TROPICAL DISEASES AND PUBLIC HEALTH

DENTAL FOCI AND DISEASES RELATED THERETO*

By Thomas P. Hinman, D.D.S.,
Professor Oral Surgery, Atlanta-Southern Dental College,
Atlanta, Ga.

As early as 1884, Dr. W. D. Miller, an American dentist residing in Berlin, called attention in his book, "Micro-Organisms of the Mouth," to the possibility of oral infection's causing systemic derangement. However, he did not follow this line of investigation to a degree where he could definitely associate any particular disease with dental foci. May 18, 1910, Dr. C. J. Grieves, associated as dentist with Dr. W. S. Baer, Orthopedist of Johns Hopkins, reported fourteen cases of arthritis cachexia, gastric and intestinal disturbance which appeared to be strictly of dental origin, as every other possible cause of the disease was eliminated before the dental foci were finally determined as the cause. Dr. Grieves and Dr. Baer reported a complete subsidence of symptoms when the dental foci were eliminated.

Following up these cases to the present time, it has been found that about 60 % have remained well. However, it should be noted that radical removal by extraction, amputation and curettage was not followed in all cases reported at that time. Attention is called to the fact that these cases covered a period of two years previous to 1910.

In the *Lancet*, January, 1911, Sir William Hunter, a surgeon of London, England, denounced the dental profession unsparingly for allowing chronic suppurations to continue untreated in the mouth. He called attention to the fact that such foci in the mouth had causal relation to arthritis, nephritis, endocarditis, etc., as did infected tonsils, or any other chronic suppurations. Many writers in medical and dental literature previous to this period had called attention to the relation of mouth infection to malnutrition, arthritis, etc. Notably of these are Rhein, in 1896; Cave, in 1901; Kirk, in 1898; and Talbot, in 1908. Also Goldwait, Painter and Osgood.

Since the publication of Grieves's paper, in 1910, and Hunter's article, in 1911, there has been a great deal of investigation and research in this particular field; and our literature of today is filled with reports of such research and case records.

Our profession seems to live in eras marked by noticeable attention's being called to some one source of disease, and today we seem to be living in the period of oral sepsis as the cause of all ailments known to the human race. Therefore, I feel that a note of warning should be sounded, for I am sure that many teeth, innocent of the odium placed upon them, are being daily sacrificed on the altar of suspicion. I do not wish to be understood as appealing for the salvation of incurably diseased teeth; but when a functionating tooth has to be extracted, one should be very certain that it is the contributing cause of disease. An impairment of the function of mastication is of serious moment to the patient and no artificial substitute, however well made, can possibly equal the tooth that Nature supplies.

The advent of the x-ray has been of untold value both to medicine ad dentistry in the field of diagnosis. The source of many diseases, obscure in their origin, has been effectively demonstrated by the proper reading of these shadow pictures.

In nearly all cases of an infection of a secondary nature, the condition of the mouth and teeth should be a subject of careful scrutiny by the diagnostician. The dentist, on account of his greater familiarity with this part of the human economy, in health as well as in disease, should be the best judge as to whether the mouth and teeth are the possible source of the infection. Therefore, a comprehensive dental report and x-ray findings

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should be made a part of each case record wherever there is a suspicion that the teeth may be a source of the infection. It is an easy matter for any one fairly skilled in x-ray work to make a good picture of the teeth on a dental film, but it is quite another matter for one to read the true condition as shown in the picture.

In any case of secondary infection, the tonsils should not be overlooked. I have seen cases where all dental foci were eradicated and there was no improvement in the patient's condition. The tonsils then being suspected were examined and found to be diseased, and when they were removed there was noticeable improvement.

It is impossible to determine definitely just which focus is the disturbing element. Therefore all foci should be eradicated wherever found.

There are two general sources of infection in and about the teeth. First, there is the special infection, erroneously called the blind abscess. This apical infection should be denoted as granuloma. Second, there is the infection around and about the necks of the teeth known as pyorrhea alveolaris. Some of the greatest disturbances of a general nature that I have ever seen have come from pyorrhea, as will be shown below. The radiograph is of inestimable value in determining this condition.

Radiographs, when properly used, easily determine whether teeth so affected may be restored to service, or whether extraction is the only means of focal eradication.

Secondary complications of dental origin, classified by Thoma in "Oral Abscesses," are as follows:

1. Involvement of Neighboring Parts.
   1. Maxillary sinusitis.
      Acute maxillary sinusitis.
      Chronic maxillary sinusitis.
   2. Pharyngitis.
   3. Trismus.

2. Ophthalmic Disturbances.
   1. Infectious conjunctivitis.
   2. Suppurating keratitis.
   3. Scleritis.
   4. Cyclitis.
   5. Choroiditis.
   6. Iritis.
   7. Retinitis.
   8. Intraocular optic neuritis.
   9. Retrobulbar optic neureitis.
   10. Glaucoma.

