Mercury Detoxification:

Perpetuating Factors, Problems and Obstacles

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I. Pseudo-Problems:

a. **poor urine or stool collection**: metallic mercury evaporates at room temperature and becomes a gas that is invisable, has no taste and no odor. It slips through any crack in any container. It is also chemically agressive and will react with most plastics or even slip through the wall of the container and can be detected on the outside. In dentistry it is known, that metallic Hg, liberated when fillings are removed, freely passes through 6 layers of latex into the skin of the dentist. Washing the container with nitric acid has shown some benefit. Other compounds of mercury present in urine or stool may react with the container in unpredictable ways

   Suggestions:

   - keep container in fridge (at the patients home, not the doctors office)

   - keep container closed tightly during collection process

   - keep container away from sunlight (activates various Hg compounds)

- shake container well and vigorously before filling aliquot in transport tube

b. **unreliable lab method used, to diagnose Hg**

not every method can detect Hg in every possible Hg compound. Usually Hg has to be knocked of its chemical bond, before it can be detected via the different methods. People can have high levels of Hg bonded firmly to some substance in the urine, which escapes detection suggestions:

- doubt a low mercury reading, when history and symptoms suggest mercury toxicity

- change labs from time to time (for the same patient)

- split sample from time to time

- communicate with the lab-director

II. Real Problems

1. Making the Diagnosis of Hg(or Other Metal) Toxicity:

There is no single simple way to make the diagnosis, because Hg is not in everybody in the same tissue or in the same ionic form. Any specific diagnostic method or detox agent or detox procedure is working better in some areas then others.

a. Hg is compartmentalized in one or several of many body-compartments

- jaw bone
- CNS
- fat
- bone (matrix vs. intracellular: inside osteoblast or osteoclast, which organelle is affected? Is the nucleus contaminated?)
- skin
- hair, finger-and toenails
- eye, ear, cranial nerves
- ANS and PNS ganglia- PNS-axons - ENS
- hormone producing glands
- endothelium of blood vessels and lymphatics
- connective tissue (extracellular matrix)
- cell-wall - intracellular - inside cell organelles - inside the nucleus
- organs (i.e: basal membranes of kidneys, on the blood side of the filtrating membrane or the urine or collecting tubule side, in the connective tissue of the kidney) etc.,etc.

b. mercury is stored in different ionic forms:

- Hg 0 = metallic mercury
- Hg + = Hg-salts
- Hg ++= organic Hg

Rule #1: ***The more electrons Hg has lost, the firmer it is bound in the tissue and the harder it is to mobilize***

Rule #2: ***When making the diagnosis of Hg toxicity, all tissues need to be considered***

c) diagnosis by clinical symptoms

Hg has been called "the great imitator". There is virtually no medical condition that has not been caused by Hg or is not aggravated by it. It is therefore not sufficient to suspect Hg toxicity in a given compartment based on the patient's clinical presentation.

However, Hg is a potent neurotoxin and should be suspected as the underlying cause of every chronic neurological illness unless proven otherwise. The type of neurological deficit allows to conclude, where the Hg is. If any other illness is suspected to be caused by Hg, the location of the symptom suggests the location of the Hg. Example: arthritis of the small joints of the hand is often caused by Hg, where the joint space is used as excess storage site. **The location of Hg storage and the location of the symptom are often identical.**

d) diagnosis by history:

Occupational exposure, exposure from eating contaminated fish or taking contaminated fish-derived supplements (EPA/DHA), accidental swollowing of mercury from broken thermometers, having your office or home in a place that used to be a dental office, etc. are all common exposures to Hg that can leave life-long problems behind.

The most common form of Hg exposure is from dental amalgam fillings (past or present). Even though the total number of fillings is a good predictor of total Hg-body-burden it is not a good predictor for severity of symptoms or body compartments with the greatest load of Hg. Since the fillings outgas metallic Hg vapor, the worst form of exposure, it is safe to assume that the limbic system (end station of Hg vapor transported in the olfactory nerve) and the brainstem (endstation of the cranial nerves V, IX and X that transport mercury from the mucous membranes of the mouth) are most affected. ***History can reasonably predict which body compartments are involved in Hg toxicity.***

e) MRI

Recently the MRI has been used with some success to diagnose metal deposits in the brain. Resonance phenomena have been used successfully to determine aminoacid levels within the brain. The technique should be widely available soon to determine specific metal levels inside the brain and other tissues.

f) hair analysis:

Hg gets into the hair follicle via the blood stream, then binds to the keratin protein. Methyl-Hg becomes up to 250 times more concentrated then in the blood where it came from. It is therefore a great test for acute Hg toxicity, which is by definition the stage in which Hg is present in the blood stream. After acute exposure to Hg - such as placement of a dental amalgam filling - most Hg is disappeared from the blood within 3 weeks and none is present in 3 months. After 3 months most the Hg that has left the filling is oxidized and now firmly bound to proteins and proteoglycans (ie enzymes, matrix-structure in connective tissue) or as metallic Hg stored in fatty tissue. None of it is in the blood and the hair analysis is negative or low for Hg (even though the brain may be dying from Hg-toxicity).

