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The EJLRP - official organ of the European Group of Lymphology (GEL), the Latin-Mediterranean Chapter of Lymphology (LMCL) the Società Italiana di Linfangiologia (SIL) covers all fields of Lymphology and aims to present a multidisciplinair approach to diseases of the lymphatic system, with information on the analysis, control and treatments of such diseases.

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The topics include:

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– oncology (primary lymphatic system diseases, lymphonodal metastatic process)
– immunology
– post-therapeutic complications
– upper and lower limb edemas

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I HAVE SOME DREAMS...!

SANDRO MICHELINI
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At the time of my election as President of the European Society of Lymphology (ESL - g.e.l), I can say that my deep enthusiasm in Lymphology leads me to spend greater and greater effort to improve the quality of life of patients affected from Lymphatic Disorders, together with everybody who preceded me in this prestigious place and all other members of the Society. I do not want to make here a mere list of all of them because I do believe that keeping on with the work the previous Presidents have already done and with the collaboration and fervid exchange of experiences that have always existed among all Members for the benefit of Lymphology is the most important thing. Moreover, National Lymphological Societies in Europe are constantly growing both in number of members and for scientific contributions in many Countries: Germany, France, Belgium, Great Britain, Spain, Portugal, Check Republic, Romania, Greece, Poland, Switzerland, and Russia.

Nowadays, we feel more than in the past the necessity of a great opening to these societies and an open dialogue which allow an important and continuous exchange of opinions and experiences, to reach a common scientific language, for the patients' benefit. Altogether it is possible to realize the common aim of each group: to improve the quality of life of patient with lymphatic pathology. This way, it is possible to succeed to built a "Lymphologic United Europe", based on common interests. This will allow each single national group to stress its own guide lines in accordance to local health system.

On the basis of these considerations the planning address of the present presidency has the following aims:

- *Completing the passage from European Group of Lymphology to European Society of Lymphology, already started with the previous presidency and the previous executive committee.*
- *Wider diffusion of the initiatives of the Society on the web through further improvements of the ESL official site with links to different National Societies.*
- *Adhesion of various National Societies to the European Journal of Lymphology (EJLRP), as official organ (besides the Italian and Check Society, also Romanian Society, as agreed with the President Rada, is added to the list so far).*
- *Inclusion of the EJLRP into the ISI to obtain an impact factor, process that has already been started and that is ongoing.*
- *European guide lines on lymphatic disorders, in accordance with ISL Consensus (it is possible to constitute Task Forces of experts upon different fields of interest, as already done by the International Society of Lymphology).*
- *Institution of a group of European Young Lymphologists who prepare themselves to serve the Society in the future, putting their experiences altogether.*
- *Presence of delegates of the administrative Board of the Society at each National Congress of Lymphology.*
- *Promotion of experimental researches, above all among young researchers.*
- *Constant reference in different diagnostic and therapeutic fields to the Evidence Based Medicine.*
- *Promotion of scientific initiatives in partnership with various national scientific societies.*

To realize these goals it is necessary that the Society grows up also in terms of active members. To maintain the Journal, the society organization and the website means having costs, and we do not have any particular grant. The society lives upon the contribution of each single member and, as concerns the journal, of an international firm of the field.

I warmly invite you, finally, to promote adhesions to the society and to find new forms of economic incentives, to allow the association of the high level of scientific activities of the Society to a correspondent adequate worldwide diffusion of it.

Good work to everybody!

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THE GALLBLADDER LYMPHATIC SYSTEM AND ITS IMPLICATIONS IN BILIARY TRACT LITOGENESIS (aspects on various interpretations on the implication of vascular lymphatic vesicular structures in litogenesis)

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ABSTRACT

Aims. Within the wall of the gallbladder, important processes of absorption of the bile components take place. The parietal lymph structures also participate in these processes. We tried to identify indirectly some of the lymphatic implications in these processes, as well as their consequences in two very different situations: limy bile and gallbladder cancer.

Material and methods. During 40 years, we met 12 cases of limy bile (pre and intraoperative diagnosis). Seven of these patients had positive history of cancers outside the hepato-biliary area. During the last five years, in three patients with gallstones and cancer of the gallbladder, we followed the parietal lymph vessels by injecting them with patent blue violet dye and microscopic examination (finding malignant cells within the parietal lymph vessels).

Results. Conclusions. The limy bile was a radiological syndrome rarely met in the literature. The cancer of the gallbladder wall may determine alterations of the absorption processes from within the lumen of the organ. The presence of the limy bile syndrome in patients with secondary lymphoedema following the treatment of female genital cancers is not by far accidental. It might be of interest the alterations of the gallbladder content in the presence of lymphatic stasis in the wall of a cancer-affected gallbladder.

KEY WORDS: gallbladder lymphatics, limy bile, gallbladder cancer.

INTRODUCTION

The volume of the hepatic bile in humans varies between 1 and 2 litres/24 h with a maximum debit of 3ml/min (2) and with a maximum output pressure of 150-250 mmH_2O. This amount is stored inside the gallbladder in between meals, when the bile undergoes mixing and concentration processes. During these processes the bile volume can be decreased by up to ten times (Best, Taylor). Thus 90% of the bile content is normally resorbable. The bile concentration inside the gall bladder is thought to be the consequence of the absorption/resorption capacity of vesicular epithelium and of micro vascular structures including submucosal lymphatics (10, 11). All these data is, or seem to be complicated when attempting a comparison with the animal mechanisms. How do these processes work in animals where the gallbladder is missing - pigeon, ostrich, parrot, paradise bird, rhinoceros, elephant, camel, horse, rat (4), in humans after colecistectomy and exceptionally gallbladder agenesis? Human cholesterol stones introduced in dog gallbladder are dissolved in approximately 3 weeks. These observations have been interpreted as a consequence of concentrated bile acidity in this animal (cystic duct ligature in dogs will produce pigmented litogenesis); inflammatory infectious processes will determine disturbances in the bile acidification/alcalinisation and concentration via the lymphatic and lymphoid parietal structures (10, 11). Concurrently, all the bile constituents are subjected to similar concentration processes inside the gallbladder, but in different proportions from one constituent and physiological step to another, especially in pathologic conditions (7, 12).

METHODS AND RESULTS

During a period of 40 years (1966-2005) we identified, operated and followed 12 female patients with calcic bile; the average age was 56.7 (41-70). In the first 3 cases in our statistic, the diagnosis was an intraoperative "surprise" (Fig.1). These first 3 patients showed chronic colecystic symptoms and a fixed gallbladder opacity at contrast colecystography. After administering a Boyden lunch, shape and size of the gallbladder remained constant: radio opacity of subcostal intensity. In the next 9 cases, the diagnosis was established preoperatively on plain x-rays. Seven patients from this series had antecedents of neoplasm outside the hepato-billiary tract and no secondary determinations at this level. In five

of these patients a secondary lymphoedema was present, small in size in 4 and medium-sized in one case. In 3 patients with lymphoedema of the lower limbs, gallbladder opacity was identified on late x-rays after lymphangiography.
Lymphangiography of the lower limbs with medium-sized unilateral lymphoedema showed stasis in the lymphatic vessels of the affected thigh with collateral circulation on the opposite limb (Fig. 2). The gallbladder presented an opacity of costal intensity.
On plain x-ray of the right hypochondrum the shape of the gallbladder opacity remained unchanged in orthostatic or supine position in 4 cases, with a blurred proximal edge.The intensity of the opacity was stronger in orthostatic position then in supine position (Fig. 3, 4).

