

Can Biomaterial Surgical Implants Influence the Body's Health?

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Abstract

Statement of the problem: The necessity of surgical implants use is a consequence of the increase of life expectancy. Therefore, the use of implants it's becoming more common, and a range of studies regarding the implant materials and their interactions are being created. Usually, these studies are carried out analyzing the production and interaction of materials, and often, they do not consider the effects of those materials in the normal functioning of the human body.

Purpose: Demonstrate that the placement of metal implants can influence body's health, leading to a decrease in vital energy.

Methods: Two clinical cases, the first, of a 30-year-old male patient, who suffered an accident and broke the right elbow and right leg, requiring surgery with surgical implant of titanium rod in both limbs. Two months after surgery the patient presented symptoms of a very severe depression, that would not improve with the use of antidepressants. The second case is from 60-year-old female patient, who implanted a titanium dental prosthesis. Three months after the implant, the patient started feeling weakness and indisposition for daily activities, in contrast to her normal behavior. In addition, she also presented precocious aging with the greying of her hair. The chakras energies of both patients were measured through a crystal pendulum, and they were both with low or none energy in their seven chakras.

Results: In the first case, the patient was instructed to remove the implant. Two hours after the removal, the patient presented extreme improvement of the depression symptoms. The second patient did not remove the implant, and continues to present symptoms of low vital energy. **Conclusion:** The implantation of metallic material inside the human body, can lead to reduction of vital energy, inducing different symptoms, like depression, according to these two case reports.

Keywords: Health; patient; Biomaterial

Introduction

The use of biomaterials implants has been increasing in the last decades, as a consequence of higher life expectancy. Some studies can attest that fact, such as, for example, Yuji Sato, in the study entitled *Implant Treatment In Ultra-Aged Society*, where he states that the elderly of our society have been requiring the use of more implants, as they are becoming older than they were in the 1960's[1].

Also, according to a study of Elani H.W., entitled *Trends in Den-*

tal Implant Use in the U.S., 1999-2016, and Projections to 2026, estimated that the prevalence of dental implants grown from 0,7% in 1999 to 5.7% in 2015 [2].

Being more widely spread and used around the world, new queries and hypothesis also appear. The author used her 27 years of practice and constant observation of varied patients, with different pathologies, to focus on the holistic comprehension of the patients.

To achieve the goal, the author constantly tries to observe aspects not accounted in diagnosis and treatment [3-6].

The use of ancient traditions perspectives, knowledge and tools proved to have great effect when diagnosing and treating different pathologies. In other studies [3-6], the author demonstrates the effectiveness of these tools in the most varied pathologies, such as diabetes, different infectious diseases, different cardiac issues, psychological diseases such as anxiety and depression, and the majority of the chronic diseases.

Trying to extract the knowledge of Traditional Chinese Medicine, Ayurvedic Medicine, and Hippocratic theories, the author started to observe a group of aspects, related to the general health of the patients. These aspects were diet, external/environmental pathogenic factors, emotional/psychological states and other patients' habits. The author, through this study, introduces a new aspect significant in the medical reasoning, that is the use of specific materials and objects, that may be influencing in the general state of energy of the patient, and are not usually addressed or observed in current medicine. These objects or biomaterials present inside the patient, may start or aggravate an imbalance in the energy of the patient. Considering all these factors, the author would be able to develop a holistic diagnosis and effective treatments.

In her daily practice, the use of biomaterial implants appeared several times as a negative influence in the general state of patients, constantly seeming to low bodies' energy. In the two cases studied in this article, the author perceived lower vital energy and strength in the patients with large-pieces of titanium in their body.

When analyzing studies regarding biomaterial implants it is possible to perceive that the use of the number of implants has been growing in the past decade [7]. Besides, the biomaterial market is growing in value and size. In 2012, it could be valued in 94 billion USD, and it is estimated to achieve 175 billion worldwide until 2022 [8].

For metal implants, the perspectives are, in general, reassuring: titanium implants are yet considered the safest option regarding implants, according to Karthika [7], and to an article entitled *Implant biomaterials: A comprehensive review*, titanium is considered a good and safe material to perform different types of implants [9].

