TREATMENT MODALITIES FOR PERIODONTAL INFECTIONS

PART-I: THE HUMAN PERIODONTIUM: HISTOLOGY, BIOLOGY & PHYSIOLOGY
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PART-VI: TREATMENT MODALITIES FOR PERIODONTAL INFECTIONS.

In the US before the 1800's, the main treatment for dental pain & disease was generally simply that of extraction of the offending tooth or teeth. Only a few clinicians in the US —such as Dr. Levi Spear Parmly—had begun to think about the restorative treatment of dental caries by removing the diseased calculus & decay & to then attempt to fill the crude cavity preparation with some sort of a "stopping" agent—such as a copper or zinc phosphate cement—that tended to only be of some temporary treatment.

The individual's concept of routine oral hygiene was almost unheard of amongst the general population in the late 1790's. The historical introduction of Oral Hygiene into the US dental profession was non-existent in the early 1800's. This was because that the few dental schools in the US were mostly focused on extraction of decayed & painful teeth. For most US clinicians, there was a great deal of emphasis that was placed on the making of upper & lower "plates" & removable appliances for edentulous patients than on the mechanical restoration of teeth, which was still in its infancy in the US & most all other countries.

The issues of **teaching courses in oral hygiene** at most dental school curriculums, as well as being discussed at many of the US state & regional dental meetings—as well as informing the general public—regarding the necessity of maintaining routine oral hygiene **was almost unheard of**. Only a very few clinicians were focused on the importance of daily oral hygiene.

In the 1800's a brilliant young individual—Dr. Levi Spear Parmly—from Braintree, Vermont traveled to Boston & apprenticed with Dr. Petrie in his dental clinic for a short time. Parmly then associated with Dr. John Randall who was a prominent clinician that was acknowledged by colleagues & the public to have high clinical skills. In 1816, Dr. Parmly recommended for all of his patients to floss between their teeth with waxed silk thread & to rinse their mouth with various agents.

In 1817 Dr. Parmly traveled to New Orleans with his dentist brother & from there, they soon sailed to London where they opened an office at 104 Pall Mall Square where they quickly developed a large practice & gained the trust of leading notable London dentist clinicians Messrs Thomas Bell, John Tomes, A. Nasmyth & George Waite.

In 1819, Dr. Parmly was so far ahead of his clinical colleagues in oral hygiene, that he published the first such book of its kind "A practical Guide to the Management of Teeth": Comprising the discovery of the origin of caries or decay of the teeth. He stressed the need for skillful daily hygiene for patients to use 3-tools: 1) the toothbrush. 2) dentifrice. 3) dental floss. He wrote, "simple waxed silk-thread was the most important of the three—to be passed through the spaces between the teeth and gums and to gently dislodge the irritating debris—the real source of the disease, which no brush can dislodge." In 1822, Dr. Parmly returned to New Orleans from London where he established & maintained a popular dental practice. In 1841 he received his DDS degree from the Baltimore Dental College during the American Dental Surgeons meeting in Philadelphia. At that meeting, Dr. Parmly presented his thesis on "The Importance of the Preservation of the Teeth."

His early publications to his colleagues were literally the first to identify the cause of caries & periodontal disease as being due to the accumulation of debris around the teeth, which he felt has led to the corrosive actions from the saliva.

He continually advised his colleagues & patients on the means of caries control by "scrupulous care to keep the teeth and their surroundings clean." In 1850, Dr. Parmly traveled to Paris where he wrote many articles in French regarding the positive benefits of oral hygiene for the European clinicians. By that time, Dr Levi Spear Parmly was known by his colleagues throughout the world as the "Apostle of Oral Hygiene". He died in 1859 from a severe case of Typhoid fever & was buried in the Parmly cemetery at Perry Village by the Ohio shore's of Lake Erie.

After almost 200-years since Dr. Levi S. Parmly's strong preventive oral hygiene teachings, where is our profession in regards to the teaching of oral hygiene to our dental students, hygienists & assistants as well as to our dental colleagues & to the general public? We must be more proactive in prevention!