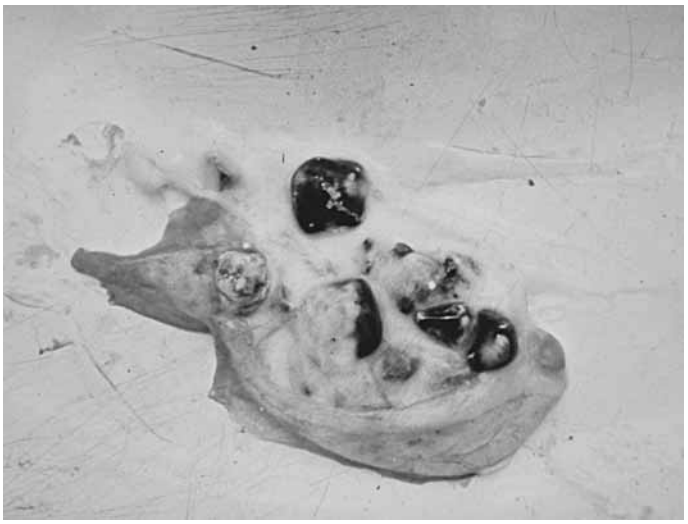

Fig. 1 - The first case of limy bile that we operated – postoperative aspect: white, viscous, clay-like bile; cholesterol calculi.

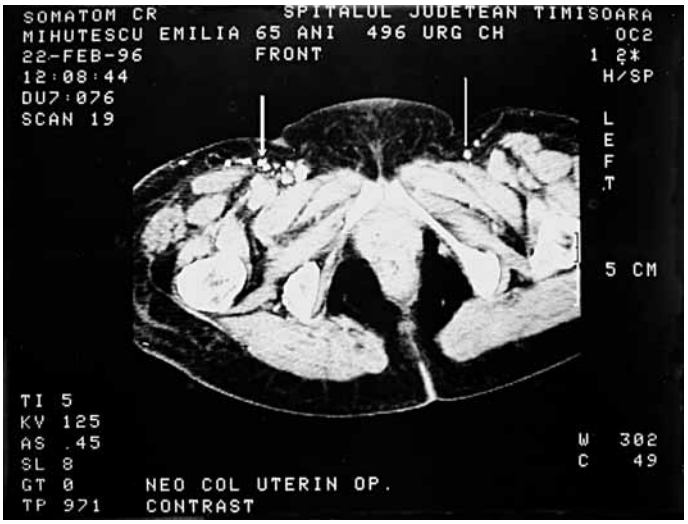

Fig. 2 – Axial CT image (scan 19) of the base of the inguinal triangle (Scarpa's triangle) of a patient with secondary lymphoedema of the right inferior limb, after lymphography (KINMONTH), day two; on the left side – opaque lymph trunks – collateral circulation (thin arrow) and numerous opaque lymph vessels in the limb with lymphoedema (thick arrow).

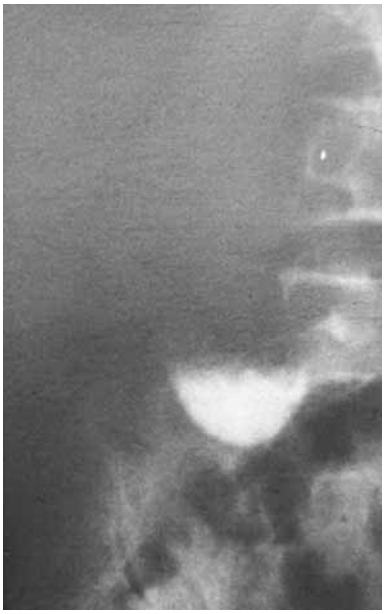

Fig. 3 – Radiograph of a patient with limy bile, standing: the superior edge of the spontaneous radio-opaque image is horizontal.

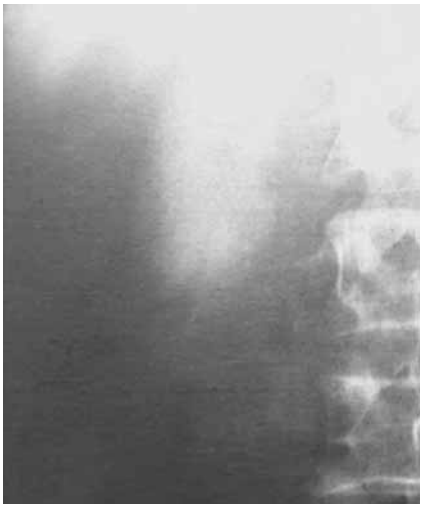

Fig. 4 – Abdominal radiograph of the same patient, standing: a milder change of shape and opacity of the gallbladder.

Examination of the harvested tissue showed a hypotrophy of the gallbladder wall, thin and with parietal fibrosclerosis. Its content had a whitish colour and a paste-like consistence (in 8 patients cholesterinic stones were found in the mixture). After a few days, this gallbladder content became solid, keeping on the surface the imprints of the sponge it has been kept in. The chemical analysis found calcium carbonate in between 61 to 92%, 9-21% cholesterol, 1.1-2.8% pigments.
In the last 5 years, in 4 patients with gallbladder cancer and cholesterinic lithiasis we have explored the lymphatics of the gallbladder during surgery in 1 patient and after surgery in 3 cases (colecystectomy). We injected 0.1-0.2 ml of 2% patent blue V into the gallbladder submucosa; the colouring of the lymphatic collectors on the peritoneal side were followed beneath the submucosa membrane. In 2 cases the lymphatic vessels were interrupted at the basinet level, and in the other 2 cases the lymphatic aspect was normal (Fig. 5).
The microscopic examination of the gallbladder wall in the basinet region, beneath the tumour, showed tumoral embolus (Fig. 6).

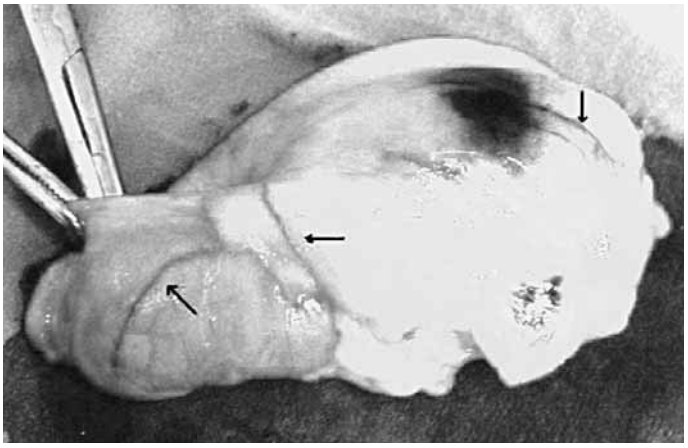

Fig. 5 – Postoperative image of the gallbladder – intraparietal injections of patent blue V, in a patient with neoplasm of the neck of the gallbladder, showing coloured subserous lymph vessels.

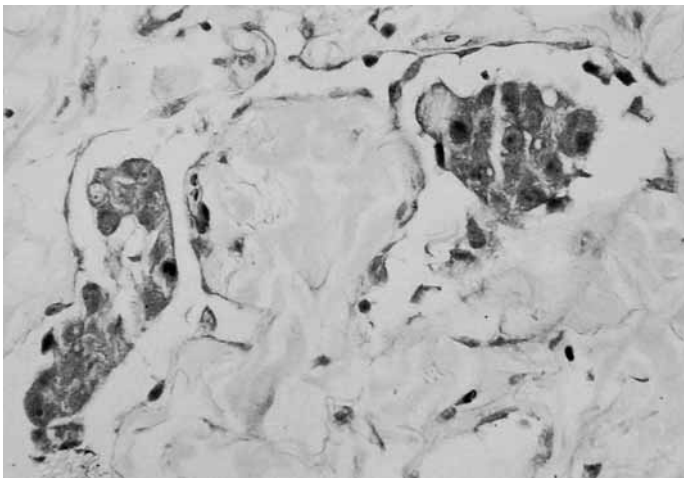

Fig. 6 – Pathology examination (HE staining) - tumour embolus in the lymph vessels of the gallbladder (the same patient as in Fig. 5).

