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The Bio-Probe Newsletter is published eight times annually
Editorial office located at 4401 Real Ct., Orlando, FL 32808
Subscription price $95.00 per year. Postage paid at Orlando
Postmaster: Send address changes to above address
MERCURY HYPERSENSITIVITY/ALLERGY OR TOXICITY?

PART II

In part I of our series we presented data indicating the migration of mercury, in ionized and vapor form, from amalgam fillings into the dentin, and surrounding oral tissues and into the lungs and gastrointestinal tract. We also cited studies showing the degree of sensitivity or allergy to mercury far exceeded the ADA position of less than 1%.

There was one study cited in part I that I wish to mention again because of one conclusion. Nakayama et al. (1983) felt that mercury exanthem was a SYSTEMIC contact dermatitis that can occur repeatedly in sensitized individuals through the inhalation of mercury vapor.

Dorland's Illustrated Medical Dictionary defines the terminology used in the foregoing statement: Systemic = "pertaining to or affecting the body as a whole"; Contact dermatitis = "1. An acute allergic inflammation of the skin caused by contact with various substances of a chemical, animal, or vegetable nature to which delayed hypersensitivity has been acquired; when severe it is called dermatitis venenata. 2. Primary-irritant (non-allergic) dermatitis." Delayed hypersensitivity is defined as "a slowly developing increase in cell-mediated immune response to a specific antigen; it is involved in the graft rejection phenomenon, autoimmune disease, and contact dermatitis, as well as in antimicrobial immunity."; Delayed Allergy is defined as "an allergic response which appears hours or days after application or absorption of an allergen; it includes contact dermatitis and bacterial allergy."

If I understand the statement of Nakayama et al. and the definitions outlined above we now have a medical condition manifested as a contact dermatitis WHERE THERE HAS BEEN NO OVERT CONTACT. We are talking about a systemic, whole body reaction in a person previously sensitized to mercury, where there is only a skin manifestation of this sensitization in the form of a diffuse symmetrical erythema with occasional red papules, that is precipitated by inhaling mercury vapor. So regardless of whether the individual originally became sensitized from environmental sources, mercury in the food chain, use of mercury containing pharmaceuticals, or from dental amalgam, it now appears that the allergic reaction could be triggered by inhaling mercury vapor escaping from amalgam fillings during installation, removal, and/or function.

Unfortunately, Dr. Nakayama did not indicate whether vital signs were recorded during their research. So, although we have a finding of systemic contact dermatitis, we do not know if there were also other systemic changes in blood pressure, pulse rate, and temperature concurrent with the skin manifestations.

My reason for stressing the implications of Dr. Nakayama's findings relate to another article recently published in the October 1984 issue of the California Dental Association Journal. The article by Robert L. Cooley, DMD, MS; and John M. Young, DDS, MSc. reflected
their presentation to the Workshop on the Biocompatibility of Metals in Dentistry, July 11-13, 1984. The article titled "Detection and diagnosis of bioincompatibility of mercury" makes the following special point: "A new concept of hypersensitivity, or nontraditional approach, has been proposed by the anti-mercury group (proponents of amalgam removal). This new concept (or redefinition) is also called hypersensitivity, but is said to be different from an allergic response. This definition of hypersensitivity has been expanded to include changes in blood pressure, pulse rate, body temperature, and peripheral white blood cell count."

"According to this nontraditional view, changes in these parameters indicate hypersensitivity. It should be noted that this nontraditional approach also incorporates the traditional view of hypersensitivity, in which contact stomatitis or contact dermatitis indicates hypersensitivity."

Dr's. Cooley and Young have produced an excellent review of a great many of the factors involved in the very complex problem of determining patient hypersensitivity to mercury/amalgam. However, I for one would have much preferred to have them forego the labels of "a new concept of hypersensitivity; a nontraditional approach; and a redefinition" and instead, researched the protocol in a positive light.

For example, Dr. Arthur F. Coca, one of the pioneering immunologists, developed the pulse test to assist in identifying foods an individual may be allergic to. An increase of 18 or more beats per minute, 40 minutes after eating a particular food, is a fairly reliable indicator that you are sensitive to the food that was eaten. He developed the pulse test because of the inaccuracies in skin tests. I feel certain that is the same reason Dr. Hal Huggins included pulse variations when he was developing the "new concept" protocol.

