CHELATION THERAPY

A comprehensive treatment for the prevention and reversal of vascular disease

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What is chelation therapy?

Chelation therapy is a safe, non-surgical treatment, which improves blood flow and enzyme function through the body. The procedure is performed in a physician's office through a series of intravenous infusions of a substance called EDTA (ethylenediamine-tetra-acetic acid). For the past 40 years, EDTA chelation therapy has also proven successful for the prevention and improvement of vascular occlusive disease responsible for heat attacks, strokes, gangrene and impotence, as well as many other age-related degenerative conditions. It is the accepted treatment of choice for lead poisoning, hypocalcaemia, and a dangerous arrhythmia caused by digitalis toxicity.

Hancke and Flytlie (1992) of Denmark provide EDTA chelation for patients on the waiting list for coronary artery bypass (CABG) or amputation, with the impressive results that 58 out of 65 bypass candidates and 24 out of 27 amputation candidates war able to cancel their surgery. EDTA chelation therapy is finding increasing acceptance among both physicians and patients in many countries through the world because of its high degree of effectiveness and comparatively low cost.

What are the indications for chelation therapy?

Many people choose to undergo chelation therapy preventively, to reduce their chances of developing heart disease, strokes, and related vascular disease. Beneficial effects have been reported in arthritis, scleroderma, early senility, and many other ailments. Blumer and Cranton (1989) compared subsequent death in match chelated and nonchelated subjects and found a 90% decrease in cancer rates noted in the follow-up studies for 18 years after chelation. Drs. Terry Chapel and Johns Stahl (1993) performed a meta-analysis on data from 19 studies including a total of 22,765 patients. Eighty-seven percent of the patients who had undergone chelation demonstrated significant clinical improvement by objective testing.

Because chelation works at the cellular biochemical level to restore optimal functioning, it has been proven beneficial in a wide variety of conditions. Chelation therapy is often chosen as an alternative to bypass-surgery, but it can also be used after bypass or angioplasty to prevent re-occlusion of blood vessels. Chelation is compatible with various categories of medications commonly used for heart and vascular disease and high blood pressure. The need for drugs is often reduced or eliminated after a course of chelation therapy. Circulatory problems of diabetes can be dramatically improved, often preventing gangrene and amputation. Chelation therapy can also reduce insulin requirements. Arthritis sufferers often report benefits due to removal of calcium deposits in joints, and increased tissue healing.

How is chelation therapy given?

Each program is individually tailored according to the patient*s clinical condition and the goal of therapy, patients typically undergo one or two weekly sessions lasting 2 to 4 hours each, for 15-30 weeks. During treatments, patients rest in comfortable recliners, and are free to talk, eat, listen to music,

or sleep. Chelation therapy can allow the body to health, but disease may recur unless the root causes are removed. Patients are helped to create their own comprehensive program which includes:

- Chelation therapy
- Proper nutrition
- Exercise
- Stress reduction
- A healthy lifestyle, e.g; no smoking or excessive alcohol consumption.

Is chelation therapy safe?

Under currently accepted protocols, chelation is entirely safe. Kidney function tests, along with several other lab tests, are routinely performed during chelation to ensure safety, even for individuals with pre-existing conditions.

Most patients experience few or no side effects. Occasionally one may experience minor Vein irritation, headache, or fatigue, all of which are easily controlled. The American College for Advancement in Medicine (ACAM/ www.acam.org) estimates that more than 6 million EDTA treatments have been given in the USA without a single proven fatality caused by chelation when administered by properly trained and supervised practitioners. The role of EDTA was eclipsed in the 1970*s by the rapid development of surgical techniques such as bypass surgery, endarterectomy, angioplasty, and now laser surgery.

Recently, chelation therapy has been growing in popularity throughout the civilized world. Chelation therapy is covered by the national Health Services of the United Kingdom and Germany, and recognized by several other European countries. In the United States several small private insurance companies now offer coverage for chelation as an option to bypass surgery. At this time, Medicare pays only for chelation done for lead poisoning, hypercalcemia, and digitalis toxicity.

