

PROPHYLAXIS FOR PYORRHEA.

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PROPHYLAXIS for pyorrhea is a subject that should be of primal interest to the profession at large. There is no branch of our science that can be divorced from it nor afford to overlook its fundamental application. A mouth which has the generally recognized symptoms of pyorrhea or even the incipient indications of the condition should never become the field of prosthetic work until prophylaxis has been successfully prosecuted and the mouth restored to health. I am glad to say that this fact is being recognized, and that, everywhere the desire for greater knowledge of the academic and technical phases is made manifest. The question of how the knowledge now at our disposal may be put to universal clinical application and the eradication of pyorrhea be affected by a united effort of the whole profession is one that is uppermost in the minds of all students of periodontia today.

The eradication of disease is not a new idea. Medicine in the last few years has successfully applied discoveries of her scientific workers, to the extent that some of the most devastating diseases of previous generations are rarely seen by the practitioners of the present day. It has been within the professional life of many of us to observe the eradication of dental caries, wherever the prophylaxis methods of Dr. D. D. Smith, the father of oral prophylaxis, have been accepted and applied in our practices. It

is no less possible, with practical knowledge of the structures which support the teeth and the modus operandi of the pathological attack which is made upon them, to, as successfully, eradicate all tendency towards gingival infection and periodontoclasia.

The operative technic for the establishment of hygiene within the mouth will be passed with brief mention. This field has been ably covered by many previous essays from the pens of such well known authorities as Smith, Jungmann, Skinner, Hayden, Spalding and a host of others. A paper which makes no mention of scalers, polishing points, pumice, tape, floss, tooth brushes or any part of the operative paraphernalia of the oral hygienist may be considered exceptional, but all this information may be gleaned from the many already published papers and almost anything that could be written on this subject would be but a review of previous efforts.

I wish to confine this paper to other phases which have been less widely written upon and which seem to me to be vital to the subject. What I desire to make clear is the fact that, while oral hygiene deserves first place in any practical consideration of the subject of prophylaxis for pyorrhea, it is here acknowledged and urged as an essential in treatment, that there are also other factors in the management of cases that may not be disregarded. Oral hygiene

should not be regarded as a universal panacea for an unhealthy mouth.

This paper will present a few practical thoughts on the management of cases, including both the incipient and the post-operative classes.

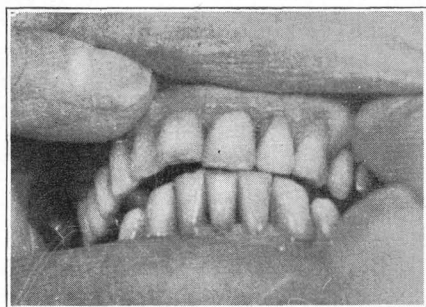
At the outset, we are met with the curious anomaly of these two conditions, differing widely in their symptomology but requiring almost identical treatment.

The initial infection of the subgingival space progresses so subtly in its incipient stage that the line of differentiation be-

dictionary gives the definition for gingivitis as inflammation of the gums. It also states that inflammation has four constant cardinal symptoms. They are pain, heat, swelling and redness, all of which are present in true gingivitis such for instance, as acute ulcerative gingivitis. But, from the initial infection in pyorrhea thru the successive stages to the advanced lesion, these cardinal symptoms of inflammation are conspicuously absent. Inflammation is a constructive process—a process of repair. It is nature's effort to limit the spread of degenerative processes—an evidence of an active defense. Now we may observe that, from the initial infection of pyorrhea down to the day that the tooth is exfoliated, there occurs no evidence of constructive change. Why is this so? Why do not these tissues take on inflammatory symptoms? It is because the structure has previously become subnormal thru an interrupted supply from the lymphatics and blood vessels—the only source of nutrition their cell life possesses. Let us not confuse our diagnosis by employing the term gingivitis to this infection.

Back of all periodontoclasia is the constant primary factor—localized malnutrition, a withdrawal of the nutritive elements, a lowering of cell resistance with its accompanying susceptibility to infection. Metabolism is maintained in all tissues by correct functioning of the part. Food is transformed into complex tissue elements and new cells are formed when these elements are brought directly to the part. It is when these elements of cell repair are prevented from reaching this remote structure—the alveolus—that it is no longer able to reconstruct itself and becomes susceptible to infection. The blood vessels supplying the gingivitis are diminutive capillary vessels, structurally sufficient only as long as they are kept normal by the function of the part mastication; but, with the loss of function, malnutrition is

Figure 1.