In the above context, I would also like to quote from a chapter written by Dr. William H. Philpott in: A Physician's Handbook on Orthomolecular Medicine (1977). "With increasing insistence, allergists are telling us they have much to offer the practice of medicine in general and the central nervous system reactions in particular. They also tell us the field of allergy is larger than the immunologists have cut out for it. There are many maladaptive, allergic-like reactions not manifesting antibody formation and, therefore, not fitting the immunologists' definition of allergy. Clinical ecology is a more inclusive term and would include all maladaptive reactions occurring on exposure to a substance, whether this be (a) allergic with antibody formation, (b) idiosyncratic-toxic in which small amounts of toxins not affecting the majority produce toxic reactions in these susceptible persons and (c) deficiency-type reactions which include nutritional deficiencies and metabolic errors."

In Chapter 24 of the same book Dr. Philpott goes on to state: "It has long been recognized that reagins do occur in the central nervous system, however their frequency and importance have not been considered great. There are several reasons for this state of affairs
such as: 1) Allergists rely on evidence from reactions from skin testing, and skin testing reveals no cause and effect relationship to central nervous system reactions. 2) Allergists are not taught usually to systematically observe central nervous system reactions by a convincing symptom induction method. 3) Psychiatrists and neurologists are not taught to place reagin type reactions in their differential diagnosis and are not taught methods of testing for allergic central nervous system reactions.

There is good evidence that the majority of central nervous system maladaptive reactions to foods, chemicals, and inhalants are nonreaginic in origin." (Dorland's defines reagin as: "I. antibody of a specialized immunoglobulin class (IgE) which attaches to tissue cells of the same species from which it is derived, and which interacts with its antigen to induce the release of histamine and other vasoactive amines. A form of cytotropic antibody, it is present in the serum of naturally hypersensitive individuals and can confer specific immediate hypersensitivity in nonreactive individuals").

The science of immunology is progressing at a phenomenal rate. More knowledge has been gained in the past 30 years than the sum of all previous knowledge. Cross reactivity, pre-sensitization, systemic and/or toxic reactions have to all be considered and explored without preconceived conclusions when we talk about hypersensitivity to mercury escaping from dental amalgams. The bodies vulnerability to the various forms of mercury make it imperative that we keep an open mind when attempting to determine or establish clinical protocols for determining hypersensitivity or potential toxicity.

J.A. Hayes writing in A Guide to General Toxicology brings out the following points concerning metabolism: "Toxic agents may have a variety of deleterious effects on body metabolism. Firstly, there may be a generalized nonspecific effect in which the agent will block vital activities, potentially, in every cell in the body. This will occur typically when energy-related processes, e.g. electron transport chain, are interrupted. Heavy metal poisoning by Hg, Pb and Cd are good examples of this action, while the cyanide ion will specifically inactivate cytochrome A with the same overall effect."

In Chapter 13 of the same book Dr. Hayes states: "Although the precise toxic action for each metal is different, toxicity usually results from metal binding to metabolically active groups. Most of these occur in amino acids, polypeptides and proteins, and usually involve the free amino or carboxyl sites. Thiol groups are particularly important because they are binding sites on enzymes, crucial to energy provision or to oxygen transport in cells. Toxic effects mediated through thiol groups can, therefore, affect every cell in the body. Typically, metals bind by displacing hydrogen atoms from the involved groups. The thiol groups in cysteine and imidazole group in histidine appear to be the most active of all binding sites for metals."

"Zn, Cd and Hg form strong covalent bonds resulting in stable chelates. This particularly affects the thiol groups, which are such a frequent active component of the structure of enzymes and so act as
a major focus for the toxic action of metals. The relative affinity for thiol bonds is Hg > Cd > Zn. Zn is least toxic because it is an essential trace element for which the body has homeostatic control. There is no homeostatic control for Hg or Cd, the former being more toxic because of its greater electropositivity, solubility, absorbability and tissue penetration. Both have a cumulative effect which is eventually toxic."

Hg binds with a variety of terminal groups and has a particularly high affinity for thiol groups and progressively less for other groups in the following sequence: SH > CONH₂ > NH₂ > COOH > PO₄. In particular, glucose-6-phosphatase, alkaline phosphatase, adenosine triphosphatase, succinic dehydrogenase and α-amino-levulinic acid dehydratase are inactivated. This leads to blocking of active glucose transport into cells and to altered membrane permeability."