g) DMPS-challenge

the first dose of DMPS given to a patient may achieve one of several things:

- substitute low sulfur levels
- mobilizes excess copper, zinc and arsenic (before mobilizing Hg)
- mobilizes Hg in the endothelium and off the cell walls of red-cells and white cells in the vascular system before reaching the kidneys
- mobilizes Hg in the kidneys
- mobilizes Hg in the connective tissue beyond the vascular wall (can be enhanced by giving DMPS more rapidly to create a stronger osmotic gradient)
- mobilizes Hg on the outside of cell walls of various organs and systems
- possibly mobilizes Hg on the inside of some cells

Each subsequent DMPS injection reaches a deeper level. The highest yield in the urine appears when the most concentrated depot of Hg has been reached. This can be treatment #1 or treatment #30! The later in the treatment the high yield, the deeper the body compartment from which the Hg came.

h) selective mercury/metal challenges

1. Neural Therapy

The most accurate way to use DMPS to determine which body area has high concentrations of Hg is the " selective neural therapy/DMPS challenge" introduced by this author several years ago:

DMPS can be selectively injected into tissues suspected of holding a large burden of Hg, followed by urinalysis. High urine or stool values of Hg suggest that the tissue injected was loaded with Hg.

Examples:

- selected trigger point injections
- autonomic or sensory ganglion blocks
- retrobulbar block (eye)
- thyroid injection
- pelvic injection
- segmental injections, using intrasegmental axonal transport of DMPS
- kidneys, brain, sinusses, spinal chord
- lymphnode injection (i.e.tonsil injection)
- selective nerve block (i.e. sciatic nerve)
- selective joint injection (i.e.intra-articular shoulder joint injection)

The patients history can guide the practitioner as to where the diagnostic injection(s) should be given.

2. Electro-Mobilization:

use the Electro-Bloc on the tissue in question for 20 minutes either sandwiching the tissue between both electrodes or by treating the autonomic ganglion which governs this area, followed by i.v. DMPS or oral DMSA (500 mg) and 3 hour urine collection. Compare with results obtained on previous challenges with the same agent when

electricity was not used. If Hg level is clearly elevated, Hg has been selectively mobilized from the tissue flooded with electricity.

3. Mercury vapor lamp mobilization:

The author found that by exposing a skin segment to the light generated by a Hg vapor lamp intracellular Hg can be mobilized and displaced extracellularly. The Hg is selectively mobilized in the anatomical segment and tissues sharing the same autonomic innervation.

4. transdermal cilantro challenge/Jerome mercury breath analyzer

the author has developed a transdermal solution of the natural herb cilantro. This solution can be applied to joints and skin areas suspected of being Hg storage sites. The breath is tested for Hg content before application of the solution and 1 min. 2 min and 5 min after. If the breath level of exhaled Hg increases significantly, compartmentalized Hg has been detected and mobilized.

5. DMSA challenge

DMSA is behaving more unpredictably and chaotically and crosses the blood brain barrier sooner. Whatever is mobilized with DMSA, we cannot conclude with reasonable accuracy where the Hg came from. All we can say is, that it is inthere somewhere. If the patient had a fish meal within 72 hours, the yield will be high. If the patient is chronically constipated, this time can be as long as 3 weeks. DMSA is believed to be superior to DMPS in its ability to mobilize organic mercury (Hg ++), especially methylmercury. A clinical tip: if a patient does not do well with DMSA, increase the dose or continue giving it, until the detox symptoms subside.

6. D-Penicillamine

D-Pen is excellent for mobilizing Hg intracellularly. High values on the D-Pen challenge suggest high intracellular Hg levels.

7. Selective mobilization of Hg from the gut

3 effective agents are available:

- chlorella pyreneidosa
- chitin and chitosan
- activated charcoal

8. Selective mobilization from the skin: Sauna Therapy

Can be very effective! Removes Hg from the skin. Levels can be tested with sweat test. Far infrared saunas also mobilize Hg in deeper tissues (3"down). Avoid re-uptake by the lungs!

i) the direct resonance phenomenon

Using the bi-digital O-ring test and the "resonance phenomenon between identical substances", discovered and published by Yoshiaki Omura, MD is currently the only non-invasive way to diagnose exactly - if, how much, what chemical form of, and where - mercury is in the body.

Rule #3: ***Choose the appropriate detox-agent for the compartment in question!***

Currently there is no available Hg detox agent that can mobilize Hg from every body compartment evenly.

Rule #4: ***Choose the appropriate confirmatory test for the body compartment in question!***

If a chelating or complexing agent is used that cannot mobilize Hg in the involved tissue, no Hg will appear in the specimen obtained!

Rule #5: ***Remove the source!***

This is also known as **rule #1 of toxicology**.

If the patient has a **toxic profession** where he/she is continually exposed to Hg fumes, detoxing can be dangerous or lethal.

If the patient continues to eat **contaminated fish** (all fish today is contaminated), don't treat him/her!