3. Aural Disturbances.
   1. Otitis media.
   2. Otalgia.
   3. Reflex otalgia.

4. Infections of the Lymph System.
   1. Lymphangitis.
   2. Lymphadentis.
   3. Tuberculous lymphadenitis.

5. Diseases of the Alimentary Canal.
   1. Septic gastritis.
   2. Septic enteritis.
   3. Colitis.
   4. Appendicitis.
   5. Proctitis.
   6. Gastric and duodenal ulcers.

6. Infectious Diseases of the Blood.
   1. Septicemia.
   2. Pyemia.
   3. Toxemia.
      Malaise.
   4. Anemia.
      Pernicious anemia.
      Septic anemia.

7. Infectious Diseases of the Heart.
   1. Pericarditis.
   2. Myocarditis.
   3. Endocarditis (valvular and mural).

8. Affections of the Nervous System.
   1. Neuritis.
   2. Neuralgia trifacial.
   3. Chorea.
   4. Mental depression and melancholia.

9. Diseases of the Joints.
   1. Acute arthritis.
   2. Hypertrophic arthritis.
   3. Gouty arthritis.
   4. Infectious and atrophic arthritis.

DISCUSSION

Dr. A. T. McCormack, Bowling Green, Kentucky.—I am glad to say that we all helped as much as we could to get the recognition for the dentists that they deserve in this war. They are doing their part to help win it, and no more generous response has been made than that made by them.

Dr. Charles L. Minor, Asheville, N. C.—The

Doctor spoke of curettage. What procedure is followed as regards drainage?

Dr. William L. Dunn, Asheville, N. C.—I am particularly glad to have an opportunity to hear Dr. Hinman today. It was my good fortune to have had an opportunity to see some of Dr. Hinman's work when he was a guest in our little mountain city. It was a real treat to have him tell me some things and show me some things. So many of us take films with the x-ray and do it improperly. I was rather pleased to find that many of my films were taken properly. I was also particularly glad to have him show me some points in interpretation. I find that we overlook a great many things in interpretation. I think this is a point we must take into consideration if we attempt to use the x-ray for examining these teeth, because if our work in interpretation is faulty we had better let the whole thing alone.

The Doctor very properly has referred to some of these temperature cases supposed to be tuberculosis. The clinical thermometer is an important factor in the diagnosis of tuberculosis, but we must look out or we will run astray. I must say I have been one who may have run astray on that. I treated a patient for four months with the idea that she probably had tuberculosis somewhere; then the removal of three dental foci in a short period cured her. Another patient that has pulmonary tuberculosis still continues his temperature, although the teeth apparently are in excellent condition, and there was nothing about the mouth from my standpoint to indicate that there was anything wrong; but I said, "Let us x-ray this mouth." To my surprise we found several dental foci well marked, and the removal promptly cured the patient of the temperature symptoms. We must not forget that many of these patients that run afternoon temperature may not have tuberculosis, but it may be the result of dental or other foci.

Dr. C. E. Hines, Memphis, Tenn.—I have listened to the splendid paper of Dr. Hinman, and there is a practical lesson in it for every man practicing medicine and for every man practicing dentistry. We have seen how infections around and under the roots of teeth produce systemic troubles of the gravest character, and how these infections go on and on in many cases until the patient is incapacitated for life. Now the question is, in the light of our present knowledge, what are we going to do about it? In the past it has been the habit of physicians to give various drugs, to recommend springs, resorts, and so forth, while the dentist, whenever an opportunity presented itself, continued to add his bit by recklessly removing the pulps of teeth, making insanitary crowns and bridges, and paying no attention to the septic material in the oral cavity. There must be a change in our methods of practice and this can only be brought about by co-operation between physicians and dentists. I frankly admit that in my own practice the best results have been obtained by consultation with the physicians. In fact, I have never yet seen a case where the physician did his part and the dentist did his that the patient was not materially benefited, and many times a complete cure was effected.

It has been said that in many instances these areas of infection are doing no harm. The question that arises in my mind is, how do we know they are harmless? All of us have seen persons apparently in perfect health being taken suddenly ill and dying before anything could be done for them. Is it not entirely possible that these so-called harmless oral infections have a bearing in such cases? To my mind the eradication of one of these apparently harmless areas may be the means of adding many years to the patient's life. In fact, it is like taking out a life insurance policy to get rid of them. I contend that in every operation the dentist performs he must take into consideration not only the patient's present health, but his future health, and in many cases there is no better way to arrive at what is best for the patient than consultation with his physician. I also contend that many conditions hard to eliminate and diagnose in the past could be better handled if the physician would call the dentist in consultation.

"In a multitude of counsellors there is wisdom." Let us get together. We are ready to study pathology, bacteriology, and all the other "ologies" that will aid you in the conservation of human life.

