

Tuthill JY. "Mercurial Necrosis Resulting from Amalgam Fillings". AM J DENT SCI, 33(3):97-118 (Jul., 1899).

Mercurial necrosis is a field of pathology which has not received the investigation it deserves by the medical profession. While the poisonous effects of mercury have so long been recognized that I need take no time in rehearsing them, yet there are certain causes affecting the nerve centres which demand more thorough investigation than has yet been given.

In presenting this subject to the Society for consideration I want to show that by the use of amalgam in filling teeth there is a possibility of mercurial poisoning, which seriously affects the nerve-centres, impairs locomotion by heaviness of limb and stiffness of joint, gives rise to obstinate diseases of the skin, and makes a mental wreck of its victim, whose imaginations and hallucinations are more than my pen can describe.

Physical examination reveals nothing to assist the physician in making a diagnosis of his case, as all the functions are usually well performed.

There is, however, nervous depression, irritability, unreasonableness, an inability to overcome and throw off feelings of oppression which settle upon the patient and hold him as in the clutches of despair until his ambition is broken, his energy is gone, his purpose is lost, and he drifts for lack of power to concentrate his actions and assert himself as a force in the world. There are shifting, shooting pains here and there from head to foot, affecting sometimes one part and then another; numbness of hand, foot, or jaw, heaviness of leg, arm, or head, with an almost inability to move them, and a feeling as though one would fall or lose consciousness. Again there is a light, floating sensation as though moving in air. There is mental excitability as well as mental depression; perplexing events cause the highest degree of excitement, ordinary conversation sometimes causes complete confusion, headache, palpitation, intense solicitude, and anxiety, without reason for it. Such are some of the symptoms attending these cases.

To bring this pathological condition more clearly to your thought, allow me to cite a few cases which have come under my observation during the past few years, and you will pardon me for alluding to my own individual case which first opened my eyes to this subject.

During the winter of 1884 and 1885, when working far beyond the limits of good judgment, and averaging from October 15th to April 27th, not more than from four to four and one half hour's sleep per night, I was attacked February 1st with neuralgic and rheumatic pains, usually short in duration, lasting from ten to fifteen minutes to three or four hours, affecting chest, back, arms and legs. My work was arduous, and the professional demands upon my time and strength prevented my getting adequate rest. With failing strength and energy, I continued my daily routine of work until April 27th, when I was in a state of physical and mental collapse. I sought a quiet place for rest, and April 28th went to Saratoga Springs. Arrived there at 3 p.m., and in a half an hour was in bed. I had a good night's rest, and after breakfast the following morning took a stroll through the village, which at this season of the year is the sleepest place of its size that I know of.

Then, thought I would write home news of my safe arrival and a good night's rest. But never was I more surprised than to find that I could not write more than two or three words when my hand would be so numb that I could not hold the pen, until I had rubbed it for some minutes. The same processes were repeated over and over again until I had succeeded in writing a short letter. This condition continued, with some abatement, for many weeks and, in much less degree, for years following. I remained in Saratoga for ten days, sleeping thirteen and fourteen hours in every twenty-four, then returning home and resumed practice feeling much improved.

An eruption which appeared like psoriasis, and which had troubled me for several years, became more troublesome and refused to heal, much to my annoyance and chagrin. All the foregoing conditions continued up to the spring of 1889, when a persistent headache, often of neuralgic character, continued for two or three months was relieved by taking a four months' trip abroad.

Since that time I have had average health, with occasional numbness of hands. The handling of steel would almost paralyze my hands for some minutes to come. The eruption continued the same, resisting all treatment that my own ingenuity could devise or that my professional brethren, who took a kindly interest in my case, suggested.

The numbness attended with pain in the fingers, was thought to be a form of gouty neuritis. Following their advice, I took such remedies as they prescribed, sometimes it seemed for the better, but with no permanent improvement.

In the summer of 1895, spending the month of August on the Shawangunk Mountains, I was applying to the eruption bichlorid of mercury, which accomplished more for healing than anything I had ever used; but while the eruption was fast getting better, my hands were rapidly losing their power and I could not rely on holding anything, nor could I pick up small things like pins, needles, or twine, because of the numbness. At this juncture, it occurred to me that I was absorbing mercury, and that mine was a case of mercurial neuritis or paralysis, the result of this absorption, and that the eruption was a mercurial psoriasis. Returning to the city I laid the matter before several physicians, who thought I was mistaken, as my gums showed no evidence of mercurial poisoning, and on their advice resumed the use of the bichlorid lotion, but was compelled to abandon it in a few days because of numbness which followed. I reported my condition. They then agreed with me that the mercury affected my system in an unusual manner, but thought that I had an idiosyncrasy, and that it would probably not affect more than one in a thousand under the same circumstances.