To keep the need to have an open mind in perspective, let's not forget that it was less than six months ago that the "establishment" position was "we have been using amalgam for 150 years without any serious problems;" and "once installed in the tooth the mercury is locked in and cannot escape;" or "when mercury is combined with the metals used in dental amalgam its toxic properties are made harmless;" or "measurement of mercury content of the urine is a reliable indicator of whether an individual will suffer any biological effects from exposure to mercury."

In July 1984 at the conclusion of the Workshop on the Biocompatibility of Metals in Dentistry, the ADA admitted that mercury vapor does escape from amalgam fillings and that mercury blood and urine levels have no correlation to the toxicity of mercury.

Their new position is that although mercury does escape from the amalgam filling the quantity is so small that there is no way it could cause any damage or harm. The ADA is also locked into their position that less than 1% of the individuals with amalgam fillings may be hypersensitive. I think the findings of Dr. Nakayama and the statements by Dr. Philpott and Dr. Hayes quoted above should be kept in mind and additional research investigating systemic reactions from inhalation of mercury vapor should be a matter of priority accomplishment. Who knows, they might discover that the new concept of hypersensitivity proposed by the anti-mercury group is really not that new or unorthodox after all, but rather a sound medical hypothesis that should be easily proven by laboratory and clinical research.

There are two recent articles dealing with hypersensitivity and the role of dental restorative materials in the pathogenesis of oral lichen planus that you should be aware of. One is especially significant because the authors are having difficulty with their findings because they are still using Frykholm as the authority that mercury only escapes from amalgam during insertion or removal.

"67 patients with oral lichen planus of the atrophic-erosive or reticular plaque type were examined. Dental amalgam in contact with mucosal lesions was present in 64 patients, and gold fillings in 33. Patch testing with a standard procedure was performed with components of dental fillings. 11 patients (16%) reacted to at least one of the mercury compounds compared to 8% in a reference group. Most positive
reactions were caused by elemental mercury and ammoniated mercury. No patient reacted to gold or copper. Readings at days 10-14 did not increase the number of responders. 13 patients were patch tested with palladium; all were negative. It is not clear whether in the mercury-positive patients allergy to dental amalgam is a causative or aggravating factor, or merely an epiphenomenon."

"The clinical significance of the reactivity to mercury is not clear. It could reflect a relevant sensitivity or a past episode of a non-related dermatitis or mucositis. However, case history does not support the latter explanation. Mercury mainly contaminates the oral milieu when the fillings are inserted or removed (Frykholm). A slow and very small release of mercury to surrounding mucosa may also occur. If the mucosal lesions of lichen planus are caused by allergy to mercury, then the removal of such dental fillings will probably result in their resolution. Preliminary results from Finne et al, in 4 patients are in accordance with this hypothesis; on the other hand, they found an incidence of contact allergy to mercury of 62%, which is very different from our findings of 16%. We are at present evaluating the results of amalgam elimination in patients with and without allergy to mercury." (Mobacken et al. Oral lichen planus: hypersensitivity to dental restoration material. Contact Dermatitis, 10:11-15, 1984)

Eversole et al. using 24 patients with oral lichen planus and 12 control subjects without oral mucosal disease, patch tested them all using dental restorative metals and selected metallic salts. 21% of the lichen planus population exhibited a positive skin response to one or more challenge materials, as compared to 8% of the control group. The author's could not however, substantiate a cause-and-effect relationship. (Oral Surg, 57:383-387, 1984).

REFERENCES

REVIEW/ABSTRACTS

This first abstract is extremely important and was provided to Bio-Probe by Dr. Mats Hanson. The Erlangen study referred to in this abstract was abstracted in Issue # 3 of the Bio-Probe Newsletter.

Studies on autopsy material (dead by accident) by Magnus Nylander at the department of Hygiene (led by Professor Lars Friberg) at the Karolinska Institute, Stockholm, has shown that the brain content of Hg is related to the number of amalgam fillings. The brain samples were analyzed for both methyl Hg and inorganic Hg. People without amalgam have a low level of methyl Hg and a small fraction of inorganic Hg. People with amalgam fillings have the same amount of methyl Hg and a many times higher level of inorganic Hg. The values were higher than those reported from Erlangen, Germany, but otherwise consistent with the results from that study. The separation into organic and inorganic Hg shows that the major part of brain Hg, for those having amalgam fillings, is not derived from food but from the fillings. (Preliminary results were presented by M. Nylander at the annual medical conference, Stockholm, Nov 1984).


