

## USING SILICONE<sup>1</sup>

Transforming their body is one of the steps taken by every trans person (transexual, transgender, transvestite) by wearing certain clothes and accessories, or by directly altering their contexture, organs and aspect. In most countries, this process isn't included in public health services, and so it has to be payed for. Although there are clinics and specialized centres for the aesthetic transformation of the body –which is also an identity building process in the trans community–, there is also a great percentage of cases in which it is practiced by unqualified people at a very low cost and with very serious consequences, including death. However, this alternative is the only option for those who can't afford a specialist, in a context in which their job opportunities have been limited due to an identity that the society, starting with their own family, doesn't understand.

Because of this situation, we think it is important to publish the effects of the use of silicone for altering the body, its risks and consequences, as well as alternative products which could claim less lives if they are researched and developed for massive use, thus lowering the costs.

### WHAT IS SILICONE?

Silicones are made of chains of dimethyl polysiloxane, a relatively inert compound whose viscosity is proportional to its number of chains. These substances started being developed in the 1930's, but it isn't until 1947 that they start to be used in plastic surgery with different indications, amongst which were the silicone gel injections for mammary implants, the first of which was applied in 1962. Since then, studies about the reactions they caused started to be published. To prevent its migration from the place in which they were injected, different substances were added to it, such as

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vegetable oils or fatty acids to limit fibrosis and extension to neighbouring tissues.

There are two groups of silicones: non medical or industrial, and medical. Antioxidants, accelerators and/or colorants are used in the synthesis of the former; these substances aren't used for the latter. Silicones for industrial use can be processed as oils, gels or gums.

Studies carried out in the 1970's demonstrated that the subcutaneous injection of silicones with aesthetic purposes can cause severe local and systemic (pulmonary) inflammatory complications, because of its migration to the regional and distant lymphatic tissue, and also to further places through the bloodstream, which is why the FDA limited its use in 1965 and prohibited it in 1976. This illegal practice is still carried out, with all the risks and complications it causes, something which is aggravated when non medical personnel apply it.

The subcutaneous injection of silicones with cosmetic purposes could cause pulmonary thromboembolism, which is deadly. It has been demonstrated that silicones that are injected subcutaneously cause local tissue damage and could eventually enter the bloodstream and thus provoke pulmonary embolism. In 1975, Ellenbogen and his staff reported four cases of complications caused by this type of transexual practices, which consisted of three cases of granulomatous hepatitis and one of pulmonary bleeding. Since then, isolated cases started to be documented and there were attempts to elucidate the consequences. One of their postulates stated that there were two types of presentation of the symptoms: one was acute and the other subacute, which could unleash up to six months after the injection.

In the cases of illegal injections of silicone, the mechanism of pulmonary embolism is harder to establish and would be related to the local pressure induced by the injection of great amounts of substance, to the local massage usually associated to this procedure, to the migratory effect, or to the direct

intravascular injection; the latter seems to be the mechanism that causes death in this case. Certain findings reveal the presence of an acute process as the event that causes the death.

Silicones that are injected subcutaneously can enter the bloodstream and then pulmonary circulation causing thromboembolism and then death. Unfortunately, there are no precise facts about this type of practices, because they are carried out by non medical personnel in an illegal context, but it is of vital importance to investigate the causes of death in people who have undergone this procedure in order to look for possible solutions or prevent their consequences.

## SILICONE AND DANGERS

The use of silicone by unqualified personnel and in inappropriate conditions has caused many victims, thus the need for each country to respond to the social and vital demand of many trans people that every day pay with their lives the indifference of those who should veil for their security and welfare.

In the last five years, 240 thousand people died around the world because of failed plastic surgeries. Estimations of plastic surgery associations refer that surgeries without previous studies, not only in clandestine places but also in prestigious clinics around the world, have caused the death of 240 thousand women and transvestites in the last five years, in cases that were registered and denounced as negligence. According to the Women's News Service, since the 1980's, when mammary implants filled with silicone gel started to be used, these have been identified as responsible for endless suffering: from asthma, arthritis and cancer, to causes of suicide in lots of women and transvestites who were not satisfied with the final results.

