144 - BIBLIOGRAPHIC STUDY ON THE REVERSE IN LYMPHATIC DRAINAGE OF POSTOPERATIVE ABDOMINOPLASTY

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INTRODUCTION

Today's society is focused on a standard of beauty toward a structurally well-formed body, leading the individual to seek resources to better fit this pattern. Then there was a rush to the offices of specialists focused on aesthetics: dermatologists, Angiology, endocrinologists, geriatricians, and especially plastic surgeons.

The treatment is based on sound scientific concepts has greatly contributed in both pre-and postoperatively, preventing and / or treating the responses coming from the surgery, also enabling the reduction of postoperative anxiety.

This work aims to conduct a bibliographical study on the technique of manual lymphatic drainage, as well as its advantages in the application and effectiveness in patients undergoing surgery Abdominoplasty.

It is known that after any trauma to the body reacts and initiates an inflammatory process leading to edema, after all, Abdominoplasty, discussed in this study, produces a major disruption of blood vessels, promoting obstruction of superficial and deep lymphatic circulation. In this phase, the therapist makes use of various resources to obtain the best possible recovery for the patient, both in control bruising, and swelling and pain.

REVIEW

The lymphatic system is like the blood system, which is closely related anatomically and functionally to the Lymphatic System (Guirro, 2004).

In addition to the blood vessels, the human body is equipped with a parallel system of very fine vessels called 'lymph vessels'. They originate in almost every tissue spaces as very small vessels called 'lymph capillaries.' The capillaries merge into progressively larger lymphatic vessels in that drain into the bloodstream, joints between the jugular veins and subclavian veins. The vessels pass through lymph nodes, called lymph nodes - small organs that filter lymph (Junqueira, Carneiro, 2008).

The lymphatic system is divided into three vascular systems. The depth is related to the drainage of muscle cells, collecting the lymph from the muscles, bony structures, joints and ligaments. Are fewer, and follow the arteries and deep veins. These vessels have a great capacity to repair and formation of new vessels after damage.

The surface is between the skin and superficial aponeurosis, passing through the superficial fascia and lymph nodes related and are found where large superficial veins anastomose with the deep and evolves into a medium-fat cells, and anastomotic and numerous, and beyond anastomoses and direct lymphovenous supraclavias, the lymph, there is still the paralinfáticas Wallace, located in the perivenous spaces. The similarity of the venous system, the lymphatic system is restarted by communicating and perforating, and more autonomous (Ferrandez-Bouchet, 2001).

When the interstitial fluid passes into the lymph capillaries receives the name of lymph. Lymph has a composition similar to blood plasma, and consists mostly of water, electrolytes and varying amounts of plasma proteins that have escaped from the blood through the blood capillaries (Guirro, 2004).

In this system there is absence of a pumping organ, besides being microvasculotissular, but this system has several other important functions. One of them is immune defense specific (acquired) by T lymphocytes and B lymphocytes While receiving a specialization T lymphocytes in the thymus, which enables them to recognize and destroy antigens of a given species, B lymphocytes receive their expertise in the spleen. They produce, when needed, involving antibodies and antigens remains isolated until the arrival of T lymphocytes (Winter, 2002). This transports and processes products excreted by the cells, maintaining stable intercellular fluid compositions, and absorbs fat-soluble substances in the intestines, vital for cell function (VOGELFANG, 1995).

Another responsibility is the filtration system, filtering of lymph tissue that returns before emptying it into circulation. The Starling hypothesis explains the balance between the phenomena of filtration and reabsorption at the level of capillary endings. The physiological state of equilibrium is reached when the drainage pathways are sufficient to evacuate the liquid brought by it, here is a constant renewal of the interstitial fluid in which cells of the body can remove the elements necessary for their metabolism (Leduc, 2007).

If it does not you can generate edema and one of the main conditions that cause edema, include in the reduced capillary pressure, fluid retention, increased capillary permeability, osmotic pressure and decreased lymphatic obstruction (Barros, 2001).