On the other hand, several other studies tried to link the use of implants with autoimmune diseases and other pathologies, in general comprehended as side effects of rare or exceptional cases. A study conducted by three different authors, entitled

Autoimmunity In Connection with A Metal Implant: A Case Of Autoimmune/Autoinflammatory Syndrome Induced by Adjuvants, presented a situation very similar to the one present in the two case studies in this article: after the implant was taken out, the symptoms disappeared. Other studies demonstrated similar results [10,11].

However, it was hard to perceive any relation between the symptoms described in the case studies and the exceptional cases in which the implants can have malfunction and cause hazards to the body.

The hypothesis proposed in this study is to try to comprehend the examples of these two case studies from the perspective of the ancient medical traditions: considering the patients in the energy level, or root-level, as previously said by the author [3-6].

Purpose

First, to demonstrate how the placement of metal implants in the body can influence body's health in the energy level, decreasing vital energy.

Second, to attest, once again, the importance of treating the patient holistically, considering varied aspects and possibilities when performing diagnosis and treatments.

Methods

The methodology used to constitute this article was based in the comparison and parallels of two case studies with literature regarding metal implants and their effects in the human body. Literature regarding Traditional Chinese Medicine, energy and chakras was also analyzed.

The emotions of the patients, related to the diagnosis and other personal-life areas, as well as the personal descriptions of the cases were also maintained in the study, as similar as original as possible, as for Traditional Chinese Medicine, Humoral theory and other ancient traditions, the emotions are significant on the diagnosis. According to these medical theories, these aspects influence health, creating and/or explaining symptoms.

Description of case study

The first attendance of the patient to the clinic was in 2017. The patient was a 30-year-old male, which will be called E. He described the following symptoms:

- No physical energy
- Chronic fatigue, that would keep him from performing daily activities.

The first and second doctors he saw, a neurologist and a psychiatrist, both diagnosed him with depression. The patient reported to not expect the diagnosis, feeling shocked. According to him, he was not feeling sad, only tired and uninterested. As tiredness, lack of interest and chronic fatigue are depression symptoms, he

was diagnosed and received prescriptions of Zoloft, Klonopin and Midazolam, which effects and side effects were described in Table 1, 2 and 3, available in Attachment 1. He stated he wanted to live normally, but his body was not allowing him to.

	Table 1 – Midazolam Leaflet
	Midazolam
Use	Used to induce sedation. A very relaxed state of calm, drowsiness or sleep and relieves anxiety and muscle tension. - Conscious sedation (an awake but very relaxed state of calm or drowsiness during a medical test or procedure) in adults and children - Sedation of adults and children, in intensive care units. - Anaesthesia in adults, used alone or with other medicines. - Premedication medicine used to cause relaxation, calm and drowsiness before an anaesthetic in adults and children.
Side Effects	<ul style="list-style-type: none"> • Anaphylactic shock (a life-threatening allergic reaction). Signs may include a sudden rash, itching or lumpy rash (hives) and swelling of the face, lips, tongue or other parts of the body. You may also have shortness of breath, wheezing or trouble breathing. • Heart attack (cardiac arrest). Signs may include chest pain which may spread to your neck and shoulders and down your left arm. • Breathing problems or complications (sometimes causing the breathing to stop). • Choking and sudden blockage of the airway (laryngospasm). <p>* Life-threatening side effects are more likely to occur in adults over 60 years of age and those who already have breathing difficulties or heart problems, particularly if the injection is given too fast or at a high dose.</p>
Other Possible Side Effects	<p>Immune System disorders: General allergic reactions (skin reactions, heart and blood system reactions, wheezing)</p> <p>Psychiatric disorders: • confusion • euphoria (an excessive feeling of happiness or excitement) • hallucinations (seeing and possibly hearing things that are not really there) • agitation • restlessness • hostility, rage or aggression • excitement • drug dependence, abuse. Nervous system disorders : • drowsiness and prolonged sedation • reduced alertness • headache • dizziness • difficulty co-ordinating muscles • fits (convulsions) in premature infants and newborn babies • temporary memory loss.</p> <p>Cardiac and Vascular disorders: • low blood pressure • slow heart rate • redness of the face and neck (flushing), fainting or headache.</p> <p>Gastrointestinal disorders: • nausea • vomiting • constipation • dry mouth. Skin and subcutaneous tissue disorders: • rash • hives (lumpy rash) • itchiness.</p> <p>Musculoskeletal and connective tissue disorders: • muscle spasms and muscle tremors (shaking of your muscles that you cannot control). •</p> <p>General disorders and administration site conditions: • tiredness (fatigue) • redness • swelling of the skin • blood clots or pain at the injection site.</p> <p>Injury/Poisoning and Procedural Complications: • Patients taking benzodiazepine medicines are at risk of falling and breaking bones. This risk is increased in the elderly and those taking other sedatives (including alcohol).</p>
Amount Taken	Not know
Time of Use	Not know