Showing traumatic occlusion left upper and lower incisors.

tween it and the pus presenting stage is not easily drawn. The presence of pus depends on bacteriolysis, and, in cases in which the resistance is low, we observe all the accompanying symptoms without the flow. In fact, the active pus flowing type of case is unusual in my experience, altho most cases present evidence of the presence of pus. In cases with marked deformities of the dental arches, especially where faulty habits of hygiene are observed, the destruction of the tissue is, at times, rapid.

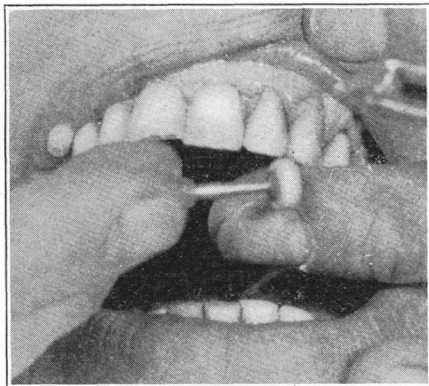
All authorities now agree that pyorrhea has its inception in the subgingival space, and we know that at this time it is as true pyorrhea as in the later stage when the breaking down of the supporting structure is extensive; but all authorities do not agree that the initial infection is necessarily a gingivitis. The medical

inevitable. The underlying factor in the infections which result in pyorrhea, seems to me, to be due to malnutrition induced by loss of function. This may be due to a selection of food that requires no masticatory effort, or to malocclusion where the ability to masticate is inhibited by a deformity of the arches of the jaws, by infectious debris, calculus, or traumatic occlusion.

Traumatic occlusion, as its name implies, is a condition where injury results

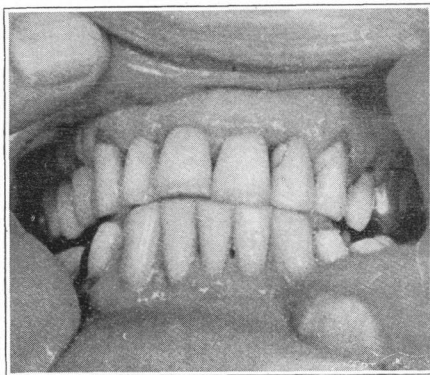
when in any of the closed positions, should it be found that the tooth even slightly displaces in its socket or even receives a shock or thrust, the presence of traumatic occlusion may be considered established. In normal occlusion we observe an admirable co-ordination of jaw with jaw and tooth with tooth. When brought together with any degree of force the inclined planes of the tooth slide cunningly past each other like the blades of a pair of correctly adjusted

Figure 2.



The grinding of the incisal edges to relieve trauma.

Figure 3.



Shows the same case after it had been treated. The distribution of stress has been accomplished.

to the supporting structures by the act of bringing the jaws into closed position. It is an acquired condition and an almost universally constant symptom in established pyorrhea. I cannot place too much emphasis on the necessity of a careful scrutiny for its presence. There is no more important diagnostic sign in the whole field of preventive dentistry than the correction of this condition. In making an examination allow the tip of the fingers to rest lightly upon the crown of the suspected tooth and instruct the patient to close the jaws, using free movement of the mandible, and to bite in all directions with the intention of bringing force to bear on this particular tooth. Should it be revealed that there is a marked displacement of the tooth

scissors. This force is equally distributed thruout both jaws and is not brought to bear unduly on any one or more teeth. The reverse is to be observed in traumatic occlusion. Every tooth having gingival infection is to be suspected of improper stress relation and this condition either established as a fact, or eliminated as a factor before treatment is instituted. The symptoms of traumatic occlusion should take precedence in diagnosis in pyorrhea before all other factors for, no matter if the hygiene of the case has been correctly established, no matter if the difficult root surgery has been carried out with a nicety of technic that would defy criticism, no matter if the contributing constitutional or the protozoan elements have been eliminated,

there still remains this impediment to a complete cure.