The venous capillaries absorb water and minerals, however, the proteins are not reabsorbed by these capillaries and its concentration starts to increase the interstitial fluid. The oncotic pressure gradient exists in plasma and interstitial fluid is virtually zero, because the leakage of plasma into the interstitium is very large therefore increasing the number of proteins. The amount of protein from the plasma and interstitial fluid reaches almost match up, changing the normal balance of pressures on the capillary membranes, and thus reducing the absorption of water and minerals by the venous capillaries. As a result, the accumulation of interstitial fluid, known as edema (Guyton, 2011).

Plastic surgery of the abdomen, also known as the Abdominoplasty or tummy tuck, is to restore the body contour by removing excess skin and subcutaneous tissue, correcting muculo-aponeurotic flaccidity, ie reshapes the abdomen by removing excess tissue accumulated in the infra-umbilical adjusting the strap loose muscle (HERIBE, 2000).

According to Castro (1997) changes of a functional and aesthetic in the abdomen are mainly arising from pregnancy and consequent sagging, distended globose with diastasis of muscles and stretch marks.

Surgical planning is determined by steps. The anesthesia is the most appropriate epidural, the spinal and general can also be used, the site is rarely used.

Guirro (2004) cites that the most common incision is horizontal infraumbilical or suprapubic low with transposition of the umbilicus, to respect the direction of the vessels, nerves and elastic fibers and / or lines of minimal skin tension.

According Ferrandez et al (1995) The incision spans the entire thickness of the coat until the aponeurotic plane. The

detachment of the abdominal flap is made in fair-aponeurotic plan until the level of the umbilicus, when it is incised in the midline to facilitate further. The umbilicus and released through an elliptical incision in the skin that surrounds it (groove cord) being pulled by a clamp to facilitate keeping the retail release of the subcutaneous tissue. The hemostasis of perforating vessels is always made in advance with electrocautery to prevent major bleeding and bruising within the muscle sheath retoabdominais. The umbilical skin and subcutaneous tissue (pedicle) and shortened and fixed to the aponeurosis in the midline and the natural level of implementation, taking care that it does not show circulatory distress. The position of the navel in retail and made one cm caudally to its projection, it is the marking of the skin in the form of inverted drop.

According Melega (1992) dermolipectomy definitive result is reached after six months of surgery, time required for the accommodation of the scar tissue and maturation. There are three segments that can be corrected in Abdominoplasty: skin, fat tissue and muscles.

Good nutritional status, intercurrent pathologies is no way to remove the most important recommendations is to be respected are factors that can lead to complications during surgery such as alcohol, drugs to lose weight the basis of acetylsalicylic acid (ASA), effects anticoagulants and still smoking.

In addition to changes such as hypertrophic scars and keloids originating mainly by excessive tension in the lower abdomen, seroma is one of the most common complications, along with hematoma, infection, skin injury, dehiscence (opening of the suture) (Gregor, 1996).

After the surgery applies a dressing that is, from the inside out. Place the elastic waistband taking care not to over-compression and no loss disease (BARBOSA, 2007). The compression bandage is intended to keep the pieces detached in intimate contact with his new position and avoid an excessive leakage of plasma. Anyway, this dressing cannot completely prevent the formation of a swelling more or less pronounced, since this is part of the biological process of repair.

In the postoperative period of Abdominoplasty (Tummy Tuck), in a first phase are released that cause a chemical reaction such as vascular vasodilatation resulting in increased plasma extravasation in the injured, the second phase is called restorative, begins with the proliferation epithelial cells in the first 24 hours after injury. There is also an increased rate of epithelial cell keratinization. All the scars that have reached the bottom layer will be repaired by the formation of fibrous connective tissue that consists of collagen fibers. Collagen is a fibrous protein produced by fibroblasts (Moraes, 1998).

It is therefore of vital importance for the full success of the surgery, the extent of swelling is maintained in such proportions as discrete as possible, because a massive edema impairs tissue regeneration by increasing the distance to be covered for nutrients and waste in reverse. By means of manual lymphatic drainage, can effectively contribute to a rapid normalization.