Table 1: *All the information presented on the table were based on the leaflev of the Midazolam 1mg/ml information, available online.

Table 2 – Zoloft Leaflet	
Zoloft	
Use	<p>Sertraline Tablets is one of a group of medicines called selective serotonin reuptake inhibitors (SSRIs). These work by bringing the level of serotonin in the brain, back up to normal. Low levels of serotonin are thought to be a cause of depression and related disorders. Sertraline can be used to treat:</p> <ul style="list-style-type: none"> • Depression and prevention of recurrence of depression in adults • Social anxiety disorder in adults • Obsessive-compulsive disorder (OCD) in adults, children and adolescents aged 6 -17 • Post traumatic stress disorder (PTSD) in adults • Panic disorder in adults
Side Effects	<p>Very common side effects (may affect more than 1 in 10 people): • insomnia • dizziness • sleepiness • headache • diarrhoea • feeling sick • dry mouth • ejaculation failure • fatigue</p> <p>Common side effects (may affect up to 1 and 10 people): • sore throat, anorexia, increased appetite • depression, feeling strange, nightmare, anxiety, agitation, nervousness, decreased sexual interest, teeth grinding • numbness and tingling, shaking, muscle tense, abnormal taste, lack of attention • visual disturbance, ringing in ears • palpitations, hot flush, yawning • abdominal pain, vomiting, constipation, upset stomach, gas • rash, increased sweating, muscle pain, sexual dysfunction, erectile dysfunction, chest pain</p>
Other possible Side Effects	<p>Uncommon side effects (may affect up to 1 and 100 people): • chest cold, runny nose • hallucination, feeling too happy, lack of caring, thinking abnormal • convulsion, involuntary muscle contractions, abnormal coordination, moving a lot, amnesia, decreased feeling, speech disorder, dizziness while standing up, migraine • ear pain, fast heartbeat, high blood pressure, flushing • breathing difficulty, possible wheezing, shortness of breath, nose bleed • inflammation of the oesophagus, difficulty swallowing, haemorrhoids, increased saliva, tongue disorder, burping • eye swelling, purple spots on skin, hair loss, cold sweat, dry skin, hives • osteoarthritis, muscular weakness, back pain, muscle twitching • night time urination, unable to urinate, increase in urination, increase in frequency of urination, problem urinating • vaginal haemorrhage, female sexual dysfunction, malaise, chills, fever, weakness, thirst, weight decreased, weight increased. Rare side effects (may affect up to 1 in 1,000 people): • intestine problem, ear infection, cancer, swollen glands, high cholesterol, low blood sugar • physical symptoms due to stress or emotions, drug dependence, psychotic disorder, aggression, paranoia, suicidal thoughts, sleep walking, premature ejaculation • coma, abnormal movements, difficulty moving, increased sensation, sensory disturbance • glaucoma, tear problem, spots in front of eyes, double vision, light hurts eye, blood in the eye, enlarged pupils • heart attack, slow heart beat, heart problem, poor circulation of arms and legs, closing up of throat, breathing fast, breathing slow, difficulty talking, hiccups • blood in stool, sore mouth, tongue ulceration, tooth disorder, tongue problem, mouth ulceration, problems with liver function • skin problem with blisters, hair rash, hair texture abnormal, skin odour abnormal, bone disorder • decreased urination, urinary incontinence, urinary hesitation • excessive vaginal bleeding, dry vaginal area, red painful penis and foreskin, genital discharge, prolonged erection, breast discharge • hernia, injection site scarring, drug tolerance decreased, difficulty walking, abnormal laboratory tests, semen abnormal, injury, relaxation of blood vessels procedure • Cases of suicidal ideation and suicidal behaviours have been reported during sertraline therapy or early after treatment discontinuation (see section 2).</p>
Amount Taken	Not know
Time of Use	Not know.