DISCUSSION

Among the 12 cases with calcic gallbladder stones in our statistic, 7 had a history of cancer outside the hepathobilliary tract, from which 5 with secondary lymphoedema: 3 in the lower limb and 2 in the upper limb. We can not suspect that cancer and/or secondary lymphoedema of the extremities were implicated in the formation of the calcium gallstones. These syndromes (secondary lymphoedema and calcic stones) have been developed following strictly local and independent conditions such as disturbances in the eviction of the gallbladder content in the presence of hypotrophic parietal fibrosclerosis. The continuous supply of fresh hepatic bile to the gallbladder is essential (7, 11); stasis and resorbtion of billiary constituents facilitated the alcalinisation and precipitation of calcium carbonate (9). These processes supply the needed amounts of CO_3H^- and Ca^{2+} to the synthesis of $CaCO_3$, while stasis and resorption inside the lumen generate the appropriate pH (pH 8-8.2). The lymphatic structures of the gallbladder participated trough physiologic macromolecular resorption processes (proteins, lipids-cholesterol, salts, pigments etc.) so that the calcium bicarbonate deposit remained white, and while concentrated, grew in volume and consistency until the complete filling of the gallbladder, a development from the gallbladder became functionally excluded. The accumulation of this sediment can be accomplished in the absence of any inflammatory processes, frequently without any clinical signs (inflammation acidifies the gallbladder content), with the dyspeptic manifestation starting after colecystectomy.

The frequency of biliary neoplasm is low compared to that of gallstones (3, 6). The presence of generalised lymphatic stasis generated by an obstacle located in the gallbladder lymphatic ducts, as is the case of malignant tumour, can lead to the onset of gallbladder symptoms in a lithiasic colecyst. In these cases, echography will usually show a gallbladder with normal volume, a thickened wall at the tumour site and the presence of stones with posterior shadow cones.

The symptoms did not disappear under antispastic treatment, but under pain medication. In the fourth case of our study concerning the lymph vessels of the gallbladder (a malignant tumour, located in Hartmann's pouch), intraoperatively, 0.1 mL of a 2% solution of patent blue violet dye was injected under the serous membrane of the gallbladder, intending to identify the sentinel lymph node. In the presence of a malignant tumour on the liver side of Hartmann's pouch, acting as an obstacle for the lymph flow, the coloured lymph trunks showed the collateral retrograde circulation (Fig. 5). The pathology examination identified malignant emboli within the collector lymph vessels (with valves).

The Mascagni lymph nodule adenopathy (infiltrated by neoplasm) was insignificant. The lymphatic stasis was generated by the obliteration of the lymphatic duct and adenomegaly determined a local parietal thickening on ultrasonography. In this case, after extemporaneous microscopic examination, the Mascagni adenopathy turned up to be a sentinel lymph nodule.

It is hard to say if when the lymphotropic dye was injected under the serous gallbladder membrane after colecystectomy (3 cases), the dye was absorbed inside the lymphatics or went directly in the stasis lymphatic network through "blind" puncture.

At a visceral level, the large lymph-producing organs (liver, intestine) can determine stasis episodes inside low-debit lymphatic networks: gallbladder lymph stasis in congestive heart failure (together with the cardiac liver), hepatic cirrhosis with ascitis (Fig. 7), in pancreatic diseases (chronic pancreatitis or acute pancreatic reactions) etc.

The processes of bile reduction during the stationary period inside the colecyst are accomplished mainly through water absorption from the lumen in proportion of 90%. If only 10% of the water absorbed in this manner is following the lymphatic pathways similarly with other part of the body (5), then at 1.5 litres of bile received from the liver in 24 h, 150 ml are being absorbed inside the lymphatics. This represents 5% from the thoracic duct lymph at an average of 3l/24h, almost equal to to the lymph amount that comes from one lower limb in the same period of time at rest (1, 8). During the bile concentration processes, the vascular and lymphatic microstructures induce differences depending on the bile component molecular weights and on the micelar interrelations in progress on the extra hepatic diverticular structures level. Together with changes in pH inside the gallbladder, all these processe maintain or generate the stability or

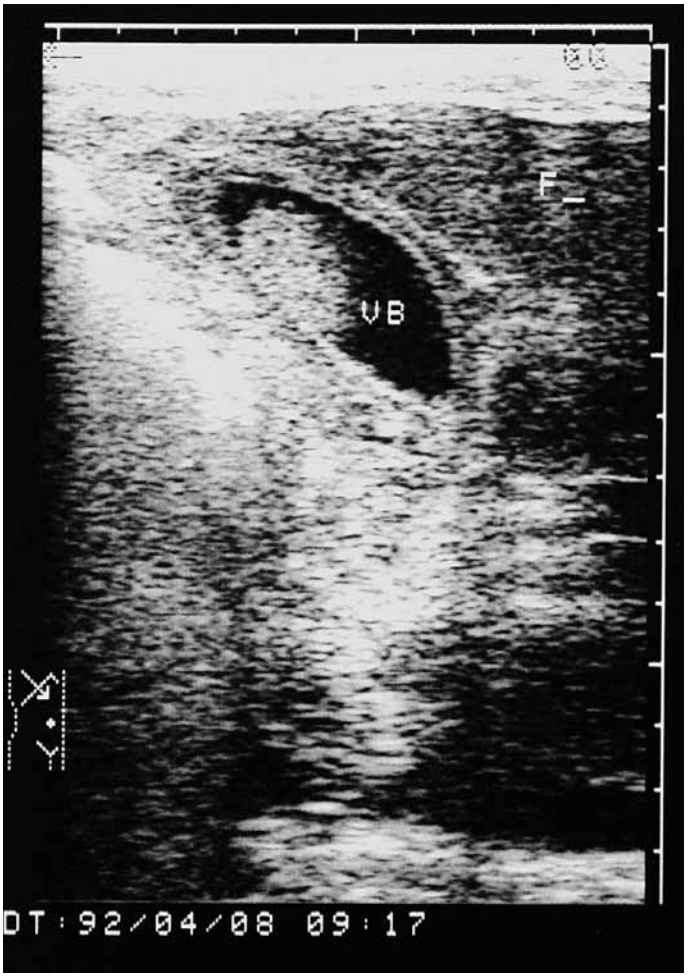

Fig. 7 – Ultrasound examination, showing a gallbladder with thickened wall due to the inflammatory oedema of the wall.

instability of the micelar medium. It has been stated that a pH lower than 8 (9) is necessary mainly to prevent the instantaneous precipitation of $CaCO_3$, concomitantly with the synthesis processes.

Under normal circumstances, proteins from the colecystic bile would average 4.5g/l, versus 1.8g/l in the hepatic bile. In the absence of protein resorbtion from the colecystic bile (hypothetical), after a five time reduction of the water content, proteins would rise to 9 g/l and to 18 g/l after a ten times water reduction. Therefore we appreciate that $^1/_2$ to $^2/_3$ of the bile proteins are being resorbed in the gallbladder mucosa, then taken over and transported exclusively on the lymphatic pathway, the same as any macromolecule.

In the presence of inflammatory processes, a hyperproteinic, hyperoncotic oedema is being developed in the gallbladder wall and can disturb the water resorbtion process. This leads to the increase of lymphatic circulatory chores, both mandatory (macromolecules) or facultative (water, electrolytes) and has implications on the immunological level. The clinical colecystic signs start together with inflammatory processes surpassing the local defence inflammatory threshold. Mitigation of clinical symptoms can be accompanied by degenerative parietal changes (hypotrophy or even wall calcification – 'porcelain gallbladder') and/or litogenetic conditions in the lumen. An obstacle at the cystic level will cut off the supply of hepatic bile to the gallbladder. In due time, the gallbladder content can be totally resorbed until reaching the colourless bile aspect – hydrocolecyst (must not be confounded with the "limy bile").

CONCLUSIONS

The limy bile is a rare form of gallbladder lithiasis consisting in the accumulation of calcium carbonate inside the gallbladder up to more than 60% of the whole content. This will determine radioopacity of costal intensity of the colecyst. The literature comprises less than a thousand cases of limy bile, from which 400 in Japan, about 100 in France, 20 in Romania from which 12 in Timisoara (I.O. Rada). We appreciate that these statistical data are incomplete and it is likely these cases are much more common. The preoperative diagnosis is difficult without an abdominal plain x-ray. Echography has only a presumptive value in these cases. A postoperative diagnosis demeans minimal knowledge about this form of lithiasis.

Apparently, the syndrome can seem unimportant. The pathogenic peculiarities reveal in detail the cholesterolic lithogenesis together with data on the lymphatic functions of the gallbladder and the implications of these particularly rich vascular structures in lithogenesis.

