bret's face. Dr. Tyler told Bret if he felt any discomfort he should tell a dental assistant, who would check on him every 10 to 15 minutes.

Approximately 30 to 45 minutes into the bleaching process, Bret started to feel a "pins and needles" sensation in his upper lip. Dr. Tyler moved the lamp further away. However, the sensation soon became so unbearable that Dr. Tyler removed the rubber dam and immediately applied ice to Bret's red and swollen lip. Dr. Tyler expressed surprise and concern and told Bret that it should resolve itself.

The next day Bret called and informed Dr. Tyler that his lip was raw and severely swollen, and that he was in extreme pain. Dr. Tyler told him to see his physician immediately.

Three plastic surgeons were consulted, who diagnosed significant, and probably permanent, soft tissue destruction of the vermillion border of the lip and peripheral nerve damage. They also agreed that any surgical intervention should be postponed for at least a year and that neither surgical revision nor surgical tattooing would erase the anticipated permanent scar.

A lawsuit was filed soon afterward, alleging that Dr. Tyler's treatment had not only caused Bret pain and disfigurement, but had effectively ended his promising modeling career.

No expert witness could be found to defend the use of local anesthesia with vital bleaching. The claim was settled out of court.

This publication is for educational purposes only. It is not legal or dental advice. CNA makes no representations as to its correctness or completeness and accepts no liability for any injury or damage that may arise from its use. Specific legal or dental questions should be referred to a competent attorney or dental professional. This material may address and discuss matters for which your policy does not provide coverage, and the material does not create or imply the existence of coverage. Please consult your insurance policy for the specific terms and conditions of coverage.

CNA policies are underwritten by the property/casualty companies of CNA, Chicago, IL. CNA is a registered service mark of CNA Financial Corporation. ©2005 Continental Casualty Company. All rights reserved.