Being thoroughly aroused as to my state, and having several amalgam fillings in my teeth, I soon came to believe that my entire condition, the numbness, the rheumatic pains, and the eruptions were all due to the action of mercury absorbed from those fillings. So I decided to have them removed, and the work was done in May, 1896. In two weeks I felt like another man; it seemed as though a great weight had been lifted, and I was once more free from an oppression which had hung over me like one long nightmare for years, handicapping, restricting, and restraining me on every hand.

My improvement has continued from that time to the present, the numbness growing less and less, the eruption disappearing until there is less of it than at any time in fifteen years.

I do not imagine that all the mercury that I absorbed from those fillings which I carried for thirty-eight years is out of my system; but from my general improvement, believe it is growing less all the time, and I am feeling better now than at any time since the spring of 1885. Having lived for eleven years on the ragged edge of hope and despair, and thus secured my freedom from a bondage worse than human slavery, I could appreciate the sufferings of others when rehearsed experiences which I had realized. As a natural consequence, I readily recognized the same enemy to their peace and happiness which had shattered my own.

In December, 1896, I was called to see Miss F., aged thirty-three years, who had been in excellent health previous to an attack of la grippe in December, 1892. Since then her nervous system had been much disturbed, and she had come to be melancholic and to withdraw herself from her family and friends, seeking the seclusion of her room -- refusing to go out or to associate with others, or even with the members of her own household. When I was called, she had been treated by five different physicians with no improvement. I treated her for indigestion, torpid liver, constipation, etc., for ten weeks, with no improvement in her mental condition. Then numbness of hands and stiffness of jaws led me to examine her teeth, when I found five amalgam fillings which I believed had produced a mercurial neurosis. I gave it as my opinion that her condition was due to the effect of mercury upon her nervous system absorbed from those fillings and advised their removal. She was stubborn and for some time refused, but yielded in May, 1897, and had the work done. She has steadily improved since that time, and her family say that she has not been so well in five years as now.

Case 2. In the early part of last September, Miss E., aged eighteen, was brought home from a three-months sojourn in the country, with all the indications of typhoid fever. Intestinal antiseptics, tonics, etc., arrested the progress of the case, but an unaccountable languor,

debility, loss and flabbiness of flesh with drowsiness, continued for several weeks, she sleeping eighteen and twenty hours out of twenty-four. My case otherwise appearing well, her sluggish gait, heaviness of limbs, and stiffness of jaws, led me to examine her teeth, in which I found nine amalgam fillings.

Being convinced that these were retarding her recovery, I advised their removal and the substitution of gold. When the fillings were taken out she became more wakeful and animated, and has continued to improve although still suffering from the effects of the absorbed mercury.

Case 3. Miss K., a young lady of culture and refinement, was brought to my office December 1st, 1887, suffering from extreme nervousness, which had continued for three years. She was restless and could not apply herself for any length of time to any one thing, sleepless, irritable, hysterical, etc.

Having made a thorough examination of her case and being assured that all of her functions were normal, I examined her teeth and found sixteen amalgam fillings, several of them in teeth containing gold fillings. Believing this to be a case of mercurial neurosis I told her, and her mother who accompanied her, that the case put me in mind of what I had read in "Ziemssen's Cyclopaedia" a day or two previous on mercurial poisoning, and I read to them, viz.: "Essentially the condition is characterized by great mental excitability of the patient to external impressions. Every unexpected or perplexing event excites him in the highest degree. The visit and the conversation of the physician put him into a state of complete bewilderment, even to syncope; the adult patient grows pale and stammers in answering the simplest questions. To perform his allotted task requires the greatest effort, or is even impossible if he sees or thinks he is being watched.

There is also great solicitude and a feeling of anxiety without any reason for it. There is sleeplessness, or sleep which is restless, frequently broken and disturbed by frightful dreams, headache, and palpitation. In the severer forms there are frequently hallucinations, usually of a frightful nature. When perplexed or excited, traces of tremor are often perceptible in a slight twitching of the muscles of the face at the corners of the mouth".