If the patient has **amalgam fillings** he/she will absorb significant amounts of metallic Hg on a daily basis, which is gradually converted to the more toxic forms. All detox agents that appear in the blood stream will also appear in the saliva or even concentrate there. They will mobilize Hg out of the fillings and may set more Hg free then the agent will carry out of the body. Treating someone who has Hg/amalgam fillings with a Hg-detox protocol is violating rule #1 of toxicology and is jeopardizing the patient's well being. Older fillings are usually (not always) less dangerous then more recently placed fillings with higher Hg-content.

Rule #6: There is a difference between mobilizing and detoxing

Mbilization means stirring Hg up in its hiding place. Mobilization may lead to ***excretion.*** It also may lead to ***redistribution***. The body had done the best it could by storing Hg wherever it stored it. By mobilizing, we tell the body that we know better wher to put it. We don't.

Detoxifying or detoxing means <u>mobilizing and moving it out</u> of the body

There are no true detoxifying agents. All we have is mobilizing agents. The body has to do the excreting with the help of the proper agents. The body is not always able to do this! Often perpetuating factors are present that disable the bodies mechanisms to detox.

2. Perpetuating Factors

Even when the appropriate agent is used for a given patient, Hg may not be released in significant amounts. Certain biochemical, structural, emotional, electromagnetic and psychological/spiritual problems will "lock up" the Hg in the tissues. Resolving the causative situation will often on it's own not release the stored Hg, but will lead to a high yield of Hg on the next challenge.

1. Biochemical Factors:

a. more obvious biochemistry:

- low serum sodium
- low serum calcium
- low intra-and extracellular minerals and trace elements (selenium etc.)
- low extracellular electrolyte content (Body-Bio E-lyte sol.)
- low protein diet (SH-group containing aminoacids)
- untreated hormonal problems
- low stomach hydrochloric acid
- tissue alkalinity
- low serum cholesterol (=Hg shuttle agent)

b) Mercury toxicity potentiating factors (Synergy factors):

Synergy means: 1 + 1 = 100 (or more then 2)

- zinc and copper
- toxins from dental/jaw infections (most significant)
- stress (excess exercise, lack of sleep/rest)
- presence of other toxins: lead, aluminum, cadmium, solvents, insecticides/herbicides/pesticides, golfing
- aspartame
- vaccinations
- gold fillings/crowns present with amalgam fillings
- food allergies, especially wheat

c) genetic problems:

- low glutathione levels
- lack of other detox enzymes
- DNA damage caused by mother's or father's amalgam

d) kidney problems (lack of appropriate filtration)

e) gut problems (constipation/reabsorption, leaky gut, lack of excretory function due to parasites and microbes or autonomic dysregulation)

2. **Strucutral Factors:**

- -poor occlusion/cranio-sacral problems
- - kink in ureters ("dropped kidney")
- - post-traumatic spinal problems
- - blockage of lymphatic low pressure system
- - blockage of fluid system in brain/spinal chord (ventricles)

3. Emotional Factors

- - early childhood trauma
- - unresolved family system conflict
- - amalgam specific conditioning events: sexual abuse in dental context
- - amalgam fillings of mother during pregnancy (conditioning event)

Rule #7: for each unresolved psycho-emotional conflict there is an aliquot of toxic material stored in the body

Whenever a conflict is successfully resolved, an even amount of toxic material can be easily released from the body. Vice versa, for each amount of mercury (or other toxins) released from the body, psycho-emotional material surfaces that has to be aknowledged, understood and processed! Failure to be aware of and help to resolve these issues is the most common reason for difficulties, side effects and crises during a detox program. Each toxin stored has a specific set of unresolved emotional and spiritual issues, that were responsible in trapping the toxin in the first place. Advanced spiritual masters have been able to drink poison and not be affected by it.

The most profound mercurial issue is a ***lack of connection to God*** . In Greek mythology Mercury was the messenger who communicated between humans and god.

The forces that would like to you to keep the mercury in your mouth or in your body are the same forces that benefit from you feeling disconnected from god (and therefore craving god- substitutes like money, cars, entertainment, excitement etc.)

4. Electromagnetic Influences:

- scars
- electrogalvanism (teeth)
- geopathic stress (bed)
- biophysical stress (cell phones)
- clothes

Rule #8: Hg deposits in the body act as a microantenna, which concentrates electromagnetic phenomena

3. Treatment for Mercury (and Other Metal)Toxicity

Some choices:

- I.V.Vit C

- I.V. glutathione
- DMPS
- DMSA
- Captomer (mixed succinates)
- D-Penicillamine
- DL-Methionine (Redoxal)
- other SH-group containing amino acids
- Chlorella
- Pro Chitosan
- Porphyrazyme
- Cilantro
- Garlic and Bear Garlic
- Vitamin E
- Peptide Clathrating Agent
- Homeopathy
- Pleo-Chelate (oral EDTA and minerals)
- High dose mineral substitution
- i.v. EDTA
- s.c.desferoxamine (Desferal)

III. Conclusion:

Today we have excellent choices for the diagnosis and treatment of heavy metal toxicity. Problems arising during the detoxification process can be understood and successfully managed. Detoxifying the organism from heavy metals should be a significant component of any holistic treatment approach in the treatment of chronic illness. It should also be a significant component of any preventive health regime or "anti-aging" program.