RESPONSIBILITY OF DENTAL SCHOOLS FOR THE DENTAL HEALTH AND WELFARE OF THE AMERICAN PEOPLE* †

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A heavy responsibility rests upon dental schools for the dental health and welfare of the American people. The purpose of this paper is to direct attention to this responsibility and to point to some of the steps that have to be taken in discharging it.

People go to dentists for treatment of their dental ills. For the most part they seek and get operative treatment, repairs, and replacements for damage which has been sustained from disease, occasionally from defective development.

The need for effective orthodontic management and treatment is great, but it is not being met at the present time, except only in a very limited way. Traumatic injury involving the teeth comes to relatively only a few people. On the other hand the two principal diseases of the teeth — caries and periodontoclasia — sooner or later affect some, many, or all of the teeth of practically all people. A large part of all loss of teeth is caused by one or the other, or by both of these diseases. These two diseases, therefore, constitute the principal dental health problem of the American people. How they are dealt with determines largely the dental welfare of practically everybody. Here, as with most other diseases, the proverbial ounce of prevention is worth a pound of treatment, repair, and substitution.

Not only are these diseases almost universal, but, for all practical purposes, they are entirely preventable. People in general do not know this. Most dentists do not know it either. They have the same diseases themselves and lose their own teeth, as do also members of their own families, about to the same extent as their patients and others do. If they knew how to prevent this they surely would do it.

The dentist's knowledge of these diseases, treatment of the damage they cause, and his interest in their prevention are determined largely by what he learned (was taught) in dental school. Although repair, prosthetics, and operative treatment are taught with great emphasis, effective prevention is not taught. The student graduates and goes out to practice (or to an internship to be followed by practice) having active disease — usually caries and always periodontoclasia — of some degree in his own mouth.

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Since these diseases are entirely preventable this means that the student did not learn how to prevent them. Perhaps still worse he did not learn that they can be prevented, or to appreciate the importance of preventing them. If he does not know how to prevent these diseases in his own mouth how can he bring prevention to those with whose dental health and welfare he is entrusted?

It is the duty of the dental school, which the student trusts for his early professional training, to provide the necessary instruction, facilities, and opportunity for him to know, of his own knowledge (not simply the opinions of his professors or others), and to understand the essential local etiological conditions in these two most important diseases. Without these local conditions new lesions of these diseases do not originate and existing lesions, with rare exceptions, do not advance.

The causative organisms in these diseases are microscopic, the pathological processes originate and advance microscopically, the tissues involved are composed of microscopic elements, and the lesions themselves at first are microscopic. Therefore, correct information about these conditions can be learned only by miscroscopic study. It is one thing for the student to know (and believe) the opinions of others regarding the microscopic conditions and quite another matter for him to know, from his own experience and observation with the aid of the microscope, the facts relative to these diseases.

No amount of theory and opinions of the best authorities is equal to the knowledge one gets from seeing over and over again the conditions that actually exist regarding the pathological processes and the essential microorganisms which cause and promote advancement of the lesions. This can be done only by microscopic observations and study under the guidance of instructors who themselves know the facts and have the necessary technical knowledge and experience to enable them to use the microscope for this purpose.

A large part of the fundamental facts about the lesions of both caries and periodontoclasia, and the local conditions causing them, can be learned only by study of formalin preserved extracted tooth specimens. For this purpose the dissecting microscope is essential. Correct but quite simple technical methods are necessary. The instructor must have had adequate experience to be qualified to direct the work of students in this regard. In every dental school dissecting microscopes and competent and experienced instructors in their use must be accessible to students at all times when needed. Without them the student cannot learn and know, of his own knowledge, the fundamental facts about the nature and cause of the lesions of these diseases upon which prevention and treatment must be based.

It is also necessary that every student shall have access to the compound microscope and competent direction in using it to study, under higher magnification, material removed under the dissecting microscope from vulnerable and disease areas on and in the tooth specimen. Small particles of material removed by suitable methods may be prepared and examined under high enough magnification to see the composition of the bacterial film ("plaque material") on teeth at the vulnerable locations, and to see the composition of other material removed from locations of special interest on or in the specimen, in relation to lesions, or otherwise.