Having heard this, she remarked that it was a perfect description of her case in every particular, except that she had not had the hallucinations there mentioned. Following my advice the fillings were removed and the young lady has improved very rapidly to the present time, all her nervous feelings having disappeared. Indeed, her mother tells me that she manifested none of her nervous troubles since the removal of the fillings.

Case 4. In February, 1897, was called to see Mrs. N., who was extremely nervous, with neuralgic pains in the chest and palpitation of the heart.

Upon looking up she felt as though she were falling backward. Had heaviness of limbs, loss of memory, and found it difficult to think and harder still to put her thoughts into words.

Numbness of hand or foot, a sensation of floating, and a feeling that she would die, were common experiences. I did not see her many times before I examined her teeth, and found one large amalgam filling in a lower molar, which I advised her to have removed, but doubting its necessity she kept it until November. Here I wish to read a letter sent me several weeks ago:

DEAR DR. TUTHILL:

"I wonder if there is another woman in this world who has had all the peculiar feeling that I have had within the past two years? You know that I am one of the healthiest-looking mortals, have good appetite, sleep fairly well, etc., yet for all this time I have suffered from such awful feelings.

I was afraid to go out alone, or be alone, and in constant fear that something dreadful was about to happen. I suffered much from palpitation.

Sometimes, when sitting in a street-car, the people would suddenly begin to look queer, the car crooked, and I would look around at each one to see if any one realized the dreadful condition of things. I had also light, floating sensations, and at times it was hard to talk, to think, and speak in sentences. When lifting my eyes upward I felt as though I were falling backward. Then my limbs were so heavy, my memory seemed to be gone, and I often felt dazed. Even when conversing with friends, or sitting at the dining-table, such a horrible feeling would suddenly seize me and I thought that in a moment I might fall down dead.

I became hot and cold and sick, and would have to rise and walk about till it passed over. The feeling that I was just about to die often came to me with sensations that I cannot describe, but such as I should imagine a person dying would have. It began at my feet, a numb, cold creeping feeling, and seemed to be hardening all over. Two or three of these spells I would have in a day, lasting from ten minutes to half an hour.

"You told me last spring that if I would have an amalgam filling in one of my teeth removed, a large part and perhaps all of these nervous troubles would disappear. But it seemed too absurd to me that I hardly gave it a thought till you urged it again this fall. While my husband was in one of the Western cities he happened to be in a large Dental Association and asked the president if he had ever heard of amalgam fillings causing nervous troubles. He replied, 'Yes we have. It is not common, but some people are poisoned by the mercury, as I can prove', and then cited the case of a man in that city who was a nervous wreck, given up by several physicians. At last one doctor said he believed him to be suffering from mercurial poisoning, and, upon examination, found seven amalgam fillings in his teeth. They were removed and from that day the man began to improve, and is a strong, well man to-day, scarcely knowing what a nerve is.

"So my husband wrote to me to take your advice and have the filling removed. I did so about two months ago. Immediately I felt better and coming home felt as though I could have walked to Beersheba and not have fallen. My buoyant feelings have not lasted, however, and some days I am almost discouraged. But I know that I am better. I have not had one of those awful dying sensations, nor do I have nearly so much of my nervous troubles. I can go downtown and to New York and do many things that I could not do before I had the amalgam filling out. Still I do have days of some of the old feelings and fears, but they pass away more quickly. I am living in hopes that it will be as you said, 'They will all be gone to stay away, in time'. But as the filling was in two and a half years, I could not expect to be cured in two months.

"Oh, Doctor, how I wish I had taken your advice last spring and saved myself the sufferings of the summer and fall! I wish I had never had it put in my mouth. No dentist would put in another for any amount of money. I want to thank you with all my heart for insisting upon my having that filling removed and bringing brightness again into my life. Days when I feel well I am the happiest woman living. I only long to feel entirely well, and trust as the poison passes off that I shall.

"Very gratefully yours,

Mrs. N."