Ag⁺ produced two different types of transient tension development in single frog toe muscle fibers in which the Ca²⁺ channel had been blocked by pretreatment with 2 mm Co²⁺. These contractions were never observed in denubulated fibers, indicating that the Ag⁺-induced contraction is produced through Ca²⁺ channels located on the T-tubular membrane. (Oba T. and Hgṭta K. Transient tension development induced by Silver ion in Ca²⁺-channel blocked skeletal muscle fibers. Japanese Journal of Physiology, 34:187-191, 1984).

In an attempt to elucidate the mechanism of initiation of peroxidation in HgCl₂-treated erythrocytes, the effect of HgCl₂ on methemoglobin-catalyzed lipid peroxidation was studied. It was found that HgCl₂ reinforces the prooxidant action of methemoglobin. This effect seems not to be due to dissociation or degradation of the hemoglobin molecule to heme-containing fragments or iron-containing products of low molecular weight. The results obtained indicate that Hg²⁺ increases the binding of oxy- and methemoglobin to liposomes. A suggestion is made that the acceleration of methemoglobin-catalyzed peroxidation by HgCl₂ is mainly due to increased binding of methemoglobin to liposomes. On the basis of these results and the results obtained previously the possible mechanism of initiation of peroxidation in Hg²⁺-treated erythrocytes is discussed. (Ribarov S.R. et al. HgCl₂ increases the methemoglobin prooxidant activity. Possible
Administration of methylmercury to pregnant rats resulted in major alterations in synaptic dynamics of brain dopamine systems in the offspring which were predominant even at doses of the organomercurial which did not produce acute toxicity, fetal or neonatal death, low birth weight or reduced litter sizes. The abnormalities were typified by shortfalls in both the levels and turnover rate of the transmitter in vivo, accompanied by elevations in synaptic uptake as assessed in synaptosomal preparations in vitro. These effects were not apparent in the immediate postnatal period but instead showed a delayed onset beginning at about the time of weaning. Methylmercury exposure displayed selectivity in that central noradrenergic systems showed only the synaptic uptake alterations without changes in transmitter levels or turnover; targeted interactions were also apparent in peripheral sympathetic pathways to the heart and kidney. The threshold dose required to elicit damage to biochemical development of neurotransmitter systems was the same as that to alter more generalized cellular development, as assessed through measurements of brain ornithine decarboxylase activity. These studies indicate that neurochemical damage produced by prenatal exposure of the developing organism to methylmercury involves transmitter-selective alterations in synaptic dynamics and function which may contribute to adverse behavioral outcomes; the underlying mechanisms, however, do not necessarily reflect actions of the organomercurial which are primary or specific to these particular neuronal tissues. (Seidler F.J. and Slotkin T.A. Exposure to methylmercury in utero: Effects on biochemical development of catecholamine neurotransmitter systems. Life Sciences, 35:657-670, 1984).

EDITORIAL

YOU CAN'T TELL THE PLAYERS WITHOUT A LABEL

In their article published in the October 1984 CDAJ Dr's. Cooley and Young join that select group of establishment spokespeople who find it necessary to label (for clear identification so there can be no mistake in knowing who they are) those individuals that hold opinions or philosophies contrary to establishment positions.

We can now add "The anti-mercury group (proponents of amalgam removal)"; "New concept of hypersensitivity"; "nontraditional approach"; and "redefinition of hypersensitivity", to the descriptive words and phrases so readily employed by the "good guys". They can take their place alongside such classics as voodoo dentistry; make busy work; lack of busyness; irresponsible dentistry; etc. etc.

Well I for one would like to set the record straight by adding my own new label complete with appropriate terminology:
My newest term is "CLOSET COMPOSITE USER OR CCU". CCU is defined as those practicing dentists who meet the following criteria:

1. Afraid to take a position contrary to their Societies or Associations.
2. Dislikes the necessity of making an independent informed judgement on controversial issues.
3. Truly believes that mercury really is a poison.
4. Believes that amalgam may really be harmful to his patients, but is afraid to convert to a mercury-free practice.
5. Wonders how you can pick out that less than 1% of amalgam filling owner's who are hypersensitive.
6. Thinks that patients with "amalgam tattoos" really shouldn't worry so much. After all its only a problem of esthetics.
7. Never wonders whether there is an amalgam filling under that gold crown. Think's that it is absolutely OK to put an amalgam filling next to a gold crown.
8. Afraid to buy books or attend seminars that question the use of amalgam as the material of choice. Operates on the principle of what I don't know can't hurt me, especially if it hasn't been published in JADA.
9. Buys composite material just to have in the office in case a patient insists on having it.
10. In response to a patient question concerning the harmlessness of amalgam, must be able to look the patient in the eye and say "The dental profession has been using amalgam for 150 years now and I haven't seen any problems with it."