Manual lymphatic drainage is a massage technique that was described initially as a method for treatment of edema, especially lymphedema. Several authors have described it, among them Albert and Emile Leduc and Astrid Vodder (Barros, 2001). The action of manual lymphatic drainage from animal experiments, was verified by numerous clinical studies in humans (Leduc, 2007). The drainage manual techniques have a clear act on proteins, as well as on liquid masses.

By restoring balance to the membrane and be disposed of excess fluids and substances, there is an improvement in oxygenation and cellular nutrition through the arterial circulation.

It is vitally important that the therapist has knowledge of the arrangement of the lymphatic system in the human body, ie, its main vessels, lymph drainage and trunks. As described above, it is known that the lymphatic pathways do not have a central pumping and depends on the movement of lymph and capillary forces external to the system.

The basic objective of manual lymphatic drainage on lymphedema is to drain the excess fluid accumulated in the interstitial spaces in order to maintain a balance of tissue and hydrostatic pressures.

The best results are obtained through the association of elevation of massage and bandaging of the body segment in question, since its course is determined by factors such as gravity and pressure.

Currently, manual lymphatic drainage is represented mainly by two techniques: the Leduc and Vodder. Both are based on the paths of the lymphatic collectors and lymph nodes, involving basically three categories of maneuvers: 1) capture maneuvers, 2) maneuvers resorption and 3) of escape maneuvers. The only difference between them lies in the application site. Some authors recommend starting the manual lymphatic drainage for proximal segment, the evacuation process, thereby obtaining a prior emptying of the ways in which the lymph has to flow.

Leduc (2007) advocates the use of five movements, which, combined together, form their system of massage, lymph drainage, circles with your fingers with the thumb circles, combined movements (thumb and fingers), pressure on bracelet.

Among the maneuvers drain Vodder (1993), distinguished four types of movements, fixed circles, pumping movements, movement of the "donor", rotating movement or rotation.

The pressure and direction should accompany the flow of lymphatic and venous circulation. The movements should be smooth, rhythmic and intermittent pressure with the area being treated and the physiological conditions in which to meet the individual being treated.

Drainage should always be started on the angle venous lymphatic diaphragmatic breaths, regardless of the location of the incisions, to ensure the free flow of lymph.

Slowly and cautiously, advancing the manual lymphatic drainage areas on detached without sliding movements that are inappropriate in the acute phase of repair, the lesion may develop strains, increasing the likelihood of way of developing a hypertrophic scar or keloid, in addition to the operated region is extremely sensitive (Guirro, 2004).

To find that the surgery with large incisions there is an interruption of lymphatic drainage damaging the surface conventional Carlucci (1996), proposes a change in the classical sense of what he called manual lymphatic drainage lymphatic drainage reverse.

The "new" technique is well-founded, since in Abdominoplasty, for example, drainage of the lower quadrants (and converge to the inguinal region) is interrupted by the removal of tissue, leaving only the upper quadrants of the pathways that converge to the axillary lymph nodes (Carlucci, 2000).

The movements of manual lymphatic drainage, directing the lymph from the inguinal region to the lower quadrants, can cause a swelling pericicatricial, promoting an unwanted tension in the lesion.

The proposal of the lymphatic drainage is to perform reverse maneuvers directed only to drainage pathways intact. In this case, the maneuvers will be directed to the axillary region to the reconstruction of the vessels, a fact that occurs within 30 days.

However, the term "reverse" may give the false impression that the lymph flow can be reversed, which does not occur because the lymphatic system is a system of "one way" (Guirro, 2004).

The implementation of drainage massage postoperatively should obey the principles to prevent tissue damage, gliding movements, following the path of the pathways that have not been compromised by surgery should be performed so that

does not promote a greater tension in the surgical incision secure it with one hand. (Guirro, 2004).

Besides the role of acting on the swelling and bruising after injury, manual lymphatic drainage plays supporting role in the repair of wounds because of lymph fibrinogen is the element responsible for the formation of clots, which will give rise to the protective barrier of the lesions. The acute trauma or chronic inflammation in the healing process depends entirely on the efficiency of blood circulation and lymphatic.