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REHABILITATION AFTER SENTINEL NODE BIOPSY IN BREAST CANCER TREATMENT

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ABSTRACT

The sentinel node technique in breast cancer treatment aims to identify tumour's drainage pathways, if this procedure is negative for metastatic disease, the standard axillary lymph node dissection is spared.
However the rehabilitation program will no differ from mastectomy and axillar lymphadenectomy because there are not differences in morbidity at short term.
In this way, at the first moment after mastectomy, rehabilitation must consist in pain management and early, not immediate, mobilisation of the shoulder joint, improving range of motion until patient's tolerance.
The most frequent problems in a rehabilitation unit are lymphedema and shoulder pain. The incidence of lymphedema has been reduced significantly in patients after sentinel node technique alone, even though it has not disappeared.
The shoulder pain is often related with the strain in the pectoral muscle after surgery or rotator cuff tendinitis but metastatic disease in the shoulder has to be discarded as a cause of shoulder pain.
Arm pain, weakness, tingling breast and tingling arm are other symptoms reported after surgery, and their incidence in the literature between sentinel node technique alone and axillary's lymphadenectomy is compared along this article.

KEY WORDS: sentinel node biopsy, rehabilitation, morbidity, lymphedema, breast cancer.

INTRODUCTION

For a century, axillary dissection has been a mandatory component of the surgical treatment of breast cancer (1). However, in the last decade, the observation that the dissection often reveals non-involved lymph nodes, due to the fact that primary breast carcinomas are treated much earlier than in the past (2), has led to the search for a preoperative test to identify patients for whom axillary dissection may be avoided (3). While imaging procedures are, at present, not yet effective in making a preoperative diagnosis of axillary lymph node metastases, the technique of sentinel node biopsy has shown favourable results. Recently, published randomised trials (4,5), suggest that sentinel node biopsy should become a routine procedure in all centres dealing with breast cancer management. Although, a routine sentinel node programme needs a high level of competence and a sufficient training programme among members of the Surgical Department, the Nuclear Medicine Department and the Pathological Department. Sentinel node biopsy performed after adequate training and experience is likely a safe procedure in terms of local recurrence, but the definitive results will come from ongoing trials (6).
One of the greatest advantages of sentinel node biopsy is the low incidence of local post-operative complications as documented in several studies (7). By contrast, total axillary dissection is associated with significant post-operative pain and limitations in arm motion are common (8). Apart from the improved quality of life, another advantage of sentinel node biopsy is its lower costs because of the reduced operative time involved and the possibility of performing the operation on an outpatient basis under local anaesthesia, without axillary drainage (9).
We expose the rehabilitation program after surgery and the most common problems in a rehabilitation unit, comparing their incidence reported in the literature between sentinel node technique alone and axillary's lymphadenectomy.

EARLY POSTSURGICAL REHABILITATION

Despite the intention to reduce morbidity with sentinel node biopsy and conservative surgery, this does not occur at short term. Comparing the early morbidity after the sentinel node technique and axillar lymphadenectomy, Rietman (10) found a significant decrease in the range of mobility of the shoulder, muscular strength, grip strength, pain, circumference of the arm, disability, and daily life activities at 6 weeks after surgery, but no differences were found between the two procedures. That's why the rehabilitation program after sentinel node biopsy will no differ from mastectomy and axillar lymphadenectomy rehabilitation

program even though an earlier recovery of the range of mobility is expected and must be adapted to the patient.
The most common problems in rehabilitation (11) in the first month after mastectomy are: chest wall rigidity, difficulty in lifting the arm, weakness arm, lymphedema and numbness. These symptoms affect activities of daily living. Shoulder mobility and upper limb strength are negatively influenced by surgical extension, radiotherapy dosage and postoperative pain. Pain must be treated with drugs and physical therapies, hot or cold, and early, not immediate, mobilisation of the joint.
After surgery, early physical therapy has shown to improve shoulder range of motion, and late physical therapy has been associated with a poor range of motion. Active mobility has to be performed only when drainages are removed.
In the first day post-surgery, the recommended range of motion, inpatient, includes internal and external rotation until tolerance (12). Others allow 40º of abduction and flexion of the shoulder immediately after surgery or pendular exercises (11). Inmediate rehabilitation can consist in:

- Hand pumping;
- Respiratory exercises;
- Postural correction: to avoid spoil postures as flexion and rotation;
- Isometric exercises;
- Exercises of hand, wrist and elbow;
- Abduction of the shoulder until 40º and rotations until tolerance.

Until day 4, flexion and abduction of the shoulder of 40-45º are allowed. From 4th to 6th day, the flexion must reach 45 to 90º, but the abduction has to be limited to 45º. After that, the range of motion has to be limited to patient's tolerance.
Inmediate mobilisation has been associated with a higher lymphatic drainage, and complication of surgical wound. When healed it is not necessary to limit functional activity. When drainages have been removed the range of active mobility can be increased, and stair exercises can be started. Pulley overhead exercises, even during recumbency are useful to give scapular support when the anterior serratus has been damaged.
Transient weakness of the scapular girdle can occur. Isometric exercises with elastic bands are recommended. When the stitches are removed we will increase the range of mobility.
The patient must learn the massage of the operated area to obtain an elastic scar, to avoid its adherence to deep tissues; it can be started at the first month after surgery. The application of silicone gel on the scar can be useful in preventing hypertrophic scar (13,14).
It is necessary to teach the patient the exercises that have to be performed at home during 2 years.

PROBLEMS IN REHABILITATION AFTER SURGERY

After surgery, patients can develop some complications at short or long term such as lymphedema, shoulder pain and sensory symptoms.

1. Lymphedema

Lymphedema, described as abnormal accumulation of protein rich fluid, due to lymphatic disfunction is a common and disabling sequela after breast cancer treatment.
Recently, more attention has been taken in modifying cancer therapies in order to minimise lymphatic compromise. The use of sentinel node technique is a good example of surgical procedure to preserve the lymphatic function (15).
The incidence of lymphedema has been reduced significantly in patients after sentinel node technique alone, although it has not disappeared (Table 1).
Comparing to axillar lymphadenectomy alone or performed after sentinel node biopsy, lymphedema happens only in 3 to 6% of the patients after sentinel node technique alone.
Despite the first studies showed an incidence of lymphedema of 0% after sentinel node biopsy alone (16,17), other studies report an incidence between 3 and 6% of lymphedema after sentinel node biopsy alone (18,19,20,21). After lymphadenectomy, performed alone or after a sentinel node technique with positive nodes, lymphedema presents in 17 to 35% of the patients (18,21,22,23).
Moreover, Blanchard in his descriptive study with 683 patients with sentinel node biopsy, showed that only 0.6% presented a severe lymphedema, compared to 9% after lymphadenectomy (21).
Adjuvant radiotherapy administration was not related to lymphedema (21).

Table 1: Studies repor'ting lymphedema incidence after sentinel node biopsy.

Author	Follow up (months)	Axillar lymphadenectomy*	Sentinel node biopsy*	Both*	*p* value
Schrenk[16] (2000)	15,4	14/35 (40%)	0/35 (0%)		
Roumen[17] (2001)	24		0/100 (0%)		
Sener[18] (2001)	24	5/72 (6,9%)	9/303 (3,0%)	20/117 (17,1%)	0,0001
Meric[19] (2002)	89	39/260 (15%)	1/34 (2,9%)		0,05
Golshan[20] (2003)		13/48 (27%)	2/77 (2,6%)		0,05
Blanchard[21] (2003)	39		39/683 (6%)	31/91 (34%)	0,001
Silberman[35] (2004)	12	7/90 (7,8%)			
Langer[22] (2004)			0/40	10/59 (16,9%)	
Armer[23] (2004)	20,4	29/67 (43,3%)	2/9 (22,2%)	3/12 (25,0%)	0,37

(*) Number of patients (percent).

The Purushotham's randomized controlled trial aim to compare physical and psychological morbidity after standard Axillary lymph node dissection (ALND) and Sentinel lymph node biopsy (SLNB) in early breast cancer surgery. He found a smaller volume increase in ipsilateral arm in SLNB group with a reduction of 70% in the odds of subjective lymphedema (24).