The qualifications go on and on.

You will be delighted to know that it certainly looks like the CCU's must have a large percentage of patient's who are insisting that a composite filling material be used instead of amalgam. I suppose one could even go as far as to say that it now looks like about 50% of the ADA membership are now fully qualified CLOSET COMPOSITE USERS.

At least I believe the foregoing statement to be true unless I am evaluating the data presented by Dr. Karl Leinfelder on page 893 in the December issue of JADA incorrectly. His article states: "From 1981 to 1983, amalgam moved from having 72% of the market to having 49%; composites moved from 28% to 51%. I expect this trend will continue in 1984." If my comprehension is OK then I would have to assume, that if we extrapolate that data, the year 1984 should have seen the ranks of the CCU's expand by at least another 10%. Do you think it possible that by chance we may have stumbled on to the top secret ADA position on continued use of amalgam???? Let it die by attrition!!!!!!!

One last point regarding Dr. Cooley and Dr. Young's definition of the anti-mercury group as "proponents of amalgam removal". I do wish they would be more accurate. The correct definition of the individuals involved would be anti-amalgam proponents (advocating a moratorium on further use of amalgam as a dental filling material until such time as original primary scientific data is produced attesting to its harmlessness). The group definition would appropriately be "mercury-free". Unlike the Closet Composite Users Group, the Mercury-Free group are
not afraid to stand up and be counted and all are proud of the fact that they operate a mercury-free practice to the benefit of not only their patients but perhaps more importantly, they have eliminated for themselves and their staffs, that potential of needless overexposure to an insidious toxic electrochemical substance called amalgam.

TECHNIQUE TIPS

Our thanks to Duane E. Christian, D.M.D. of Carson City, Nevada for the following bonding technique using Den Mat Composites:

1. Thorough caries removal and cavity prep according to Doctor's technique. Certainly much more conservative removal of tooth structures as advocated for traditional retention is not needed.
2. Place CaOH in areas threatening pulp.
3. Cavity is bathed for 30 seconds with cavity cleaner in preparation for dentin bonding.
4. Cleanser is washed out with copious amounts of water.
5. Drybond is applied with brush or cotton pellet and evaporated with conservative air volume.
6. Creationbond is applied with brush or cotton pellet. After 30 seconds it is dried with air syringe at about 4 to 6 inches.
7. Visarseal is applied with a brush, blown to even thin covering with air and cured with light.
8. If there is any concern about light reaching all areas of cavity use Unibond which is a chemical cure unfilled resin liner. This then has protected dentin from etchant used on enamel - as well as providing bonding to dentin - not achieved with other techniques of covering dentin with CaOH or methyl cellulose line to protect from etchant.
9. Using 12 fluted finishing burr go around cavo-surface margin to place a bevel on enamel as well as clean off any resin from enamel so it can be etched.
10. Apply etchant to exposed enamel for 60 seconds. Place Matrixbond and wedge while waiting.
11. Wash off etchant for 45 seconds with copious amounts of water.
13. Apply Creationbond - let sit 30 seconds and gently dry.
14. Apply Visarseal or Unibond as indicated.
15. Apply Ultrabond (in anterior s) or Class II or Marathon in posteriors. In all but very shallow Class I cavities the Infinite Cure Paste should be added to the Marathon to assure total polymerization. The Skube is excellent to accomplish thorough marginal adaptation of first layer of material placed in cavity.

The pH of Creationbond is 6.8
The pH of Scotchbond is 3.4
Since using this method of protecting dentin during the enamel etching, I have reduced my post-placement sensitivity by at least 75% (estimate).

The following posterior composites have been found to be biocompatible by Dermatron testing by various dentists using EAV. They
do not all agree: 
P-10 P-30 Sinterfil Fulfil 
Heliomolar CII Marathon

As a postscript, Dr. Christian speculates that perhaps the above technic could be used with any material that does not depend upon the smear layer being present as does Scotchbond and P-10 and P-30.