CONCLUSION

Manual lymphatic drainage is a scientifically proven technique for its ability to promote the circulation said to return, increasing the capacity of lymphatic capillaries, lymph transported speed and therefore the increase in filtration and reabsorption of the blood capillaries.

By observing the effects of manual lymphatic drainage in surgery of long flaps, among others Abdominoplasty, for example, appeared to reverse called lymphatic drainage. The maneuvers are directed only to drainage pathways intact, until the restoration of the vessels.

The fact of the importance of professional development is seen in all areas of health, engineering, humanities, after all the world is in a state of globalization, people have more access to information, and science is advancing more and more technology and knowledge .

It is vital that the professional classes to unite and develop more scientific studies and research that demonstrate what can make a difference in service to humans, causing him to have a quality life.

BIBLIOGRAPHICAL REFERENCES

BARBOSA, H. **Controle clinico do paciente Cirúrgico.** 7 ed. São Paulo: Atheneu, 2007

BARROS, M. H. **Fisioterapia: Drenagem Linfática Manual.** São Paulo: Role, 2001.

CARLUCCI, A. MD. Drenagem Linfática Reversa. **I Congresso Brasileiro de Fisioterapia Dermato - Funcional**. São Paulo, 2000.

CARLUCCI, Adolfo. **Drenagem Linfática Reversa, Um Tema Novo e Polêmico.** Up To Date, março/ abril, pg 28-30, 1996.

JUNQUEIRA, L.C; CARNEIRO, JOSÉ**. Histologia Básica.** 11ªed. Rio De Janeiro: Guanabara koogan, 2008.

CASTRO, O. **Princípios e Prioridades em Cirurgia Plástica.** São Paulo: Ed. Fundo Editorial BYK, 1997.

FERRANDEZ, F; THEYS, S; BOUCHET, J. **Reeducação Vascular Nos Edemas Dos MMII.** São Paulo: Manole, 2001.

GREGOR, Mc Ian. **Técnicas Fundamentais Da Cirurgia Plástica.** 9ªed. São Paulo: Artes Médicas, 1996.

GUIRRO, E. GUIRRO, R. **Fisioterapia Dermato Funcional.** 3 ed. São Paulo: Manole, 2004.

GUYTON, A. C; HALL, J. E. **Tratado De Fisiologia Médica.** 12ªed. Rio De Janeiro: Elsevier, 2011.

HORIBE, E.K. **Estética clínica e cirúrgica.** Rio de Janeiro: Revinter, 2000.

LEDUC, A. **Drenagem Linfática: Teoria E Prática.** Editora Manole, 3ªed. São Paulo: Ed, 2007.

MELEGA, J.M. **Cirurgia Plástica Reparadora e Estética.** Rio de Janeiro: Metsi, 1992.

MORAES, I. N. **Propedêutica Vascular.** 2 ed. São Paulo: Sarvie, 1998.

VOGELFANG, D. **Linfologia Básica.** São Paulo: Lone, 1995.

WINTER, W.R. **Porque Usar Drenagem Linfática Em Tratamentos Estéticos? Revista Brasileira De Fisioterapia Dermato Funcional.** No. 1, 2002.

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BIBLIOGRAPHIC STUDY ON THE REVERSE IN LYMPHATIC DRAINAGE OF POSTOPERATIVE ABDOMINOPLASTY

ABSTRACT

Studies from several well-Known authors in plastic area and others from linfology show an intense vascular and lymphatic injury after the abdominal dermolipectomy surgery. In consequence of the aggression, the organism develops an inflammatory process that leads to edema, and this edema is the extra cellular liquid expansion of the organism. For this reason, it is the vital importance for the surgery's success that the extension of the edema to be kept in a minimum proportion. This work has the purpose of accomplishing a bibliography study about the manual lymphatic drainage, as well as its advantages and efficacy on patient's application submitted to abdominal dermolipectomy surgery. Beyond working on the edema and hematoma after surgery, the lymphatic massage discharges an auxiliary role in the injuries. The acute trauma or chronic inflammation in the healing process depends entirely on the efficiency of the sanguine and lymphatic circulation.