As we see in the studies of the authors mentioned in the Table 1, lymphedema in the ipsilateral arm is considerable decreased when the sentinel node biopsy alone is performed because the most important risk factor is avoided. The most important limitation of these studies to assess lymphedema incidence is the time of follow-up. Despite 97% of the patients that develop lymphedema do it during the first 4 years after treatment (25), it can appear 30 years after surgery, and all the studies are performed at short-term follow up.

Moreover the different methods used to assess lymphedema makes difficult the data comparison: subjective sensation of swelling, measurement of circumferences in one point or in 4 points… There is a lack of consensus in measurement method. In our unit, we take perimeters each 4 cm in the upper limb and we calculate the volume by Kunhke formula. By subtracting the healthy arm volume we obtain absolute edema.

The frequency of breast lymphedema has also decreased with sentinel node technique, according to Ronka (26). Assessed by ultrasonography of the breast one year after conservative surgery, 28% of the patients after sentinel node biopsy alone presented breast lymphedema, and 70% of the patients after lymphadenectomy ($p<0.05$).

2. Painful Shoulder

Immediately after surgery especially when a post-surgical rehabilitation program has not been performed, patients can complain of pain and mobility restriction of the shoulder. The most common reason for this limitation is the strain in the pectoral muscle that occurs in 33% of the patients regardless of the type of surgery performed (27). It produces a decrease in flexion, abduction and rotations of the shoulder.

When a breast cancer patient complains of shoulder pain in a rehabilitation unit, it is mandatory to discard malignancy, even though the most common diagnose is degenerative disease of rotator cuff. Image techniques as Magnetic Resonance are useful in diagnosis. Subacromial bursitis, supraespinatus tendinitis, or tears, and acromio-clavicular hypertrophy are frequent in women at this age.

The usual rehabilitation treatment includes electrotherapy and kinesitherapy. However all the modalities of electrotherapy with deep heat, as ultrasounds or short-wave, include malignancy between its contraindications due to its electromagnetic effects in tumour growth (28,29), despite the lack of studies that really support the specific risk in already treated cancer patients.

The use of superficial heat, active assisted mobilisation, kinesitherapy and cold therapy is safe and can relief the pain and improve the range of motion.

3. Other Symptoms

The incidence of sensory morbidity has been reduced significantly in patients after sentinel node technique alone, versus axillary lymph node dissection in patients with breast cancer. Ververs JM et al. in 2001 studied 400 women, who underwent ALND as part of breast cancer surgery, and they filled out a treatment-specific quality of life questionnaire. More than 20% of patients reported pain, numbness, or loss of strength and 9% reported severe edema. None of the complaints appeared to diminish over time (30).

Despite some studies don't find any differences between sentinel node technique and axillar lymphadenectomy in stiffness and strengh in the affected arm (16,27,31), most studies report a smaller morbidity after sentinel node biopsy alone (Table 2).

Although Temple et al. reported that sensory morbidity (discomfort, paresthesias and piercing) was present after SLNB and ALND, this was significantly more common after axillary dissection. A significant improvement in sensory morbidity occurred in the first 3 months for both groups, with no further change thereafter (32).

According to Schijven et al. after sentinel node biopsy patients have a 3.2-fold lower risk of experiencing pain, a 5-fold lower risk of lymphoedema, a 7.7-fold lower risk of numbness, a 3.7-fold lower risk of tingling sensations, a 7.1-fold lower risk of loss of strength in arm/hand, a 3.6-fold lower risk of loss of active motion range of the arm and a 2.9-fold lower risk of impaired use of the arm (33).

Table 2: Other symptoms after sentinel node biopsy versus lymphadenectomy.

Symptoms	Surgical procedure	Schrenk [16] 2000	Temple [32] 2002	Blanchard [21] 2003	Ronka [27] 2005
Pain	SLNB	2/35 (5%)	43/171 (25%)	95/681 (14%)	12/43 (28%)
	ALND	16/35 (45%)	24/62 (39%)	35/91 (38%)	21/40 (52%)
Weakness	SLNB				8/43 (19%)
	ALND				17/40 (52%)
Tingling breast	SLNB				12/43 (28%)
	ALND				23/40 (58%)
Tingling arm	SLNB		61/171 (36%)		3/43 (7%)
	ALND		9/62 (15%)		23/40 (58%)

SLNB: Sentinel lymph node biopsy; ALND: Axillar lymph node dissection.

Schrenk et al. prospectively compared subjective lymphedema, pain, numbness, effect on arm strength and mobility, and stiffness after ALND and SLNB. He found a significantly higher rate of subjective lymphedema, pain, numbness and motion restriction after ALND, however, no differences were found regarding arm stiffness or arm strength between both procedures (16).
Swenson et al. reported that the patients who had undergone SLNB had significantly less pain, arm swelling, arm numbness and tingling, limitation in arm and shoulder movement, than patients after ALND one month after surgery (34).
According to Armer et al., the proportion of women who experienced lymphedema-related signs and symptoms was higher among women who underwent ALND versus SLNB (23). However, numbness and tenderness were frequent symptoms after breast cancer surgery with independence from lymphedema.
Purushotham et al. found significantly fewer sensory findings (numbness, loss of sensitivity and paresthesia) in SLNB group, with a 60% reduction in the odds of paresthesia (24). But this difference was attenuated when adjusted for preservation of the intercostobrachial nerve during the axillar lymphadenectomy.
Less attention has been paid in the prevention of postmastectomy pain. Postmastectomy pain syndrome is a common sequela of breast cancer treatment that is suffered by 10% to 30% of patients after breast surgery, axillary lymphadenectomy or conservative surgery. They complain of persistent burning pain in the chest wall, axilla and arm that can start the first month after surgery (29). It is usually due to injury to the intercostobrachial nerve but this is only one of the four cutaneous nerves that cross the axilla and can be damaged by axillary dissection, including the medial brachial cutaneous and branches of third and fourth intercostals nerves that are imbedded in the axillary adipose tissue superficially (21). When this nerve is preserved during surgery postmastectomy pain can be prevented.

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THE INFLUENCE OF NON-ELASTIC TIGHT-FITTING CLOTHES ON VENOLYMPHATIC CIRCULATION

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ABSTRACT

Fashion designers create many styles of clothes, but do not always take into account the physical repercussions of their use. The aim of the present study was to evaluate the pressure exerted by tight-fitting jeans on the legs during daily activities and to warn about the risks of the use of tight-fitting clothes.
Resting and working pressures were evaluated in 30 women, with ages ranging from 18 to 46 years and a mean of 32 years, who used tight-fitting jeans. A sensor was placed in the anterior and medial regions of the thigh between the skin and the jeans and data were collected using an apparatus fixed on a belt. The women were requested to walk normally, to run, to lift up the legs and to go up and down stairs at a normal speed and running.
The tight-fitting jeans cause working pressures that change with the muscle activities.
Tight-fitting non-elastic jeans cause constant pressures when motionless and pressure peaks during exercises depending on the muscle activities of the thigh and are prejudicial to the venolymphatic return. Thus, the type of clothes to be used should be carefully assessed as they may be harmful to blood circulation.

KEY WORDS: Non-elastic pants, working pressure, fashion, clothes, circulation, jeans.

INTRODUCTION

Fashion designers create many styles of clothes, but do not always take into account the physical repercussions of their use. One of the effects of tight-fitting jeans is on the venolymphatic circulation which is also affected by the effects of the gravitational pressure. Our organism utilizes muscle contraction and a valve system as a type of pump to assist the venous and lymphatic return (1). The contraction of the leg and thigh musculature, including the calf muscles, creates pressure variations of from 100 to 300 mmHg in the venous system which assists the blood to return to the heart during day-to-day activities (2).
Clothes can interfere in the venolymphatic system making the flow of the blood back to the heart difficult. However, there seems to be no studies published in PUBMED evaluating this interference.
The objectives of the present study were to evaluate the influence of the pressure between the jeans and the skin during daily activities of people wearing tight-fitting jeans and to alert about the risks involved in using tight clothes.