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This next tip comes from Dr. Michael Ziff. Those of us who are operating a mercury-free practice can be subjected to excessive amounts of mercury vapor during amalgam removal if we are not extremely careful about the safety procedures and techniques used. I have routinely used the 3M mercury mask and rubber gloves during amalgam removal and assumed that those procedures coupled with the technic used was adequate protection.

Unfortunately, I discovered the hard way, through recurring headaches of unknown origin, that I was overlooking additional ways of mercury contamination. Not particularly liking to work with surgical gloves on, I removed them as soon as the actual amalgam removal procedure was finished. Therein lies the culprit. The handpiece, drill bit, mirror, and explorer were all loaded with mercury. So as soon as I removed my gloves, I was exposing myself to direct skin absorption every time I picked up the handpiece and mirror, changed bits, moved the light, etc.

I recommend that flowers of sulfur powder be utilized to decontaminate the handpiece, water syringe and evacuator used by the assistants, and some of the other equipment. Sulfur should also be used on the instruments prior to autoclaving. For the patient I also recommend that moist gauze patches be placed over their eyes during the actual amalgam removal procedure, that they breathe oxygen through the nitrous nose piece during removal, that a suitable paper bib in place during removal, is replaced as soon as the removal procedure is over. I am also exploring the use of throw away paper garments for myself and assistant during actual removal, which would then be disposed of as soon as removal is completed. This whole area requires specialized safety research to establish the proper protocols to be used for staff and patient. Will keep you posted in future issues.

MATERIALS

The January 2, 1984 edition of the ADA News contained a form entitled "TO THE DENTAL PATIENT". Dentists were advised to clip out the form, copy it, and hand it out to patients. One of the several curious and undocumented statements contained in the form was the following: "On the average, amalgams serve for at least ten years, and very often they last considerably longer". Can this statement, publically printed and distributed, be supported scientifically or is it merely another cavalier "assumption" popularly expounded by amalgam advocates?
These amalgam proponents are fond of proudly identifying their "beautiful" amalgam fillings that have lasted 20-30 years, much as owners of vintage automobiles proudly exhibit their possessions. Such reports do not qualify as scientific documentation of the quality or longevity of automobiles or amalgams. They are better relegated to the "ANECDOOTAL" category, where they belong.

What, then, is found in the scientific literature regarding amalgam longevity? The results of the controlled clinical study of Hamilton, Moffa, Ellison and Jenkins were reported in the Journal of Prosthetic Dentistry, 50 (2), Aug 1983. Ninety seven Dispersalloy and one hundred and twelve Spheralloy fillings were followed and evaluat-ed. At the end of ten years the percent of fillings that were still functional was 17% (Spheralloy) and 18% (Dispersalloy) in molars and 27% (Spheralloy) and 24% (Dispersalloy) in bicuspids. These figures certainly don't sound like an average ten year lifespan for amalgam fillings, one study does not prove a point.

A review study entitled "In Search of Treatment Longevity -- a 30 year Perspective", by George A. Maryniuk, D.D.S., was published in the JADA 109 (5), Nov 1984. The author reviewed all of the available clinical and longitudinal studies on amalgam longevity and concluded: "The studies reviewed suggest that amalgam restorations have a 50% failure time between 5.5 and 11.5 years". The 10-year failure rates cited in the reviewed studies were: 50%, 40%, 64% and 81%, 56%, and 60%. These studies indicate that the statement "on the average, amalgams serve for at least ten years" is clearly an undocumented and ambitious assumption.

It would seem that an ever growing proportion of the dental profession has become suspicious of either the safety or the efficacy of amalgam fillings. Dr. Karl F. Leinfelder, a member of the ADA Council on Dental Materials, Instruments, and Equipment, and Director of the biomaterials clinical research program at the University of Alabama Dental School reported on the changing pattern of restorative use at the Scientific Session (ADA annual meeting, October 1984, reported in JADA 109 (6):893, Dec 1984): "From 1981 to 1983, amalgam moved from having 72% of the market to having 49%; composites moved from 28% to 51%". Dr. Leinfelder also expressed his opinion that the trend would continue.

Although certain proponents of amalgam may be missing the movement of the dental profession into the 20th century, the manufacturing companies certainly can see the handwriting on the wall. A list of the available posterior composite resins was printed in the Bio-Probe Newsletter No. 1. Issue No 2 added Sinterfill by Teledyne-Getz. Four additional new products may now be added to the list, all are light-cured (L.C.). They are HERCULITE (Kerr), OCCLUSIN (Coe), COMPOSITE ONE (Parkell) and POST COM II (Pentron). Anybody interested in forming a Composite of the Month Club?????? (Article provided by M. Ziff, D.D.S.)
Case #4

Patient is an 18 year old Caucasian male. He and his mother presented for an examination and consultation on 4/12/83 after reading a newspaper article that discussed the potential harmful effects of mercury amalgam fillings.