KEY WORDS: manual lymphatic draining, lymphatic system, abdominal dermolipectomy surgery.

ÉTUDE BIBLIOGRAPHIQUE SUR L'INVERSE EN DRAINAGE LYMPHATIQUE ABDOMINOPLASTIE POSTOPÉRATOIRE

SOMMAIRE

Les études de plusieurs auteurs de renom dans le domaine de la chirurgie plastique et lymphologie autre domaine démontrent intenses lésion vasculaire et lymphatique postopératoire de abdominoplastie. En conséquence de l'agression, le corps a un processus inflammatoire qui mène à l'oedème qui est rien de plus que l'expansion du liquide extracellulaire de l'organisme. Il est donc d'une importance vitale pour le plein succès de la chirurgie, l'ampleur de cet œdème est maintenu dans des proportions telles que discrète que possible. Ce travail vise à réaliser une étude bibliographique sur la technique du drainage lymphatique manuel, ainsi que ses avantages dans l'application et l'efficacité chez les patients subissant une chirurgie abdominoplastie. Outre le rôle d'agir sur l'enflure et les ecchymoses après une blessure, le massage de drainage joue un rôle important en aidant les récupérer de blessures. Le traumatisme aigu ou d'une inflammation chronique dans le processus de guérison dépend entièrement de l'efficacité de la circulation sanguine et lymphatique.

MOTS-CLES: drainage lymphatique manuel, le système lymphatique, l'abdominoplastie.

ESTUDIO BIBLIOGRÁFICO EN EL REVERSO EN EL DRENAJE LINFÁTICO POSTOPERATORIO DE LA ABDOMINOPLASTIA

RESUMEN

Los estudios de varios autores de renombre en el campo de la cirugía plástica y Linfología otra área demostrar el daño vascular y linfático intensa postoperatorio de la abdominoplastia. Como consecuencia de la agresión, el cuerpo tiene un proceso inflamatorio que conduce a edema, que no es más que la expansión de líquido extracelular del cuerpo. Por tanto, es de vital importancia para el pleno éxito de la cirugía, la magnitud de este edema se mantiene en las proporciones lo más discreto posible. Este trabajo pretende realizar un estudio bibliográfico sobre la técnica del drenaje linfático manual, así como sus ventajas en la aplicación y eficacia en pacientes sometidos a cirugía de abdominoplastia. Además de la función de actuar sobre la inflamación y los moretones después de la lesión, el masaje de drenaje juega un papel importante en ayudar a recuperarse de lesiones. El trauma agudo o inflamación crónica en el proceso de curación depende totalmente de la eficiencia de la circulación sanguínea y linfática.

PALABRAS CLAVE: drenaje linfático manual, sistema linfático, abdominoplastia.

ESTUDO BIBLIOGRÁFICO SOBRE A DRENAGEM LINFÁTICA REVERSA NO PÓS-OPERATÓRIO DE DERMOLIPECTOMIA ABDOMINAL

RESUMO

Estudos de diversos autores conceituados na área da cirurgia plástica e outros da área de linfologia demonstram a intensa lesão vascular e linfática no pós-operatório de dermolipectomia abdominal. Em conseqüência à agressão, o organismo apresenta um processo inflamatório que leva ao edema que nada mais é do que expansão do liquido extracelular do organismo. Torna-se assim, de vital importância para o sucesso pleno da cirurgia, que a extensão deste edema seja mantida nas proporções mais discretas possíveis. Este trabalho tem a finalidade de realizar um estudo bibliográfico sobre a técnica de drenagem linfática manual, bem como suas vantagens e eficácia na aplicação em pacientes submetidos à cirurgia de dermolipectomia abdominal. Além do papel de atuar sobre o edema e hematoma pós-lesão, a massagem de drenagem desempenha papel auxiliar na reparação de ferimentos. O trauma agudo ou a inflamação crônica no processo de cicatrização dependem inteiramente da eficiência da circulação sangüínea e linfática.

PALAVRAS-CHAVE: drenagem linfática manual, sistema linfático, dermolipectomia abdominal.