

# Fast track to health

## Accelerated instrumentation can boost motivation for patients and provide consistent results for clinicians.

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Maximizing optimal oral health while fast-tracking aesthetics has become an important concern in cosmetic dentistry treatment plans. The most beautiful veneers or crowns have little value if the health of the periodontium is not established and maintained. As a result, serious consideration of instrumentation protocols is warranted and long over due. The paradigms of scheduling periodontal instrumentation over weeks is not only outdated but may not provide sufficient motivation for clients or consistent results for clinicians.

### FULL MOUTH DISINFECTION

Researchers in Belgium are credited with questioning the protocol of partial mouth disinfection, better known as quadrant therapy, completed over a six-week period, compared to full-mouth disinfection (FMD) or completion of instrumentation in two appointments over 24 hours. Part of the reasoning for this query is the possible translocation of biofilm and bacteria from infected, non-instrumented sites of the oral cavity to newly instrumented areas of the periodontium. Could these infected sites inhibit healing and impact bacteria growth in the periodontal pocket? Was this method of periodontal instrumentation in line with modern approaches to disease management?

Some studies have demonstrated that accelerating instrumentation protocols proved to be advantageous over traditional partial mouth strategies. This research showed the following: a decrease in probing depths, inflammation and bleeding; an increase in clinical attachment levels; a decrease of key periodontal flora; and elimination of bad breath. These results were maintained after the two-appointment

approach for eight months. Additional research has continued with mixed results, and some studies have shown no difference between traditional and accelerated treatment. With this in mind, savvy clinicians are beginning to question the logic of traditional quadrant therapy as the only treatment option as it relates to wound management/healing, client acceptance and quicker healing/evaluation time frames.

In addition to these studies, many research studies examining the impact of adjunctive therapies in periodontal infection include a phase of full mouth scaling and root planing which generally is completed in a matter of days to no more than two weeks. For example, most of the locally applied antimicrobials or antibiotics are placed only after full-mouth instrumentation has taken place. This becomes critical in duplicating the success in clinical practice. Treating an infection in the quickest amount of time is standard in wound management and it makes sense to apply these principles to the oral environment.

With these bodies of evidence, standardization of the most basic of therapeutic and preventive interventions is warranted. While treatment time frames should be standardized to a reasonable medical wound-management model, consideration of new technologies and modalities should also be considered and possible modifications proposed.

### PROPOSED MODIFICATIONS

The original studies of FMD used only hand instrumentation and included the use of chlorhexidine gluconate. The products used were a rinse of 0.2% chlorhexidine solution and a 0.2% chlorhexidine spray for the tonsillar area. Neither is available in the United States. With this in mind the following areas of modification should be considered:

**Ultrasonic and hand instrumentation instead of exclusive hand instrumentation**— Ultrasonic instrumentation has distinct advantages over sole hand instrumentation, such as removal of infective biofilms and pro-



#### Client centered

FMD accounts for a client- and clinician-centered approach to periodontal therapy.

#### Ramped success

Utilization of ultrasonics in FMD protocols can increase success and give patients the high-tech therapy they appreciate.

#### Speedy healing

FMD can help fast-track aesthetic treatment plans and healing.

ducing less root surface damage. From cavitation of wound sites to expeditious deposit removal, powered instruments are a modification of the original study that could positively impact clinical outcomes. Adding VSC neutralizing agents such as 0.12% chlorhexidine rinses may prove effective and could be used to replace the “irrigation of chlorhexidine gel” noted in the original research. Finally, some recent studies have demonstrated that patients prefer powered instrumentation to hand instrumentation as well. (“Patient preference for ultrasonic or hand instruments in periodontal maintenance.” Croft LK, Nunn ME, Crawford LC, et al. *Int J Periodontics Restorative Dent.* 2003 Dec;23(6):567-73.)

**Use of locally applied antimicrobials and antibiotics instead of chlorhexidine gel**—A solution of 0.2% chlorhexidine gel was irrigated three times and brushed on the tongue. When the protocol was carried out without the use of chlorhexidine, the only clinical parameter not realized was reduction of bad breath. To that end, it appears as though the concentration and mechanism of delivery was not optimal to impact healing. The availability of locally delivered antibiotics and antimicrobials designed for placement at the site of infection may provide a reasonable and effective means to assist with control of bacteria and healing. Agents available include a 2.5 mg Chlorhexidine D-gluconate chip in a biodegradable matrix of hydrolyzed gelatin, cross linked with glutaraldehyde, minocycline HCl 1 mg microspheres, and doxycycline hyclate 10% gel. Regardless of the agent used, full-mouth thorough debridement is indicated prior to placement.

**Tongue cleaning with a plastic scraper vs. tongue brushing**—In the Quiryren study, the protocol used included a one-minute tongue brushing with the 0.2% chlorhexidine gel. This procedure sounds challenging and not very client friendly. Replacing this part of the protocol by cleaning the tongue with a plastic scraper would be a reasonable modification. Scrapers recently have been shown to reduce volatile sulfur compounds



## INTO ACTION

# Accelerated instrumentation protocol

- \* **Two appointments** of appropriate length scheduled within 24 hours to two weeks
- \* **Pre-procedural** antimicrobial rinse for 30 seconds to reduce VSC
- \* **Anesthesia** administration/pain control procedures
- \* **Instrumentation**
  - Powered instrumentation with self-contained water/medicament reservoir and antimicrobial irrigant
  - Hand instrumentation
- \* **Placement** of locally delivered/controlled-release medicaments: 2.5 mg chlorhexidine chip (PerioChip, Dexcel Pharma); 10% doxycycline gel (ATRIDOX, CollaGenex Pharmaceuticals Inc); 1 mg minocycline microsphere power (Arestin, OraPharma, Inc)
- \* **And/or 20 mg systemic dosage** doxycycline two times per day to modulate collagenase activity
- \* **Tongue deplaquing/scraping** with antimicrobial/VSC neutralizing agent
- \* **Selective polishing** as warranted
- \* **Post-procedural** rinse for 30 seconds with antimicrobial/VSC neutralizing agent
- \* **Professional fluoride** treatment/application
- \* **Two- to three-month evaluation**
  - Utilization of diagnostic devices to assess clinical outcome
  - Placement of locally delivered/controlled-release agent for non-responsive sites; or prescription for subantimicrobial dosage, doxycycline
  - Appropriate recare schedule
- \* **Re-evaluation** at appropriate time interval with referral for non-responsive cases.
- \* **Daily oral hygiene** should include toothbrushing, interdental cleansing and tongue deplaquing along with appropriate adjunctive chemotherapy for caries prevention, sensitivity control and antimicrobial benefits.

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and odor better than tongue brushing, and would be an easy, more comfortable process for the patient and clinician alike.

**One- to two-week time frame for case completion instead of 24-hour time frame**—Scheduling seems to be one of the biggest challenges with implementing accelerated instrumentation. When the literature is reviewed, instrumentation time frames have gone as long as two weeks for full-mouth completion. This is significantly shorter than partial

mouth protocols and will allow for consistency in the treatment processes, fast track healing times and other planned treatment.

The protocol sidebar on Page 36 summarizes the instrumentation process and suggested modification. These are general considerations; you may have others that result in success and client acceptance.

Fast tracking instrumentation processes are advantageous for a variety of reasons. Consideration and possible revision of current protocols

is warranted and the proposed accelerated process of care may have benefits over traditional treatment modalities. Many progressive clinicians implementing accelerated protocols have realized clinical success sooner and have had an increase in patient case acceptance. In addition, this process of care fast tracks other planned treatment resulting in healthy, happy clientele. 

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