Case 5. In July last I was called to see Mrs. H., aged twenty-six, who was in a very excitable condition, afraid to go out alone in the street or stores lest she become unconscious and be taken to some hospital. Upon looking up she felt as though she were falling backward; when looking down, as though falling forward; when standing still, as though she were going to pieces; when lying in bed, as though floating toward the side wall; when sitting in a chair she often felt as though she were dead all over, and that it would require the greatest effort to make any movement. Her troubles began in the fall of 1895, with pains in the back of her neck and about the lumbar regions followed by pains in her left thigh and arm, which would last from a minute to one or two hours and then pass off to reappear there or elsewhere at irregular intervals. In the spring of 1896 she complained of stiffness of the jaws, of her left hand and foot going to sleep, with continued numbness of the third finger of the left hand. The left side of her head and the left ear would often become numb. The large toe on the right foot would be numb for weeks at a time. She also complained of her limbs being heavy, like lead, and at times it was difficult for her to raise them. There was loss of memory, the eyes looked dull and heavy, the skin had a dingy look which washing did not improve. Feelings of dread and fear lest some calamity might befall her, made her afraid to stay in or go out alone, which she had ceased to do for more than a year. I treated this lady for several weeks without making any progress on the case. Then I examined her teeth and found nine amalgam fillings, which I believed had more to do with her condition than anything else. I therefore advised the removal of the fillings and that they be replaced with gold or bone. The work was

done. In less than a week she began to improve; in three weeks you would hardly have believed her to be the same woman. All her symptoms have abated; the numbness, the heaviness of limbs, the constant fear, the falling tendencies, the stiffness of jaws, have disappeared, and she goes out alone. There is a buoyancy and vivacity in her manner which shows that her hopes and anticipations are bright. Her skin looks clear and healthy, her eyes sparkle with expression, while her memory is true to her as in former days. Since the removal of the amalgam she has gained twenty pounds in weight. I might say in passing that nine physicians had treated this case before it came to me.

I might describe several other cases, in one of which the fillings were in between twenty-five and thirty years, and the toxic effects manifest for a dozen years; but those already given are a sufficient illustration.

Members of the dental profession who are so freely using amalgam tell us that over the surface of each filling there is an oxidation which prevents any possible absorption of the mercury. Fillings which have been removed are bright, where in contact with the cavity, indicating that this oxidation occurs only to the exposed surface and not to that which comes in contact with the structural parts of the teeth. The circulation in the teeth is continually in contact with the unoxidized surfaces of the amalgam and is constantly receiving some mercurial taint which is carried throughout the system. As the nerve-centres are most impressionable to its toxic effects, we find neurasthenic conditions chiefly resulting.

It is not my purpose at this time to indulge in theories as to how these results follow the use of amalgam, but to merely state the facts. While many having these fillings seem to be exempt, others suffer from the subtle effects of the mercury. This is clearly proven by the cases I have cited, which have come to my knowledge during the last two years. So long as the system keeps in vigorous condition many feel no ill effects of the poison, but when from any cause it falls below par, either from over-tax or from disease, the toxic effect of the mercury becomes dominant, with those susceptible to it, and gets the mastery of the nervous system, to be followed in many cases by the train of symptoms mentioned above.

Although the number of cases may be comparatively few, they deserve as thoughtful consideration as would be given the subject if mercurial neurosis were more common. I doubt not that our insane asylums have many an inmate of a mental state developed by amalgam fillings, which produces excitation or sluggishness of brain, impairs thought, destroys memory, blunts perception, and relegates to despair what otherwise might be a bright and brilliant career.

To insist upon a patient's enduring the agony, torture, and expense of having these fillings changed for gold, requires considerable nerve, with positive assurance of a correct diagnosis, for in case no improvement should follow the physician would be a subject for wholesale condemnation, and branded as a crank. Fortunately for the writer, in no instance has he advised the removal of these fillings where a marked improvement has not followed in a few days. It would be unreasonable to expect the relief to be complete and immediate, for the removal of the fillings does not remove the mercury which has been gradually absorbed into the system during months and years of contact with the amalgam, and which has seriously affected the nerve-centres. But it does stop the supply, and when that is cut off there is an abatement of all the more prominent symptoms, followed by a marvellous improvement, and the patient realizes that he is living under new conditions, with hopes and aspirations he has not known for long months and perhaps for years past.

For the conscientious physician too obscure and unsuspected causes of disease have a peculiar interest, and he will not allow prejudice to prevent a careful investigation of the facts which may reveal such causes.

If this paper shall but stimulate some present to a more earnest study of this subject it will have fulfilled its mission and put into motion a train of thought which must eventually secure to many a now hopeless sufferer a relief so great as to be almost the beginning of a new life.