A good example in which confusion and misinformation are clarified by such microscopic studies is examination of "plaque material." This is supposed to consist largely a mucin, debris, and bacteria. By proper microscopic examination the student sees with his own eyes, and knows that this material is composed entirely of bacteria of different forms (mostly filamentous forms) packed as closely together as they can exist. The supposed mucin and debris were only imaginary.

With the compound microscope the student can see the composition of material removed from the surfaces of teeth in situ or from the surfaces of teeth within the gingival crevices of patients. Such microscopic study enables the student to actually know himself the microscopic elements that are present in the lesions and are related to the pathological process. He does not have to accept the theories and opinions in this regard of others, no matter how authoritative they may seem to be.

Having and understanding the fundamental facts which can be known only in this way, the student will then be prepared to think for himself what measures must be taken to prevent these diseases and to prevent further progress of lesions that already exist. He will come to know, without doubt, the characteristics of the lesions, where and how they originate, and the essential local etiological conditions at these locations, without which these diseases do not occur. He will know that the lesions originate and advance only at unclean locations — that the lesions are always associated with uncleanliness at the particular locations. And he no longer will be confused or uncertain as to what this uncleanliness consists of. Then and only then can he know himself that "a clean tooth does not declay"[1] and that "periodontoclasia does not occur about a clean tooth."[2] Not only will he know that cleanliness at these vulnerable locations is necessary for prevention but he will then be able to visualize and evaluate methods of personal oral hygiene' intended for maintenance of the required cleanliness.

Employing appropriate quite simple technics and methods of research, including use of the essential dissecting microscope and the compound microscope, I have been able to secure accurate information about the disease processes and the essential local etiological conditions in both caries and periodontoclasia. Based upon these fundamental facts I have designed a method of personal oral hygiene which, for all practical purposes, enables any person, at any age, to thenceforth maintain the highest degree of oral cleanliness and dental health. No new caries or periodontoclasia lesions originate and, for the most part, existing lesions do not advance. The practically universal prevalence of these diseases shows that the different methods of personal oral hygiene advocated and followed heretofore do not prevent them. Neither does the treatment and repairs which people receive from dentists prevent them.

In the light of the fundamental facts regarding the nature and cause of these diseases the method of personal oral hygiene which I have described[3-6] is absolutely necessary for their prevention. It is quite different from, and in some particulars quite the opposite of methods generally recommended and followed. In the light of all sound information now known any neglect or deviation from this exact method reduces to the same extent the effectiveness and protection against uncleanliness and disease.

Under these circumstances it is the solemn obligation of dental schools, and especially of those in the schools who are responsible for the soundness of the instruction and training of the students, to seriously consider and investigate this matter and then to provide for the proper instruction and study opportunity in this regard. For students to graduate without knowing, of their knowledge and experience, how the two principal diseases of the teeth are caused, how they can be prevented, and how to maintain the maximum oral cleanliness and dental health in their own mouths, is a reflection upon the school as a whole and especially upon the members of the faculty who are responsible for the deficiency in this regard.

The responsibility resting upon the dental school for the dental health and welfare of the people not only requires (a) that students be given instruction and an opportunity to know what is necessary to prevent the two principal diseases of teeth but (b) that dentists who graduated previously without adequate accurate information in this regard should have an opportunity to return for short course intensive postgraduate instruction to make up this deficiency. Within only a few days small groups of dentists at a time can be shown in the microscope and taught the essential facts and the necessary method of personal oral hygiene. In most instances they will return to their practices, prepared to enthusiastically give to their patients effective prevention and far superior dental health service than they did before.

SUMMARY

Almost all impairment of dental health and welfare results from one or the other, or from both caries and periodontoclasia.

The essential local etiological conditions in each of these diseases consist of uncleanliness at vulnerable locations.

Correct information about these conditions can be learned only by microscopic study.

It is the obligation of dental schools to provide the opportunity, the facilities and competent instruction to enable the student to learn and know the fundamental facts relative to these two diseases, upon which prevention and sound treatment must be based.

It is a reflection for students to graduate without knowing, of their own knowledge and personal experience, how these diseases are caused and how to prevent them.

In addition, the school has an obligation to those who graduated previously without this knowledge, to offer short intensive postgraduate courses to make up the deficiency, in this respect, when they were students.

REFERENCES

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