DENTAL CARIES

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For centuries cavities in teeth were supposed to be caused by worms. Therefore, the program to stop dental decay, was to kill the worm. This was attempted by twisting a stick around in the cavity, or by the use of something like a hot wire, or by medication. Today we have made so much advance that we know that the cause of dental decay is not the worm, but bacteria. We do not use a stick, we use a steel burr. The medication hasn't changed too much. Of course we did not make this advance without expending millions in man hours and money.

About 70 years ago a man by the name of Miller developed a theory that certain acid producing bacteria caused decay of teeth by the process they play in the fermentation of carbohydrates left as debris around the teeth. This essentially is what is taught today in our dental colleges.

Why so little new knowledge about the causes and prevention of dental decay when the need by the public is so great? Dental decay affects 98% of our people. For one thing this subject plays a minor role in the dental curriculum. There is very little interest among the dental profession as a whole about the actual causes of dental decay compared to the great interest in the technical skills involved in the repair and replacement of teeth. The big cause of continued lack of knowledge, however, is that all paths of investigation lead to an invisible barrier, the limits of the field of dentistry.

This is the age of specialization, and through it we have developed much knowledge, which without such specialization would not have been discovered. However, there is one great disadvantage to this specialization: the fact that a man must spend so much time preparing himself for his specialty that his knowledge of even related subjects is meager. Furthermore, these specialists resent the intrusion of others in what they consider to be their field. It isn't what you know; it is, have you the right to know - that counts.

The trouble with dentistry is that those who practice it are dentists, that is, specialists in the field of dentistry whose limitations are the oral cavity. Yet the oral structures are but part of the whole body with the same blood supply as other areas of the body.

While writing an article on the cause of deposits on the teeth, called calculus, which occurs in many mouths, I consulted some literature on the subject. While much was known about the composition of saliva, from which these deposits come, there was no word from American researchers as to what caused the variations in the composition of saliva. I finally found reference in the work of two Australians who had the temerity to go further than the oral cavity in their search for causes. They found that the salivary composition varied as did the blood, but why the blood varied - they did not know.

It is a fact that a dentist is allowed by law to analyze blood, or do anything which results favorably to the oral structures. But because the other professions and most of the public have the opinion that a dentist's work is purely mechanical, there is a psychological barrier which discourages a dentist from doing otherwise.

We have broken through that barrier, and have found the systemic causes of dental decay which, with the local causes, are the real causes of this loss of integrity of dental structures. If the medical and dental professions had worked together on each other's problems as they should, many of our greatest problems would have been solved long ago.

Dentists have known for a long time that dentine varies in hardness in different people. In some it is as hard almost as enamel. In others it is so soft that one can scrape out the dentine with a sharp spoon-shaped instrument. What makes this difference? It is well known that the soft dentine decays easier and the hard dentine is resistant to decay.

If fermentation of debris causes the etching of enamel, then why do the people have no decay who also do not brush their teeth? It is well known that many people who do not

brush their teeth still have no decay. (It is not meant that teeth decay because of tooth brushing, or do not decay because of no brushing). Actually some modern dentrifices do have a great value in lessening dental decay. But even this fact does not lessen the need for eliminating causes of dental decay, for these causes are the same for much other pathology than that found in the mouth.

One may surmise that lessening the incidence of dental decay by other means that elimination of the causes would not be wholly desirable. The reason for this statement I will try to explain.

All of the degenerative diseases are caused by lessened efficiency of body chemistry. These diseases, which really are symptoms of chemical inefficiency, are not only those of dentistry, such as dental caries (the professional word for decay); Periodontoclasia (pyorrhea and gingivitis); temporomandibular syndrome (the word for arthritis of the jaw); but arthritis anywhere in the body; cancer, diabetes, and many other symptoms of degenerative changes, both in the mouth and elsewhere, are due to the same causes.

It just so happens that dental decay is the most prevalent of the degenerative diseases, and when rightly interpreted means that the efficiency of the body chemistry is not as good as it should be; if this efficiency continues to lessen, other and more serious degenerative symptoms are apt to follow. It is not hard to see what an important part the dentist could play in the prevention of the killer diseases if he could learn to prevent dental caries by correcting the causes. This we hope to teach the profession and are so doing.

In 1938 a committee was formed by the American Dental Association. All who were doing any research were invited to explain their theories as to the causes of dental decay. These theories were published in 1939 and 1940 in a book called "Dental Caries".

My contribution was as follows: "Caries results from inadequate nutrition which by unfavorably influencing endocrines (a) affects calcium-phosphorus levels of the blood, these (b) affecting the susceptibility or immunity to caries (c) indicating the efficiency of the related metabolic processes and (d) suggesting treatment necessary for correction of abnormal levels . . ."

This statement continued at greater length, but the point I want to emphasize is that I don't have to change a word of it, today, some 40 years + later.

Nothing was ever done by the dental association to prove or disprove any of the theories published. To do this would require institutional trials with proper controls and some expense.

We think, for the reasons given above, that there is far more involved than dental caries and other dental ills. We think that if it were proved that we can prevent dental caries by removing causes, then it would eventually follow that all of the other degenerative diseases would be conquered. At least, those people who wanted to prevent them, could do so.

Most of you, to whom this article is addressed, know that we can do this. We don't have to search for the answers - we already have them. What is needed is the pooling of the medical and dental profession; something that we have never ceased to strive for.

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