On the other hand, Stephen Thomas, a transvestite from Albany, Georgia, USA, who injected industrial silicone to other transvestites so they could have more feminine features, declared himself guilty of the death of a man who

suffered complications. Thomas, aged 31, will go to prison for five years and will have conditional freedom for ten years, after pleading guilty of involuntary homicide. The death of Andre Geter, from Alabama, in December 2003 captured the attention about the rising clandestine activity of injecting silicone amongst transvestites who want to be women, particularly those who compete in beauty pageants and act in transvestite shows. The silicone that Thomas used in Geter can be bought in hardware stores.

“He wanted to enlarge his breasts and ended up losing them. A transvestite died in Corrientes due to a silicone implant. Aquino entered the hospital yesterday after feeling intense pain in different parts of his body, where a person identified as Ricardo had applied liquid silicone injections to enhance his aspect.”

“In Ribeirao Preto, a city close to Barretos, the authorities are investigating the case of two young transvestites who have entered the hospital with a generalized infection, due to the use of industrial silicone to enlarge their breasts. The young men, both aged 18, went last week to the hospital, where they had the silicone drained, but both their states are very delicate, because the product filtered to the chest and in one of the cases it even affected one of the muscles of the arm. One of the specialists that attended the youngsters explained that liquid silicone can enter the lymphatic vessels and if it reaches the lungs or the kidneys it can cause death.”

“Three people were arrested for the case of the woman injected with silicones. They are two women and a hairdresser. They wanted to apply a breast implant with industrial, not medical, silicone. Liliana Ramirez, aged 27, suffered a serious infection and three heart attacks.”

“My lips are swelling but the doctors have told me that they can’t operate me until they burst. They hurt so much that I can’t even drink hot tea. I can’t drink anything hot.”

While the medical silicone is sold sterilized and sealed in order to prevent filtrations, the industrial version isn’t, and can cause infections.

## INSTEAD OF SILICONE

### ARTECOLL

Made of micro spheres of poly-methyl-methacrylate (PMMA) evenly suspended in a solution of partially denaturalised liquid collagen (at 3,5%) and lidocaine (at 0,3%). Its duration is imprecise and individual, it usually lasts many years. It is a permanent option that requires between three to five sessions, depending on how severely the face has been worn down. Doctors should be very well trained because it is very difficult to eliminate any excess of this product.

### Indications:

- To enlarge the lips.
- To fill in face wrinkles.
- To correct irregularities in the nose.
- To fill in acne scars.
- In inverted nipples or to create permanently erect nipples.
- To fill in hereditary small defects or those caused by loss of tissue due to trauma.
- To enlarge the chin or cheekbones.

### Complications:

- Inflammatory granulomatous reactions to foreign bodies in the injected zones.
- Displacement and surfacing of the fluid.
- Lip deformities and indurations could appear.

- White granuloma, reddening and induration of the corners of the mouth.
- In the nasolabial folds, loss of skin flexibility (due to superficial injections).

### POLYLACTIC ACID (sculptra)

One of the latest innovations in the field of long lasting filling implants that can be reabsorbed. It is a LIOFILIZADO (in cristaline form) sterilized APIRÓGENO cutaneous implant that contains micro spheres of polylactic acid that reconstitute when dissolved in water for injecting. This gel is a synthetic polymer (hydrogel of polylactic acid), it is biocompatible (it does not cause rejection), biodegradable (it is eliminated naturally), immunologically inert (it does not produce allergies), non-toxic, can be completely reabsorbed, and it lasts between 12 and 18 months.

It is implanted subcutaneously or intradermically and it stimulates the tissues, concretely the collagen synthesis. Once injected, the skin reacts to the foreign material creating a fibrosis that restores the density of the conjunctive tissue where it is applied and that causes an increase in volume of the skin in the treated zones (there is evidence of a progressive increase in skin thickness during the following 72 weeks).