METHOD

Resting and working pressures were evaluated in 30 women wearing tight-fitting jeans with ages ranging from 18 to 46 years old and a mean of 32 years. An apparatus at Braile Biomedica of São José do Rio Preto was developed, with the aim of dynamically measuring of working pressures at half-second intervals. A sensor was placed on the leg in the anterior and medial regions of the thigh between the skin and the jeans and data were collected using the apparatus fixed on a belt. The women were requested to walk normally, to run, to lift up the legs and to go up and to down stairs at a normal speed and running.
After data collection the information was transferred to a computer program for analysis.

RESULTS

Tight-fitting jeans cause resting pressures during all evaluations depending on the fit of the jeans in each case. Pressure variations occurred with muscle activities (working pressures) and varied

according to the initial resting pressure and the type of muscle activity. Walking, a normal daily activity, creates significant working pressure variations (Figure 1).

DISCUSSION

The present study shows that tight-fitting jeans can harmfully interfere in the lymphovenous circulation both during rest and movement. Tight-fitting jeans produce working pressures in the thigh muscle similar to those observed using non-elastic bandages on the legs. This causes pressure peaks both opposing and in favor of venolymphatic return during activities that involve the thigh musculature. High working pressures, as were observed in the thigh, can cause stress on the venous valves and on the lymphatic system, predisposing these systems to injury, stimulating the development of edema, varicose veins and cellulitis. The consequences of these lesions may not be immediately obvious as in the case of edema, but over the long term dilatation of the vessels can evolve, progressing to varicose veins. The chronic use of tight-fitting jeans can eventually be the basis of greater and irreversible consequences to the functioning of these valves.
Non-elastic clothes produce greater working pressures during muscle activities and thus these clothes are more damaging as they obstruct the venolymphatic return.
This study warns about the use of tight-fitting clothes which are not always beneficial to the heath and aims to bring this warning to the attention of fashion designers.
It is important to stress that fashion is part of people's life and the possibility of causing harmful effects must be evaluated. However, no reports on the dynamic evaluation of the venolymphatic circulation in respect to fashion were found during an investigation of scientific publications.
New studies assessing the interference of clothes on the circulation are important to help to decide on which type of clothes should be used, mainly in respect to patients who already present with circulation problems. The type of activity practiced by people who use tight-fitting clothes must also be analysed, because activities that produce more abrupt movements of musculature of the thigh cause higher working pressures which may be very harmful to the venolymphatic system.

CONCLUSION

Non-elastic tight-fitting pants can cause constant pressure when the leg is motionless and pressure peaks during muscle activities and are harmful to venolymphatic return. Thus, the type of clothes to be used must be analysed so as not to impair the blood circulation in the leg.

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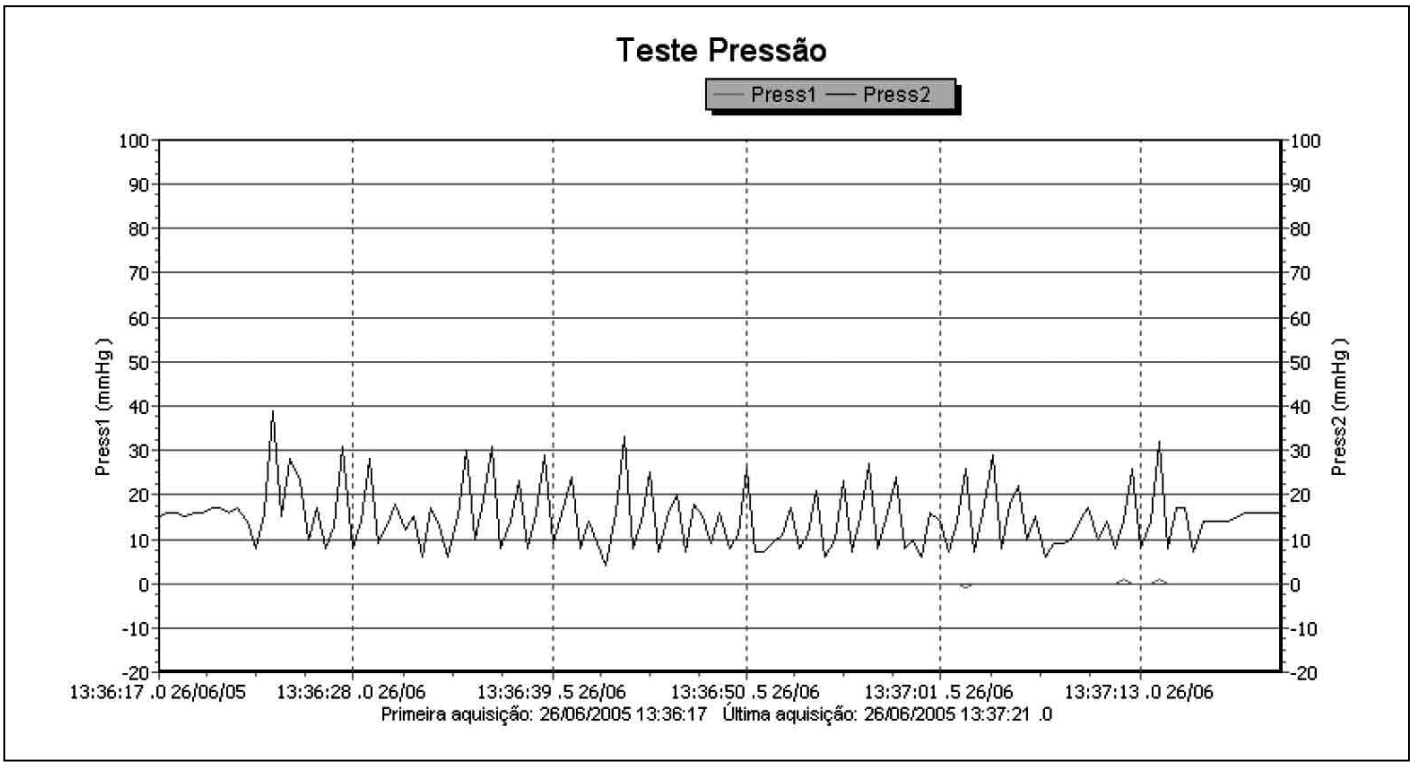

Figure 1: Initial resting pressure (15 mmHg) of tight-fitting jeans and the variations in the working pressures during walking of from 7 to 39 mmHg.

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ROLE OF HIVAMAT® (DEEP OSCILLATION) IN THE TREATMENT FOR THE LYMPHEDEMA OF THE LIMBS

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ABSTRACT

Background. The important goals achieved by biomedical technologies led us to search for new mechanisms for the treatment of he lymphatic pathologies. The aim of this study is to examine a new instrumental physiotherapeutic method which makes use of intermittent electrostatic fields with deep oscillation.

Materials and methods. HIVAMAT® 200 acts on the connective tissue with pulsing electrostatic fields which produce a deep resonant vibration of the tissues involved. By repeating this process in swift succession tissue deformations are caused. This allows fibre and tissue layers to regain motility and flexibility. On the basis of these remarks we conducted a clinical and instrumental study in order to check its efficacy in treating lymphedema of the limbs. From May to December 2005, 20 patients affected by lymphedema of the limbs underwent HIVAMAT® 200 treatment wearing II class compression garments.

Results. The results obtained in 20 patients confirmed that this method can play an important role in the treatment of such a complex disease. We achieved a remarkably significant reduction in the circumference of the limbs and in the subcutis thickness.

Conclusion. The advantage of HIVAMAT® 200 lies in the combination of electricity and several manual massage techniques which improve the treatment quality and efficacy. Moreover, due to its potential for self-treatment, patients can undergo treatment at home.

KEY WORDS: Lymphedema treatment, Intermittent electrostatic fields with deep oscillation.