History of chelation therapy

The safety and effectiveness of EDTA chelation therapy has been well documented. EDTA was patented in Germany in 1935 and been used since the early 1950's to treat many different groups of people suffering from lead poisoning. Similar unexpected health benefits began showing up in these. groups, including improved stamina, relief from chest pain, better memory and concentration, enhanced vision, and sense of smell.

By 1964 numerous clinical observations had been reported. Alfred Soffer, M.D., in his book on chelation therapy, stated that atherosclerotic patients suffering from occlusive peripheral vascular disease (especially those with diabetes) appeared to benefit from repeated administration of EDTA. Richard H. Casdorf, M.D. demonstrated, improved cardiac function and cerebral blood flow. Dr. McDonagh confirmed Casdorph's brain blood flow using a different measurement technique, studying arterial blood flow to the back of the eyeball. Dr. E. Cheraskin also reported an increase in blood flow after EDTA treatment using objective measurements, with individual patients serving as their own controls.

Many physicians have published accounts of the benefits of chelation therapy. These include reversal of many of the symptoms of diabetes and arteriosclerosis. Additional benefits included reduced pain, healing of leg ulcers, a more youthful appearance, and reduced incidence of cancer, arthritis, and other degenerative diseases. Many of these landmark studies demonstrating the clinical safety and effectiveness of chelation therapy have been reprinted by the American College for Advancement in Medicine (ACAM) in *Textbook on EDTA Chelation Therapy* (1989).

How does chelation work?

Chelation

The word "chelate" is derived from the Greek work "chele", which refers to the claw of a crab or lobster, implying the pincer-like binding action of certain chemical substances to a metal ion. The free, electrically-charged ionic forms of the minerals are removed first. Calcium and other essential minerals tightly bound to bone, teeth, and vital enzymes are less apt to be removed. There is a list of order of preference by which particular metals bond to EDTA. High on the list are lead, cadmium, aluminum, nickel, mercury, iron, and copper. These metals greatly increase the production of free radicals, well-known culprits in disease and the aging process. Due to the current high level of environmental pollution, the bodies of most people contain significant quantities of toxic metals. The EDTA molecule tightly grabs hold of a metal ion and carries it out of the body through the kidneys in the urine.

Early proponents of chelation were likely to describe it as a "Roto-Rooter™" treatment in which the calcium was pulled out of plaque, quickly dissolving arterial blockages. The true story, however, is much more complex, and many details are still under investigation. In 1979, Bruce Halstead, M.D. published a technical work on the scientific basis of chelation therapy. He stated that although the removal of calcium plays a definite role in the removal of plaque and the restoration of arterial flexibility, many of the beneficial effects of EDTA therapy are due to it modulating effects of free radical proliferation.

The role of calcium.

Calcium is an essential mineral and in chelation therapy only certain forms of calcium are removed. The body, in its wisdom, first dissolves the calcium loosely held in arteriosclerotic plaque and abnormal skin deposits. The calcium which is more firmly bound into bones and teeth is not affected. In fact, bone density has actually been shown to increase after chelation therapy. During therapy, all vital nutrients are replenished through a program of vitamin and mineral supplements. By removing pathological accumulations of calcium, iron, and other toxic heaving metals, the body is given an opportunity to heal. There is an additional mechanism through which the calcium removed during chelation therapy is redistributed within the body. When the serum calcium level is reduced during EDTA therapy, the parathyroid gland attempts to maintain a stable level of calcium in the blood by producing the parathyroid hormone. This signals the body to withdraw the calcium loosely held in the joints, skin and vessel walls.

Cells involved with the metabolism of bone tissue are also stimulated by brief bursts of parathyroid hormone released during sessions of chelation therapy. Through a newly discovered rebound effect, groups of these cells, call Basic Multicellular Units, continue to build new bone for about three months after treatment has been completed.