After the injection, there is an immediate filling along with the swelling effect of the puncture and the one provoked by the polylactic acid. This effect can last hours or days, depending on the volume and sensitivity of the patient. Gradually, new conjunctive fibres will be produced (neo-collagen-genesis) as a reaction to the implant (fibrosis) which cause the restructuring of the skin. The polylactic acid presents slow degradation and can be reabsorbed by the body.

### Indications

- To fill in wrinkles: on the forehead and between the eyebrows, temples, eyelids, crow's feet.

- To fill in furrows: nasolabial folds, perilabial commissures and folds in the chin, neck and low neck.
- To enlarge the lips, cheeks, cheekbones, rings under the eyes, face, hands and knees.
- To correct the signs of facial lipo-atrophy in people with HIV treatment.
- To enlarge the volume of depressed zones: scars and degenerative skin lesions caused by the ageing of the tissues.

### Advantages

The great advantage of this product is that the filling of the wrinkle is obtained by the formation of collagen by the body, stimulated by the polylactic acid and not by direct effect of the injected product. Another of its main advantages is that the product is not toxic. Polylactic acid can be injected in people who have received a previous implant. There is no inconvenience, as long as the previous product hasn't been injected recently.

### Warnings and precautions

Polylactic acid is meant to be used only subcutaneously or intradermally. The flask shouldn't be sterilized again. The injection shouldn't be intravascular, to avoid skin infarct or the embolism of a blood vessel. The fluidity of polylactic acid ensures an easy suction before the injection (which avoids any blood reflux).

Correcting the PERIORBITARIA zone should be avoided. The injection zone should be free of any inflammation or infection. Patients undergoing anti-coagulating treatment could risk the appearance of a bruise or localized bleeding in the place of the injection. Interactions of polylactic acid and other medicines or substances haven't been studied yet. It shouldn't be used if the patient has acute or chronic skin diseases (infectious or inflammatory) in or around the zone that is to be corrected.

### BIOALCAMID: AN INJECTABLE PROSTHESIS

Bioalcamid is a polyacrylamid that has proved to be an important novelty in the field of body fillings. This product allows for the correction of soft tissues, be them hereditary or caused by trauma. Unlike other filling products, once bioalcamid is introduced, a cocoon will be formed around the product in the body of the patient, and it will transform the filling in a real prosthesis which will allow the product to stay still and stable where it has been implanted. Furthermore, this allows for a later extraction of the filling with relative ease, which is a characteristic that no other permanent filling has.

### Indications

- Aesthetic facial corrections, although this product isn't prescribed for the filling of fine facial wrinkles (for example what is known as the "barcode").
- Excellent results are obtained in the correction of nasolabial folds, "puppet lines" and enlargement of cheekbones.
- Enlargement and remodelling of muscular tissue.
- Bioalcamid can be used to increase muscular volume in weightlifters and such, especially in parts which are difficult to enlarge (cuff links, triceps, deltoids...) and to attenuate the defects that sportsmen usually present after muscular breakages caused by heavy weights.

### Advantages

It can be injected in large quantities (it is also ideal for buttocks) without an immune response (although we don't have long term information to support this). The aspect and tactile sensation obtained are very natural. It can be easily removed if excess product is injected.

### Disadvantages

Its application is painful not only because of the size of the needle but also because of the distension produced by the substance when it penetrates the tissues, especially when large quantities are injected. It is not easy to determine the amount to inject. It can be easily displaced by pressure, even while sleeping.

### Complications and undesirable side effects

Although it is still too soon to know the effects, its long term evolution and the possibility of interactions with other products, for the moment we can list the following possible complications:

- Ecchymosis.
- Pigmentations or siderotic spots.
- Haematoma.
- Immediate or differred infection, even months or years after the implantation.
- Displacement of the product.
- Large implants may end up hanging.
- Tensional pressure due to muscular movements.
- Linear and compartmental skin irregularities.
- Folds and adherences.