The patient exhibited extremely severe acne over the entire face. The lesions were totally encrusted on both sides of the lower jaw from anterior to posterior. The condition began when the patient was 14 years old. He also was anemic, occasionally felt lightheaded, and suffered severe headaches at age 14 and 15. He became myopic at age 13. He had been under the care of a dermatologist for over four years without success. Numerous therapies had been attempted, including antibiotic therapy, but the condition became progressively worse.

Oral examination revealed seven surfaces of mercury amalgam fillings: buccal pit fillings on the mandibular right and left first molars, an occlusal on the mandibular left first molar, lingual pit on the maxillary right first molar, and a three surface lingual—occlusal—buccal on the maxillary left first molar.

The patient and his mother were informed that no scientific documentation could be found proving that mercury amalgam fillings could cause acne, but there were documented cases of mercury causing skin rashes and eruptions. They elected to have the amalgams removed. All seven surfaces of amalgam were removed on 4/15/83 and replaced with composite resin.

On 4/20/83 the mother phoned to report a slight improvement in the acne. She phoned again on 4/21/83 reporting a marked improvement. The use of 3000 mg of Vitamin C and 1000 mg of Cysteine was recommended. On 5/2/83 the mother phoned to report more improvement, especially on the left side. The patient and mother presented at the office on 5/26/83 to exhibit the dramatic improvement in the condition. All encrustations and eruptions were gone, leaving only the underlying scarring, particularly on both sides of the lower jaw. The use of Vitamin E topically on the scar tissue was recommended. The mother stated that the change had resulted in a dramatic alteration of the patient's emotional status and attitude towards life and the future.

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EVENTS

The first Board of Directors meeting of the newly-formed Academy of Oral Medicine and Toxicology will be held on Saturday and Sunday, March 2 and 3rd, 1985 at the Terrace Garden Inn, Atlanta, Georgia.

The Academy was formed to scientifically investigate the biocompatibility of oral materials and promote the informed use of those materials that are biologically acceptable.
The Academy welcomes and encourages participation from the membership. Room reservations may be arranged by calling the Terrace Garden Inn, 1-800-241-8280. Be certain to specify that you will be attending the A.O.M.T. meeting in order to receive the special room rates.

The hotel is located in the heart of Atlanta (Buckhead area) approximately twenty minutes from the airport. Transport to and from the airport is by the Atlanta Airport Shuttle, taxi, or rent-a-car.

Further information on the Academy meeting may be obtained from Murray J. Vimy, D.M.D. (President) 403-266-2158, Michael F. Ziff, D.D.S. (Secretary) 305-293-3185, or Ronald M. Dressler, D.D.S. 404-349-2088.

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I was absolutely thrilled to receive a phone call from Dr. Jack Levinson of London, England. Dr. Levinson told me that the first annual meeting of the British Dental Society for Clinical Nutrition is to be held at Kings College, Cambridge University, July 15-16, 1985. The subject of the meeting will be "Mercury Toxicity The Great Debate" and they have invited Professor Soremark of the Karolinska Institute in Sweden to be their guest speaker. Dr. Levinson also informed me that there is also a British Society For Nutritional Medicine.

Participation and attendance at the July 15-16 meeting is by invitation only. If anyone would like to see if it is possible to attend you may write to Dr. Levinson at Flat 5, 30 Harley St., London, WIN 1AB, England.

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FORUM

The following letter was received from L. Larry McKinley, D.D.S., 19 Farina Road, Newton Centre, MA 02159, (617)527-3030:

I am writing to you because a dear friend of ours is under legal attack for his stand on the mercury amalgam issue.

Dr. Victor Penzner has been subpoenaed before the Attorney General of Massachusetts to defend his public statements that mercury amalgams cause systemic illness. Dr. Penzner is a thoroughly knowledgeable practitioner and he will prevail. He will present a strong case that mercury amalgam fillings have systemic impact.