INTRODUCTION

Lymphedema is a chronic and progressive disease which may lead to disability from a physical, functional and psychological point of view. For this reason, it requires a targeted intervention, an early diagnosis and a comprehensive follow up care. The crucial difference between lymphedema and other vascular edemas is due to its constant fibrosis progression. This is because lymphedemas have a higher protein concentration which is responsible for the inflammation chain activation (1).
From a clinical point of view, the more the inflammation element is present, the more connectivization and therefore fibrosis may occur.
The definition of the causes of the lymphatic disease and its evolution state are also crucial elements to take into account in order to determine the therapy timing and methods (2,3). From the rehabilitation perspective, this makes use of well-proven physiotherapeutic techniques which have been tested by numerous clinical studies carried out in university departments as well as in the medical field (see guidelines CIF-2004 and CONSENSUS DOCUMENT ISL-2003) (4,5,6,7). These physiotherapeutic techniques are commonly referred to as "Complex Decongestive Physiotherapy (CDP) of the lymphedema which consists of 2 phases and it is based on compression bandages and decongestive exercises (8,9).
The aim of this study is to examine a new instrumental physiotherapeutic method which employs intermittent electrostatic fields with deep oscillation. HIVAMAT® 200 acts on the connective tissue with pulsing electrostatic fields which produce an intense resonant vibration of the tissues involved. The mechanism is made up of a semiconductor layer and a minimal electrostatic field set up between the therapist's hands and the patient's tissue. The repetition of this phenomenon in quick succession generates rhythmical deformations of the tissue which is pumped through in its entire depth. This action allows fibre and tissue layers to regain motility and flexibility and improve tissue nourishment thanks to an increase in ATP production.
HIVAMAT® 200 acts mainly on intercellular circulation of the interstitial connective tissue. Treatment results in a normalization of the fluidity of circulation.

MATERIALS AND METHODS

From May to December 2005, 20 patients affected by lymphedema of the limbs underwent treatment by HIVAMAT® 200 combined with II class elastic stockings.
There were 16 females and 4 males aged between 30 and 60.
HIVAMAT® 200 was applied following the procedures of manual lymph drainage (MLD). This consists in the preparation of the central and peripheral lymph node stations and then the successive drainage to lymph centres following the ways of lymphatic flow with a specific focus on the areas of major lymph accumulation. Treatment lasted 30 minutes and it was carried out twice a week. Each treatment was subdivided into 2 phases: initial medium-high frequency (25-80 Hz, 80-200 Hz) was aimed at softening the indurated tissue and stimulating the transportation of liquids whereas low frequency (25-80 Hz) acted as a strong pumping effect which allowed an effective interstitial drainage. After treatment the elastic stocking was applied on the affected limb.

The clinical conditions and the ecographic examination made by *PHILIPS iu22* were a part of the study inclusion criteria (10).
Measurements of the circumference of the limbs were taken at 3 precise levels: above the ankle, at the upper 1/3 of the leg and at the upper 1/3 of the thigh. Such levels were also determined in each patient by considering the height from the ground in order to have a constant and precise level of measurement.
Ecographic examination was performed at the same levels in order to evaluate subcutis morphology and thickness before and after treatment. This allowed as to evaluate qualitative modifications of the edema such as its state of subcutis connectivization and the presence of fluid lymph accumulation.
Moreover, all patients who were under edema specific or non-specific pharmacological treatment were excluded from the study. On the other hand, patients who had finished complex physical treatment about 40 days earlier were included in order to not evaluate patients that could have had long-term benefits after intensive treatment.

RESULTS

Variations of the circumferences, the subcutaneous thickness as well as qualitative variation in the subcutis layer affected by lymphedema were clinically and ecographically evaluated in these 20 patients after an eight-week course of HIVAMAT® 200 treatment. Treatment was also combined with compression stockings which are known to not influence significantly edema progression.
Before treatment the measurement of the circumference of the lower 1/3 of the leg ranged between 22.0 and 32.0 cm with a 25.9 cm average.
After treatment this average was down to 24.9 cm ranging from 21 to 34 cm.
This 1 cm average reduction was highly significant according to the t student test ($p< 0.001$).
At the upper 1/3 of the leg circumferences ranged between 36 and 45 cm with a 39.3 cm average. At the end of the therapeutic cycle results ranged between 35 and 44 cm with a 38.4 cm average. According to the t student test this difference was remarkably significant
At the upper 1/3 of the thigh circumferences ranged between 57 and 75 cm before treatment with a 63.6 cm average. After an eight-week course of treatment the average was 62 cm ranging between 55.5 and 73.5 cm. *(Table I)*
Ecography was carried out at the same level where circumferences were measured, that is, in the medial upper and lower 1/3 of the leg and the upper 1/3 of the thigh.
Measurements of the subcutis thickness at the lower 1/3 of the leg ranged between 3.50 and 5.09 with a 4.12 cm average. After treatment this value decreased to 3.97 cm ranging between 5.41 and 3.34 cm. This difference was also significant ($p< 0.001$).
At the upper 1/3 of the leg the subcutis thickness ranged between 5.73 and 7.16 cm with an average of 6.26. After treatment it decreased to 6.14 cm ranging between 5.57 and 7 cm. This difference was not found to be significant.
The final measurement of the subcutaneous thickness was taken at the upper 1/3 of the thigh. The average value of the initial thickness was 9.86 (range 8.83-11.7) and at the end of treatment this was reduced to 9.67 ranging between 7.95 and 11.3 cm. These results were remarkably significant ($p< 0.001$). *(Table II)*
The aim was to undertake a qualitative evaluation of the subcutaneous layer conditions as well as the dominant feature, such as edema, presence of lymphatic lakes associated with the presence of lymph at the subcutaneous layer, fibrosis and sclerosis. In all cases a substantial reduction of the fibrotic component and the sovrafascial edema (if any) was observed. From a clinical perspective, this result revealed the presence of a tender edema. At the end of the study, this allowed us to provide patients with new intensive treatment where no side effects were observed, neither initially nor subsequently in the use of this machine. (Photo 1 - 2).

Table 1 - Measurement of the circumferences of the limb.

SEGMENT	Mean Average before treatment *(cm)*	Average post treatment *(cm)*	Range before treatment *(cm)*	Range post treatment *(cm)*
Lower 1/3 leg	25,9	24,9	22,0 - 32,0	21,0 - 34,0
Upper 1/3 leg	39,3	38,4	36,0 - 45,0	35,0 - 44,0
Upper 1/3 thigh	63,6	62,0	57,0 - 75,0	55,5 - 73,5

Table 2 - Measurement of the subcutaneous thickness.

SEGMENT	Mean Average before treatment *(cm)*	Average post treatment *(cm)*	Range before treatment *(cm)*	Range post treatment *(cm)*
Lower 1/3 leg	4,12	3,97	3,50 - 5,09	2,1 - 3,5
Upper 1/3 leg	6,26	6,14	5,73 - 7,16	5,57 - 7,00
Upper 1/3 thigh	9,86	9,67	8,83 - 11,7	7,95 - 11,3

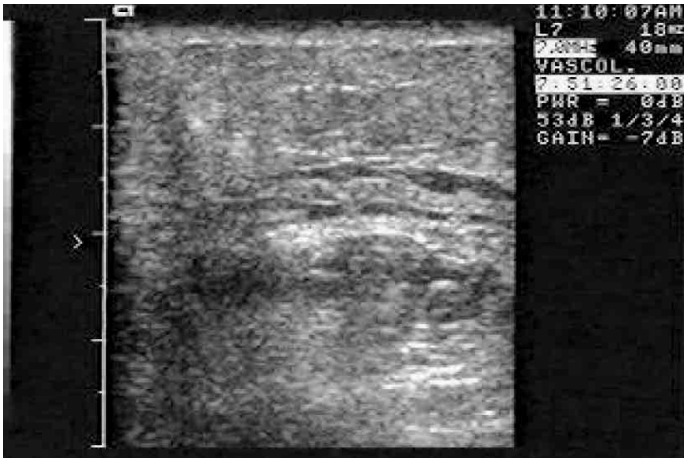

Photo 1. Ecographic window of a limb with lymphedema with evident connectivization and presence of lymphatic lakes.