Table 2: *All the information in was taken out of Zoloft leaflet, available online.

Table 3 –Klonopin Leaflet	
Klonopin	
Use	The precise mechanism by which clonazepam exerts its antiseizure and antipanic effects is unknown, although it is believed to be related to its ability to enhance the activity of gamma aminobutyric acid (GABA), the major inhibitory neurotransmitter in the central nervous system. Convulsions produced in rodents by pentylenetetrazol or, to a lesser extent, electrical stimulation are antagonized, as are convulsions produced by photic stimulation in susceptible baboons. A taming effect in aggressive primates, muscle weakness and hypnosis are also produced. In humans, clonazepam is capable of suppressing the spike and wave discharge in absence seizures (petit mal) and decreasing the frequency, amplitude, duration and spread of discharge in minor motor seizures.
Side Effects	Seizure Disorders: The most frequently occurring side effects of Klonopin are referable to CNS depression. Experience in treatment of seizures has shown that drowsiness has occurred in approximately 50% of patients and ataxia in approximately 30%. In some cases, these may diminish with time; behavior problems have been noted in approximately 25% of patients. Others, listed by system, are: Neurologic: Abnormal eye movements, aphonia, choreiform movements, coma, diplopia, dysarthria, dysdiadochokinesis, "glassy-eyed" appearance, headache, hemiparesis, hypotonia, nystagmus, respiratory depression, slurred speech, tremor, vertigo Psychiatric: Confusion, depression, amnesia, hallucinations, hysteria, increased libido, insomnia, psychosis (the behavior effects are more likely to occur in patients with a history of psychiatric disturbances). The following paradoxical reactions have been observed: excitability, irritability, aggressive behavior, agitation, nervousness, hostility, anxiety, sleep disturbances, nightmares and vivid dreams
Other possible Side Effects	Respiratory: Chest congestion, rhinorrhea, shortness of breath, hypersecretion in upper respiratory passages Cardiovascular: Palpitations Dermatologic: Hair loss, hirsutism, skin rash, ankle and facial edema Gastrointestinal: Anorexia, coated tongue, constipation, diarrhea, dry mouth, encopresis, gastritis, increased appetite, nausea, sore gums Genitourinary: Dysuria, enuresis, nocturia, urinary retention Musculoskeletal: Muscle weakness, pains Miscellaneous: Dehydration, general deterioration, fever, lymphadenopathy, weight loss or gain Hematopoietic: Anemia, leukopenia, thrombocytopenia, eosinophilia Hepatic: Hepatomegaly, transient elevations of serum transaminases and alkaline phosphatase
Amount Taken	Not know
Time of Use	Not know.

Table 3: * All the information in was taken out of Klonopin leaflet, available online.

He also described not feeling well with the medication intake, experiencing symptoms that according to Attachment 1 (Tables 1, 2 and 3), could be part of his depression diagnosis and/or side effects of the medications.

The treatment the author started with the patient, after the diagnosis of the two other doctors, was based on the use of ancient traditions, such as Traditional Chinese Medicine and other theories. The treatment used three tools:

- Chinese dietary counselling, first with the suspension of dairy products, cold drinks, raw and sweet foods. Besides, the patient also was recommended to avoid, coffee, soda and matte tea.