I make this statement to you from experience and with no fear of ever being obliged to retract it as unsound. One may look in vain for symptoms of convalescence in all teeth having traumatic occlusion until the condition has been eliminated by treatment and the teeth given complete rest. It is my practice to suspect every case of gingival infection that comes to my hands for treatment of being aggravated and complicated

organs is restored and any predisposed tendency to pyorrhea is, to a great degree, eliminated.

It will be impossible to consider the etiology of traumatic occlusion in the limited time at my disposal.

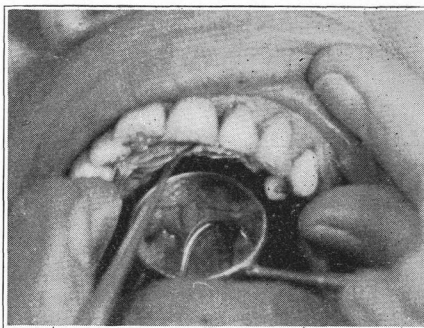
By far the most enlightenment on the fundamental principles of harmoniously functioning dentures has come to me thru the observations of Gysi who applied the true mechanical principles of the anatomy of the jaws in his endeavor to overcome certain difficulties in the

Figure 4.



Showing technic of instrumentation in prophylaxis for pyorrhea.

Figure 5.



Showing technic of instrumentation in prophylaxis for pyorrhea.

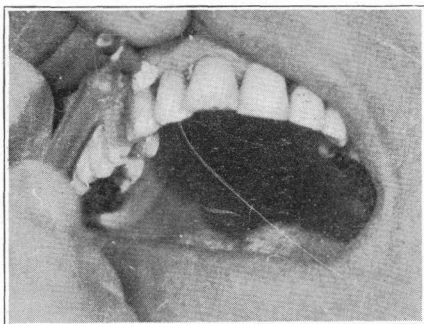
by this pernicious condition, and it is my experience that persistent infections in post-operative prophylactic cases, presupposing of course that the surgical and hygienic technic have been satisfactory, will usually reveal this truth. On account of a drifting of the teeth traumatic occlusion frequently reappears months after it has been entirely corrected.

This phase of occlusion, I think, seldom comes under the observation of the orthodontist. Malocclusion in orthodontia is a physiological aberration or the result of a remote pathological condition, while traumatic occlusion in periodontia is always pathological. Orthodontia's contribution to prophylaxis for pyorrhea is almost beyond estimation. By re-establishing the normal in deformed dentures, the function of the masticating

construction of artificial teeth for the edentulous mouth. Gysi found that there is a malrelation of the teeth that is a factor generally impossible to correct by usual orthodontia treatment. By a correct remodeling of the occlusal surfaces of porcelain teeth and by reproducing the correct anatomical measurements obtained by the aid of his instruments, Gysi was able to produce artificial dentures whose harmony of occlusion was equal to nature's own perfection. It is by applying these principles in treatment that the periodontist today is able to correct traumatic occlusion. Grinding of the teeth for the correction of traumatic occlusion is fraught with many difficulties and dangers. It should always be done under conditions that predetermine exactly where to grind. For this reason we use

carbon paper to indicate the exact points of occlusal contact. Teeth that have been correctly treated for traumatic occlusion never present a mutilated nor grotesque form, but appear as when the change in form has been brought about by natural attrition. They should give one the impression that they are serviceable teeth. By using small stones kept constantly wet and with carbon paper marks as a guide, it will be found that certain dentures may be restored to normal health and function without the aid of splints.

Figure 6.



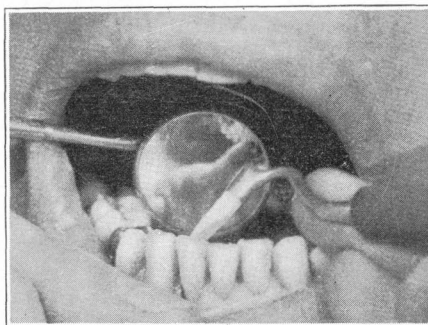
Shows porte-polisher brush for the removal of plaques.

Splints are sometimes necessary where the teeth have become very loose. They should always be removable and temporary. I condemn permanent splints. When a permanent splint is employed in the treatment of pyorrhea, it is evidence that the operator desires to retain in the mouth certain teeth which are badly diseased. Pyorrhea frequently reaches such advancement that nature will no longer tolerate the presence of a tooth so effected and will give no response toward convalescence, to the kindly efforts of even the most skilled operator. Such a tooth is usually necrotic and septic and I need make no argument here against its being for any reason retained in the mouth. I condemn the permanent splint again on the ground that it inhibits the natural teeth

in their exercise, and on this, as I have already stated, depends the nutrition of the supporting structures and consequently their health. And again I condemn the permanent splint of the "bolt and nut" type as the most unsanitary appliance in the whole category of "septic dentistry."