I support his philosophical and professional stand. I support his ethical and moral duty to inform and encourage fellow practitioners to refrain from placement of mercury amalgam fillings. Dr. Penzner has worked diligently to promote communication within the profession.
concerning the mercury amalgam hazard. Dr. Penzer has tried to prevent polarization of opinions.

We must always resist unwarranted harassment. The health practitioner who looks critically at the use of mercury amalgam is more likely to be singled out for attack by the established institutions supporting the status quo. We must all join together to resist such harassment. Certainly this focus of the judicial system on Dr. Penzer should be viewed as a threat to us all.

In the defense of his position, Dr. Penzer has incurred substantial legal expense. I have contributed financially to his defense and I trust that you will do so. He needs our support. I hope you will share in his load by contributing generously.

We have established a Mercury Legal Action Fund for Dr. Penzer. We shall solicit donations which will be used for his legal defense. Your contribution is tax-deductible. Please draw your check to TETRAHEDRON/MERCURY and mail to me in the self addressed envelope.

I will be calling you in the next ten (1) days to answer any questions you may have. I look forward to talking to you soon.

We all exist by a common energy. Peace and joy to you.

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Enclosed is a Petition initiated by Dr. Victor Penzer that deals with the need to have the establishment do something about the amalgam toxicity issue.

Dr. Penzer suggests that you send copies to as many of your health care colleagues as you think will participate or who are sympathetic to the issue. Everyone signing a petition should forward it to Dr. Victor Penzer, 197 Grant Avenue, Newton, MA 02159. If you want to talk to him about it (617) 332-1234. If sufficient signatures are collected, Dr. Penzer would like to have the petition published in one of the newspapers as an open letter.

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Mindy Kopolow's interest in mercury toxicity began when a dear and close friend, who had been diagnosed as having MS, found her way to Dr. Victor Penzer. Her fillings were removed in June of 1984 and her progress since has been remarkable; she moves closer to total absence of any MS symptomatology each day. Mindy began networking with a number of mercury amalgam victims in the Massachusetts area and discovered that most of these individuals had a great need to share their feelings and experiences with other people who understood the problems, frustrations, health problems, and great psychological trauma one must endure as a mercury amalgam victim.

Mindy feels it is extremely important that a national organization be established that will provide:

1. A forum in which experiences, feelings and ideas can be exchanged.
2. Correspondence with public officials in regards to legislation pertaining to mercury toxicity.
3. Correspondence with mercury amalgam support groups in Europe.

The name of the new organization will be The Mercury Amalgam Information Center. Hopefully it will be a tax-exempt unit that will provide the much needed public sector voice. If you desire more information write to Mindy Kopolow, 111 Park Drive #52, Boston MA 02215.

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The following article is reprinted from the Baltimore Sun of October 24, 1984 and was provided by Mid-Atlantic Enterprises along with a congressional petition to all of their customers. I feel the issue is so critical to the future of all of us that I am duplicating the effort for our readers.

Editor: A recently introduced bill (H.R. 6050) in the U.S. House of Representatives would make it a criminal offense to sell or prescribe medical treatments that are known to be "unsafe or ineffective or unproven for safety and efficacy." While protecting the public against quackery is a laudable goal, the bill as written is a serious threat both to medical progress and to civil liberty.

Strictly speaking, at least 90 percent of all currently accepted medical treatments are "unproven" in that they have never been subjected to a rigorous double-blind, randomized clinical study. Aspirin for pain, antacids for ulcers, bypass surgery and nearly all cancer therapies are among the many treatments that have not been proven safe and effective in accordance with the standards of modern science.

It is unlikely that the government will use this bill to imprison the medical profession en masse. If passed, however, H.R. 6050 might be used by the medical establishment against those who practice non-traditional medicine. A growing number of physicians have become convinced that nutritional therapy, acupuncture, spinal manipulation, and other modalities are frequently safer, more effective and less expensive than standard medicine and surgery. Organized medicine refuses to look at these treatments with an open mind; on the contrary, it has continually harassed those who dare to deviate from the norm.

In the old days, the only penalty for being innovative was the loss of one's license to practice medicine. Now we have to worry about going to jail for saving our patients from toxic drugs and surgery. The "unproven" must be removed from this pending legislation. Pikesville, Maryland

Alan R. Gaby, M.D.

If you believe in freedom of choice, please do something about it. Do a separate mailing to your patients, place petitions in your reception room, solicit your patients to get their friends and neighbors to send completed petitions to their congressional representatives. It is an issue that could have a devastating effect on the quality of health care in this country.