- Moxibustion (Technique to recharge energy based on the burning of specific herbs with powers of healing. In the specific case of this patient, the technique consisted of a cigar made of coal).
- Auricular and systemic acupuncture (Systemic acupuncture with needles of stainless steel, 25 x 40, disposable. The treatment consisted in only positioning the needles and taking it off, due to the severe lack of energy of the patient. Auricular acupuncture was done with mustard seeds, each point positioned in the ear with adhesive tape, to balance the energy of *Yin, Yang, Qi* and Blood)
- Apex ear bloodletting. (Technique done taking five drops of blood on the ear apex, with the main goal of taking out Heat retention)

Systemic acupuncture points used

ST36, CV4, CV6, SP6, LR3, ST25, UB23.

Auricular Acupuncture

Shen Men, Liver, Kidney, Spleen, Lung, Heart, Large Intestine, Occiput, Neurasthenia, Anxious.

Moxibustion

CV4, CV6, CV8, UR23, ST36.

He received chakras measurement, and all his seven chakras appeared without energy. This procedure is performed with a crystal pendulum, with the main goal of measuring the energy level of a patient.

Considering the levels of energy 1 through 8, being 8 the normal level of energy, all chakras of the patient appeared in 1. He was indicated to intake crystal-based and homeopathic medications, to replenish the energy of the chakras. The main idea was to avoid the use of high-concentrated medications, gradually reducing the use of the antidepressants until the complete withdrawal, the reason will be better explained in the Discussion session. The patient stopped attending the sessions by himself, around a month later.

A year later, the patient came back to the clinic, accompanied by his mother, that said he could not leave his bed on his own. The symptoms now were:

- Not being able to work
- Sexual dysfunction
- No strength to perform activities

In the personal life of the patient, his depression ended up culminating in the end of his marriage.

The patient was also oriented through the energy perspective, avoiding other habits believed to be associated with lack of vital energy, such as the excessive use of cellphones and computers.

Looking for a source to his energy imbalance, the doctor questioned the patient about the use of metallic implants in his body. The answer was positive: The patient had suffered an accident two years before, which resulted in an emergency surgery at the hospital. The fractures were treated by the placement of an intramedullary nail into his tibia and a prosthesis at his right elbow, described in Figure 1.

Figure 1: Tibia Intramedullary Nail after Removal.

According to some O'ring test studies, all objects are barriers of energy, and some objects can draw the energy of the body. The hypothesis was that the patient could be having his energy weakened by the use of the metallic implant.

As the surgery was done two years before and usually, intramedullary nails can be removed after a certain period, it was suggested for the patient to search with his orthopedic doctor the possibility of removing the prosthesis.

Results

A few months later, the patient went back to the office without his intramedullary tibial shaft, after the removal by his orthopedist.

The symptoms the patient described in his first consultations disappeared and did not return until nowadays. In his personal descriptions of events, the patient describes to feel his energy back two hours after the removal of the titanium implant.

He described to have normal sexual, professional and personal life after the removal of the biomaterial implant. The patient stopped the use of the antidepressants also, and described to feel a lot better without the use of them.

Description of case study

The second case is from 60-years-old female patient, who implanted a titanium dental prosthesis.

Three months after the implant, the patient started feeling weakness, which was very unlike her normal behaviour. The patient described having a very busy lifestyle, having a very active profile. As she was a dressmaker, she used to work all day long and still had energy in the end of the day.

She was already patient of the author from before the dental implant, performing auricular acupuncture sessions to treat cervical pain.

She went away to perform this treatment in her teeth, which resulted in the dental implant.

When she came back to the clinic, around six months later, she had aged a lot. What called the author's was mostly was the colour of her hair that changed to white very fast.

The patient was also feeling a lot of pain in the local of the implant, feeling very bad. She described feeling overall very "lazy", totally indisposed and without energy.

This patient's chakras were measured as well as in as the patient from case one. All chakras were energy depleted. Through a one to eight energy rating, eight being the balanced chakra, all her chakras appeared in level one. She was completely without energy. She tried to remove the implant, due to the local pain and also because of these general weakening he was feeling in her body after the implant, but no dentist wanted to take her dental prosthesis

Results

As the patient was not able to take out the prosthesis, she is still feeling weakness, fatigue and lack of energy.