Due to the brevity of space & time, we intend to list most of the various agents & procedures that have been promoted by various clinicians since the mid 1800's to treat

various acute & chronic diseases of the oral gingival & periodontal tissues. A number of these agents literally surfaced for clinical use for only a few decades. Since there were no governmental regulations regarding the biocompatibility or toxicity in those days—many agents were held back from continued clinical use, due to their caustic toxic nature as well as improper instructions on their clinical application. These following agents are listed in no particular order as for a clinical or successful timeline.

Buckley's pyorrhea astringent; Churchill's tincture of Iodine; Talbot's iodo-glycerol (zinc-iodide, glycerine, Iodine crystals, water); Prime's ammoniacal silver nitrate; Eugenol oil; Formaldehyde solution; Merritt's dentifrice of oil of wintergreen, oil of peppermint, Magnesia & sodium chloride; Various concentrations of alcohol mixed with various essential oils for patient mouthrinsing; Saline flushing; Indo-saline solution (sodium chloride, water, Iodine, potassium iodide; Chloramines; hydrogen peroxide; sodium perborate; zinc peroxide; Potassium permanganate; Chromium anhydride; Metaphen (a mercury compound); Mercuric chloride; rosaniline dyes; methyl violet; acriflavine; mercurochrome; methylene blue; brilliant green; Trichloroacetic acid; Arsenical treatments; Metaphen; Mapharsen; Sulfonamides; Penicillin treatments, More recently, the use of tetracycline treatments that were bound to various thin strips that were placed between the tooth & gingival tissues; Many of these agents & procedures were either used as a mouthrinse or sometimes they were even applied directly to the diseased gingival tissues. In most cases, they have all been applied to treat both gingivitis & periodontitis cases with many varied results. However, very few of these & other agents have "stood the test of time" without causing some degree of patient concerns as well as local gingival sloughing or broader systemic problems.

In the 1980's, the research of Professors W. Loesche, S. Syed & their colleagues at the University of Michigan reported on the successful use of Flagyl (metranidazol- a broad spectrum antibiotic against anaerobic microörganisms) that was very effective to arrest both gingivitis, as well as to stop the certain inflammatory stages of periodontitis —without any sort mechanical or surgical intervention.

For mechanical procedures to treat any of the stages of gingivitis as well as periodontitis, there are a number of excellent clinical textbooks that have described the instruments that are used for scaling & root planning to the more involved surgical procedures, in which the gingival is literally cut away from the tooth neck & then gently reflected directly off from the tooth & alveolar bone to allow visual clinical access for direct removal of deep root calculus, diseased cementum as well as alveolar bone—all being unavailable to clinical access without flap reflection. Many times it became necessary for the dentist (periodontist) to actually physically remove the infected gingival tissue & to then place a "patch" of epithelium from another site from the oral cavity e.g. the palatal gingiva over the gingival surgical site. One of the problems has been that many patients find this a removal of palatal gingiva as a very painful procedure, which often results in a lengthy healing phase of several weeks to months.

The use of ***Cal Soft*** agent from Phoenix Dental Inc. has been evaluated in biological studies as well as clinical studies at several universities as well as by independent clinical evaluations. Several clinical observations are now available.

1) The unique composition of the new calculus softening treatment agent—***Cal Soft*** when applied directly to plaque & calculus on the tooth has been clinically demonstrated to rapidly penetrate into & through the sticky Material Alba & layers of calculus to soften the hard debris—beginning to take effect within 15–or 30-seconds.
2) The softened calculus is now easily removed with hand instruments of your choice—making it less of a burden of hand & finger fatigue on the clinician as well as less damaging to the root cementum & dentine surfaces than when an ultrasonic or other mechanical device is used to remove calculus.
3) The use of the ***Cal Soft*** treatment agent from Phoenix Dental Inc. has been demonstrated to shorten clinical chairside time, which allows for a clinician to see & treat additional patients throughout the day.
4) When those patients—who have calculus & periodontal disease—having been prescribed by their clinician to use the calculus treatment agent on a routine home care basis, clinical have reported a reduction in gingival pocket depth with none to slight when they have used ***Cal Soft*** for hand scaling.

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