Mrs. Mary B. West, Memphis, Tenn.—I would like to say a word in regard to the dental profession of Memphis and their generosity in paying most careful attention to the delinquent children who go to the special school. Through their help and that of the physicians of the city we have demonstrated quite to their satisfaction that there is a close connection between bad teeth and a bad boy, and Tony, whom the police called the worst boy in Memphis, has not stolen anything since the day he was cured of his bad teeth, the "big toothache," as Tony himself called it.

Dr. Hinman (closing).—In answer to Dr. Minor, I will say that I outlined the treatment for foci in a previous paper that was read yesterday morning in the Section on Medicine. I would say that extraction is not sufficient to remove foci. The assumption that it does has been one of the great mistakes which dentists have made. You can not eradicate foci by simple extraction. You should understand this one feature about granulomata,—that is the infected area is not pyogenic; it is a non-pyogenic organism that infects. There is no pus in these cases. Of course, in curettage you release a certain amount of infection into the system, but releasing into the system a small amount of infection is not the same thing as continuous infection day after day. Rosenow has demonstrated that he can take the infectious material from around the apex of the tooth, and culture, and in a large number of cases grow streptococcus Viridans. By injecting these organisms into a rabbit he has demonstrated, produce lesions on the heart valves. In a series of 120 cases he got some lesions of the kidneys and heart and joints. They were demonstrable and you could see them.

There is one feature I called attention to before the Section on Medicine that I would like to mention today, and that is there is probably a question in your mind, when you know the great prevalence of diseased conditions in the mouth, why it is that every one is not affected?

Ninety per cent. of men and women here have some focal infection; you can depend upon that. You naturally ask, why is it they are not affected? Answer, vital resistance. Any lowering of body resistance may at any time make the patient susceptible.

With reference to Mrs. West's remarks, I was delighted to hear what she had to say. The first experiments on defectives were done in the Marion School in Cleveland, and after cleaning up oral foci, some of the children improved 400 % in their studies, and the vicious children became just as tractable as the others. Every oral focal infection helps to make a vicious child.

I thank you very much for your courtesy and for the opportunity to present this matter to you, and in closing I want to say that what the dental profession ask of you is your co-operation—your co-operatoin in this work. Do not condemn us. We all make mistakes; we are all human, but I believe if the medical profession will give our branch of the profession the co-operation we want and we will give you the co-operation you want, that we can do something for the patients who have suffered from secondary trouble from focal infection and be of untold benefit to the human race.

RURAL TUBERCULOSIS AS A HEALTH PROBLEM*

By Henry Boswell, M.D.,
Superintendent, Mississippi State Tuberculosis Sanatorium,
Magee, Miss.

I am presenting this very unscientific paper not with the thought of bringing anything new to this Association, but with the idea of inducing a discussion that will perhaps make clearer to my mind a missing link existing between laboratory findings, which they say prove that tuberculosis is a childhood infection, and the field work which points to its infectiousness at all ages.

Since the beginning of the fight against tuberculosis, we have been inclined to think of the disease as one of urban districts, and a great part of the work against its eradication, in fact practically all, has been directed accordingly. Along with this, we have been taught that rural districts offer almost the ideal in the way of its prevention, and many workers have been sorely disappointed in visiting the rural districts to find tuberculosis a very common disease.

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I hope that I may not be termed "cranky" in bringing to your attention in this most unscientific manner what is to my mind one of the most serious problems in public health in our State.

I would like to call your attention to a more or less recent definition of tuberculosis, which has been handed down to the school children of the entire country, a definition which to my mind carries more information than any other single sentence relative to it, namely, "Tuberculosis, a house disease." In further consideration of this scarcely more can be said, but we might add that whoever originated this wisely left out entirely the location of the house.

In the literature of tuberculosis, I find a statement by some one as follows: "A house once infected, always so," which seems to me, practically speaking, is quite as true as the school child's definition of the disease. I do not mean, as I am sure that he didn't, that a house can not be freed from the infection, but in every-day life I am sure they are not.

A few years ago, it was my good fortune to begin the intensive community work for the State Board of Health of Mississippi under the auspices of the Hookworm Commission, in which we made a house-to-house survey, collecting data relative to the spread of certain diseases, one of which was tuberculosis, and later following this with two years of careful work as a local all-time health officer. Before working very long, but after having made several hundred of these surveys, I took stock of the incidence of this disease among the families visited and was surprised to find it far more prevalent than I had dared think before. From this I became interested in tracing families, the histories of various homes, and in so doing was greatly astonished at some of the findings. Homes located in some instances almost ideally, so far as natural surroundings were concerned, would be found with a history of tuberculosis extending back in some instances many years, and in two that I recall, thirty and forty years, respectively. Not a family had lived in those houses that did not furnish one or more victims of the infection regardless of their age or history of previous exposure, either in family or by as-