Her chakra measurement also did not appear better, even with the use of crystal-based and homeopathic medications for replenishing the energy of the chakras, in the same way as in the case one, demonstrating how the titanium dental implant is influencing her energy state.

Discussion

Metallic implants: a comprehensive review

An orthopedic implant is a medical device manufactured to replace a missing joint, a missing bone or to support a damaged bone. The medical implant is mainly fabricated using stainless steel and titanium alloys for strengthening the steel material. A plastic coating is also done, to act as an artificial cartilage [7].

Regarding titanium implants, they are mostly included in prosthetic hip and knee replacements for various types of arthritis, spinal fusion instruments for stabilizing degenerate and unstable vertebral segments and fracture fixation devices of various types such as plates, screws and intramedullary rods [7,9].

The ultimate goal of an implant is the firm bonding or fixation of the implant's biomaterial to the bone. Titanium is considered the most biocompatible metal to the human body due to its resistance to corrosion from bodily fluids, high strength, rigidity, fracture strength and their reliable mechanical performance as replacement for hard tissues. Titanium was first introduced into surgeries in the fifties after having been used in dentistry for a decade [12].

However, titanium and its alloys are not immune to corrosion in the human body. Its alloys are susceptible to hydrogen absorption which can induce precipitation of hydrides and cause embrittlement, leading to material failure. When there is a failure in the material, patients have to undergo revision surgeries, which involves high risks of complication and additional costs [12,13].

Generally, there are three types of implant-tissue bad responses. The first type is the response of the patients' tissues to the toxicity of the implanted material. Implanted material may be toxic or release chemicals that could damage the surrounding tissues [13-16].

The second response, also the most common, is the formation of a non-adherent fibrous capsule between the implant and the patient's tissues, most commonly known as fibrosis. This is a totally natural response to protect the body from a foreign object which may eventually lead to complete fibrous encapsulation [13-16].

A third complication would be when cells stay stuck between the implant and the fibrous capsule. Without the general tissue functions of removing apoptotic or necrotic cells, this may promote chronic inflammation [13-16].

The resulting titanium debris may play a leading role in the initiation of the inflammatory cascade that leads to osteolysis. Eventually this may cause aseptic loosening as the bonds of the implant to the bone are destroyed by the body's attempts to digest the dead cells. When this occurs, the prosthesis becomes loose and the patient may experience instability and severe pain, requiring a revision surgery [13-16].

These complications regarding the implant itself, are not common, and are associated with the time of permanence of the titanium in the body.

As demonstrated by Stuart J. Froum, in an article entitled *Implant Complications: Scope of the Problem*, in the patients studied by him, 10 years after the implants, the technical complications rose from 4.3% after 5 years to 26.4% after 10 years of surgery. Of the 9% of restorations that were cemented, loss of retention of the restorations occurred in 6.2% within 5 years and 24.9% within 10 years [17].

However, the complications perceived in the two case studies are not related to resistance of the immune system to the material, not even to corrosion of the material or infections prevenient for implant complications. The complications presented by the patients were in the energy level.

The health of the body and energy: Facing Health Issues in Root-Level

In the last years, the author has been studying ancient medical traditions in order to take out what is useful in these theories. To comprehend these tools a major concept has to be understood, not usually taken into consideration in the daily lives of patients, as well as ignored by the majority of Western physicians. The concept of energy.

Traditional Chinese Medicine was the first to attribute the well-functioning of the body to an association between four types of energies: *Yin*, *Yang*, *Qi* and Blood. According to other studies of the author is possible to comprehend how these energies are important to the body and can influence the general state of health of a patient.

The author attributes the name "root-level" to the problems occurring in the energy level, attributing the underlying cause of several pathologies to them.

In the case of biomaterials implants, their damage in the two cases studied is anchored in the energy level. The symptoms the patients presented, such as extreme fatigue, early aging and depression symptoms, would have their underlying cause lying on the implants, while it was not possible to perceive it, and also not possible to associate the implants with any other health physical issues of the body, leading the majority of the doctors to a different diagnosis, not linking the use of the implants to the symptoms.