Free radicals

Free radicals are tiny particles with a single unpaired electron on their outer orbital ring, making them extremely reactive and unstable. They are a necessary part of cellular metabolism, but only when present in the proper places and in the proper amounts. like nuclear reactions, they can reproduce themselves in chain reactions which can become extremely destructive if uncontrolled, attacking cell constituents in an undisciplined and chaotic manner.

Healthy cells have sufficient mechanisms to control free radical proliferation such as the en2ymes catalase, SOD, and glutathione peroxidase. These natural enzymes gradually become inhibited by environmental poisons such as lead, nickel, and cadmium. Chelation removes these metals, helping to restore a health metabolism and immune system. Vitamins C, E and beta carotene, as well as substances**such as selenium, cysteine, methionine, tyrosine, cholesterol, glucocorticosteroids and others, restrict free radical activity to its proper domain. Without these control systems, free radicals multiply rapidly, disrupting cell membranes, damaging enzymatic proteins, interfering with both active and passive transport across cell membranes and causing mutagenic damage. An abnormally functioning

or malignant cell may result.

Free radicals can damage tissues through cross-linkage of structural molecules in the skin, blood, vessels, and other connective tissue. This leads to loss of elasticity as seen in the wrinkles commonly associated with aging. Elasticity is also lost when calcium is deposited in abnormal buildup of materials (plaque) in the arterial wall. Demopoulos (1980) has correlated heavy metal accumulation, free radical activity, and lipid peroxidation with the initiation and promotion of cancer.

Doctors Garry Gordon and Robert Vance have shown that EDTA chelation improves arterial elasticity by reducing the number of cross-linkages in arterial walls. By reducing free radical damage and also removing calcium from the blood vessel wall, the vessel becomes more flexible and therefore can dilate (open up) more fully. In chelation therapy, this process occurs throughout the body, in large as well as tiny vessels. Surgery, on the other hand, concentrates on the repair of a very small segment of specific vessels, without addressing the overall problem.

Plaque formation

The initial event in arterial disease is damage to the arterial wall lining from the stress of normal blood flow. High blood pressure, traumatic injury such as surgery, and free radical damage greatly accelerate the rate of injury. Free radicals also promote the development of non-malignant growths Called atheromas within the arterial wall. This leads to accumulations of collagen, elastin and other connective tissue constituents. When this growth exceeds its blood supply of oxygen and other nutrients, it tends to break down and become necrotic (dead tissue). It then begins to accumulate massive amounts of platelets, cholesterol and calcium, developing into arterial plaque. Calcification is actually a late occurrence of plaque formation.

Spasm

Within normal arterial walls there is a delicate balance of chemicals called prostaglandins. One prostaglandin called prostacyclin acts as the "Teflon[1]**' of the arteries, preventing spasms, blocking clots, reducing platelet stickiness, and improving blood flow. Another prostaglandin; thromboxane, promotes vascular spasm, platelet aggregation and clotting. These are useful functions needed to stop blood loss in case of hemorrhage. Prostacyclin production turns off in the vicinity of free radical activity, whereas production of thromboxane is unaffected. When the prostaglandin balance is upset by free radicals, excessive pileups of platelets occur. Red blood cells are trapped and rupture, releasing free copper and iron, both potent catalysts of a chemical reaction called lipid peroxidation which damages cell membranes* This peroxidation increases the rate of free radical reaction a mulionfold. Free radical shutdown of prostacyclm production this triggers an unopposed spasm of blood vessels and increased platelet accumulation, leading to clotting. This can explain why angina or heart attacks frequently occur after a fatty meal replete with peroxidized fatty acids. Spasm is also promoted when the cellular membrane transport systems are damaged by free radicals, impairing the pump mechanism which carries calcium ions out and magnesium ions into the cell. Heart attacks are likely to" occur when spasm is superimposed upon a vessel already narrowed by plaque. Vascular catastrophe can even result from severe arterial spasm in the absence of plaque.

References and Suggested Reading

Many -'of Jhe following articles and texts on chelation therapy are available from the American College %r Advancement in Medicine, 23121 Verdugo Drive, Suite 204, Laguna Hills, California 92653. Tel: 800-532-3688 or 714-583*7666.

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