The condemnation and removal of every filthy bridge and the correction of all improper contact points in approximating bicusps and molars is no longer a fad of theorists but a living, moral duty.

Figure 7.

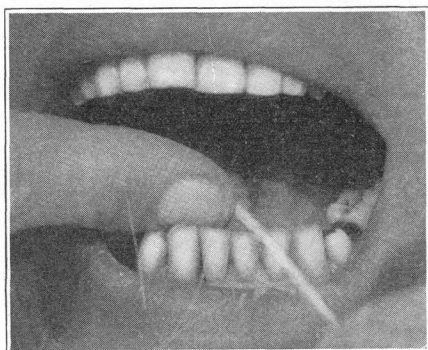


Skinner's porte-polisher as applied in oral hygiene.

My friend, Dr. Ottolengui, in a paper entitled, "The Restoration of Masticatory Function with Carved Gold Inlays," Dental Items of Interest, March, 1916, p. 203, treated this subject from the broad interpretation of prophylaxis for the procedure in inlay restorations. Referring to the application of anatomical tooth form in occlusal and proximal relation, he states: "I firmly believe that the incorrect filling of teeth in the past has contributed largely to the presence of septic conditions in the mouth, more particularly in two ways; first, by a lack of proper restoration of the occlusal surfaces of molars and bicusps, masticatory efficiency has been impaired and the vital resistance has been reduced in exact proportion with the loss of masticatory power: secondly, by incorrect or

inadequate approximal contacts, added to the absence of correct mesial and distal marginal ridges, food, instead of being kept out of the approximal spaces, has actually been driven between the teeth and even been retained in the spaces. As a result, of course, the easily injured septal tissue has been driven back, thus increasing space, inviting the lodgement of larger masses of food debris and eventually resulting in septic infection."

Figure 8.



Polishing the proximal surfaces with floss-tape and abrasive paste.

One of the most troublesome classes of cases with which the dental hygienist has to deal is that which produces large deposits of salivary calculus. Monthly and even weekly prophylaxis is necessary for many cases of this type. Some months ago, while reading Black's pathology, "Diseases of the Peridental Membrane," I decided to put into practical use some of the valuable discoveries on this subject which Dr. Black has left us. I was impressed with the fact, as he related it, that the flow of caloglobulin, which later hardens into salivary calculus, does not begin until about one and one-half hours after eating and that the flow is usually over in half an hour. So I decided to instruct patients afflicted in this manner to make their mouth toilets two hours after each meal, instead of directly after as they had been doing. The effect upon the sali-

vary deposits in two out of five cases so instructed—and, I believe, these two were the only ones who carried out instructions to the letter—was striking. Where deposits had been copious at the end of a fortnight elapsing between treatments, I now found almost no traces. The two successful cases are now completely cured. I regret to say that I have had no opportunity to carry the experiments further, but I am convinced that brushing and flossing at the hour when deposit is freshest is an improvement in method.

Prophylaxis for pyorrhea is a work of conservation. It is not constructive work such as dentistry has applied itself to in the past and it is difficult for many practicing dentistry today to change this point of view. Cultivating the health of the peridontic structures has a striking analogy in the work of the scientifically trained horticulturist. To be successful both must interpret the laws under which cell life is preserved and metabolism maintained, removing all obstacles which impede perfect development. So grateful is nature in her every phase for intelligent service, lovingly rendered, that she returns two for one every kindness.

Much encouragement is to be found in the evidence of awakened interest apparent in the profession-at-large in this most important subject of prevention, and I wish to appeal to each one of you here tonight to take up his or her share of the vast work yet ahead of us, not alone by applying it to individual practices but also, either collectively in your societies or personally among your colleagues, to aid in publicity campaigns that will spread knowledge and awaken enthusiasm among the most remote and obscure members of our professional brotherhood. I cannot put too much emphasis on this fact: prophylaxis for pyorrhea is not a subject for the specialist—it is the first duty of every man practicing dentistry.