How to measure energy damage: O-ring test

The bi-digital O-ring test, an applied variant of kinesiology, is claimed to provide information about health of internal organs by testing finger strength under various conditions. This diagnosing screening method used in Western Medicine, Dentistry, Veterinary Medicine, Acupuncture and Oriental Medicine is a non-invasive method, it has the advantages of not exposing patients to surgical exploration, radiation from x-rays or strong magnetic fields; not requiring expensive equipment or maintenance; and is easily learned and simple to be applied [18-21].

It was developed in the early 1980s and patented in 1993 by Yoshiaki Omura, who discovered the O-Ring phenomenon. Once the diagnosis is done through the O-ring test, and the patient's problem is established, safe, effective, individualized treatment can be found for each individual patient. For dentists, safe, effective, dental materials can be selected before installing harmful ones. Overall, the bi-digital O-ring test is able to attest if any material is causing harm to the patients' energy [18-21].

In conclusion, with his discovery, Omura showed that the O-Ring test could be used as a research and pre-screening tool before administering standard Western diagnostic tests, thus providing a reliable guide for treatment. He also demonstrated its utility for compatibility testing of food and drugs, as well as their toxicity and dosage [18-21].

The test consists of an exam forming an O-ring – a "fairly perfect circle" – by touching to the tip of one finger on the same hand. The other hand holds the subject wished for examination, like food, drugs, nutritional supplements, biomaterials, surgical materials, etc. The examiner creates two circles that intersect with the O'Ring and closes each circle with the thumb tip from the same hand, as demonstrated in Figure 2 [18-21].

The examiner tries to pull the examinee O'Ring apart, using a relatively fast speed while the examinee resists. Generally, if the O'Ring can easily pull out, it means that the object of study being examined is low on energy profile, being harmful to health. If the O'Ring is hard to or cannot be pulled out, this indicates that the subject is strong in energy profile which is good for health [18-21].

Figure 2: O -ring.

Specifically, in the case of the first patient, after the removal of the prosthesis, the O-ring test was performed in one hand, while in the other, the patient was holding the titanium alloy previously present in his leg. When he was holding the titanium piece, his O-ring would open very easily, while appearing strong when he was not using it. The test was also done with his cellphone, and the same happened, the ring could be easily opened.

The theme of this article was previously presented in different congresses, among them the 2nd International Conference on Orthopedics and Advanced Care, in February 2019 in Singapore and in the 23th International Conference in Immunology and Infectious Diseases, in April of 2019 in London, where the author performed a workshop, describing the O-ring test, the advantages of its use and the effects of titanium use.

How to measure energy depletion: Chakras measurement

In the two case reports described, the chakra centers measurement was a significant part of the diagnosis.

The use of the chakra centers measurement was previously analyzed by George Washington, in the article entitled *The Scientific Basis of Integrative Medicine*. In the article, the author describes the pineal gland as a link between our external environment and the network of internal body systems, comprehending the chakras system as an extension to the body's working systems.

In another article, entitled *The Geometry of Emotions: Using Chakra Acupuncture and 5-Phase Theory to Describe Personality Archetypes for Clinical Use*, the author links the use of chakras mea-

surement with the principles of Traditional Chinese Medicine, described by the author in other articles, to comprehend the influence of a weakened result in the chakras in the other systems of the body. Although this article is focused in personality archetypes linked to the chakras, it establishes a relationship between the Five Elements Theory and the seven chakras, in the same way as proposed by the author in previous articles, and represented in Figure 3.

Figure 3: Relationship between chakras and Five Elements Theory.

Each chakra is responsible for the functioning of several organs, and is the battery for these organs to work. If the battery of the one chakra is low, the organs related to it will be working less energy. As in the case of the patient he had no energy in all his chakras, he did not have energy for nothing, as well as the patient in the second case.

Conclusion

The conclusion of this study is that biomaterial surgical implants can influence the body's energy.

Nowadays, for example, there is the option of zirconium dental implants, made of a ceramic material, which does not seem to cause these deleterious effects that titanium is causing on patients' energy. Other studies in the field need to be developed to find materials that are not harmful to the body's energy, when patients need implants.

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