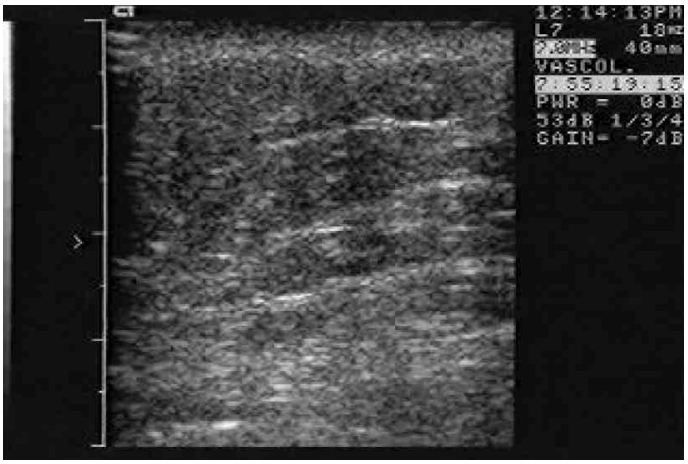

Photo 2. Same "ecographic window": evident reduction in the lymph accumulation and connectivization.

DISCUSSION

Based upon out research results it is evident that in the case of lymphedema, no definite clinical resolution of the disease can be expected. However, there is a clear improvement in the objective and subjective parameters and this aim was accomplished with the application of the deep oscillation method.

Thanks to HIVAMAT® 200 we achieved a remarkably significant reduction in the circumference of the limbs affected. The type of clinical evaluation used, if applied rigorously, is able to confirm the above-mentioned results in any treatment aimed at improving lymphedema.

Both qualitative and quantitative evaluations were carried out in order to monitor the structural aspect of the subcutis. As a result, the ecographic studies have confirmed that the deep oscillation application significantly reduces the subcutis thickness.

There is no scientific literature on the deep oscillation method for treating lymphedema. Nevertheless, our study clearly showed how this treatment can be successful in slowing lymphedema progression down.

CONCLUSIONS

Lymphedema represents a chronic, irreversible and debilitating condition where progression is inevitable. Instrumental tests are useful to confirm the clinical diagnosis, determine residual lymphatic function, select and evaluate therapeutic methods. The treatment goal is to remove stagnating lymph in order to avoid the onset of subcutaneous fibrosis, prevent complications such as lymphangitis, severe functional impairment, cosmetic embarrassment and amputation of the limb. This results in an improvement of the patient's quality of life. Non-invasive conservative therapy represents the best approach to lymphedema. Surgical procedures such as lymphovenous anastomosis, are reserved for specific conditions and they are rarely recommended as primary therapeutic option.

The Complex Decongestive Physiotherapy (CDP) of lymphedema is commonly employed as primary treatment and is based on hygienic measures, skin care, manual lymph drainage (MLD), compression bandages and decongestive exercises.

HIVAMAT® 200 is a new instrumental physiotherapeutic method which employs intermittent electrostatic fields with deep oscillation in order to stimulate the transportation of interstitial liquids and their components and allow fibre and tissue layers to regain motility and flexibility. All these effects are achieved through minimal external pressure.

On the basis of our experience, the optimum treatment for lymphedema of the limbs can be achieved through two or three-week cycles of CDP. Thus, through a combination of CDP and deep oscillation methods, which are able to stimulate transportation of interstitial fluids and their components, we can ensure an improvement of the treatment quality, a reduction in treatment times with positive effects on the patient management costs and an improvement of the patient's quality of life. Furthermore, thanks to the possibility of self treatment patients are given the chance of undergoing continuous therapy at home.

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LYMPHAMGIOMA CIRCUMSCRIPTUM OF THE VULVA: CASE REPORT

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ABSTRACT

Lymphamgioma circumscriptum of the vulva is a rare benign disorder involving the lymphatic channels in the deep dermal and subcutaneous layers. It can occur as either a congenital abnormality or as acquired damage to previosly normal lymphatic channels.
Clinical appearence is marked by clustered or diffuse thin-walled, translucent vesicles 1 to 5 mm in diameter filled with clear lymphatic fluid. Diagnosis is usually made by biopsy and these lesions often mimic infections processes leading to inappropriate treatment.
Management options have included surgical excision of the skin and subcutaneous tissue, surface abrasion by laser, sclerosing therapy or electrocoagulation and observation.

KEY WORDS: lymphangioma circumscriptum, vulva, congenital, electrocoagulation, vulvoscopy, child, capilary lymphangioma.

INTRODUCTION

Lymphangiomas are benign neoplasms involving the lymphatic vessels, that could be present since the birth, although been very small that is imperceptible and come back visible in the childhood. Morphologically lymphangiomas are classified in capillary lymphangioma, for example lymphangioma circumscriptum, and cavernous lymphangioma, for example higroma.
Considered as a circumscribed developmental defect of the lymphatics, congenital lymphangioma circumscriptum consists essentially of multiple lymphatic cisterns lying deep in the subcutaneous tissue without direct communication to the general lymphatic systems. As for acquired lymphangioma circumscriptum, one proposed etiology is the architectural disruption of the previosly normal channels leading to sequestration and further dilatation of the lymphatic. This theory is supported when lymphangioma appears after radiation therapy or associated with chronic lymphedema and can be classified like lymphangiectasia.
Peachey and co-workers distinguish two main forms of lymphangioma circumscriptum: localized and classic. Both form have a similar clinical appearence marked by clustered or diffuse thin-walled, translucent vesicles, 1 a 5 mm in diameter, and filled with clear lymphatic fluid.
The vesicles may develop on normal skin or on top of preexisting papules. Hyperkeratosis may sometimes give them a verrucous appearence. Though similar in terms of clinical features, the classic and localized forms of lymphangioma circumscriptum differ in patient´s age at first appearence, size of the lesion, distribution over the body, histology and symptoms. Most of vulvar lymphangioma circumscriptum cases reported in Literature have been classified as classic type; however localization and age at presentation seen in those case are unusual for classic type, which raises the possibility of misdiagnosis.
Lymphangioma circumscriptum can occur anywhere in the body: intraperitoneally, retroperitoneally, on the skin surface, penis, scrotal area or in the bone. The sites most often cited in Literature are the chest, thigh and buttock. The vulvar presentation is uncommon. Literature review revealed that treatment modalities are the same for both congenital and acquired vulvar lymphangioma circumscriptum. These modalities include: sclerotherapy, electrocoagulation, liquid nitrogen therapy, carbon dioxide laser therapy and surgical excision. Because recurrence is the rule when using any of these methods, observation of an asymptomatic patient can be proposed.
Sources searched included Literature contained in the National Lybrary of Medicine's Pub-Med database1-31, using terms "lymphangioma circumscriptum" combined with "vulva": between 1960 a 2006, 15 cases were reported, including the case described here.

Generally, the symptoms referred for the patients are swelling of the vulva, pain, recurrent cellulitis caused by excoriation or spontaneous oozing of the vesicles and subsequent infection of the vulvar area. The added complication of psychosexual disfunction may lead to cessation of sexual activity.
A rare major complication is lymphangiosarcoma arising at the site of a preexisting lymphangioma circumscriptum, sometimes after radiation therapy and sometimes not.

CASE REPORT

13 years old white woman, who presented at our clinic with 1 year history of multiple painless vulvar vesicles, itching, no smell. The patient reported spontaneous appearence of the symptoms together with the menarche and she needed to use absorbents everyday, because of clear fluid abundant leakage. There were no history of malign disease, local trauma or malformation associated. She was not sexually active at this time.
Physical examination showed a diffuse swelling and hyperemia of the vulva, labia minorum with translucent vesicle filled with clear lymphatic fluid (Fig. 1). The remaining findings on genital and physical examination were normal.
Vulvoscopy identified several diffuse vesicles in the entroito vaginal and labia minorum, negative of Schiller and Acid Achetic test (Fig. 2).
Biopsy of the lesion revealed the features of lymphangioma circumscriptum, namely, dilatation of lymphatic channels in the papillary dermis, acantosis and hyperkeratosis. Neoplasic cells was not evidenced.
Lymphoscintigraphy of lower limbs was normal (Fig. 3).
The treatment proposed in this case was electrocoagulation of the lesions under endovenous sedation.
Actually, she refers a little oozing only near menstruation and do not need to use absorbent out of this period.

Figure 1: Diffuse sweeling and hyperemia of the vulva.

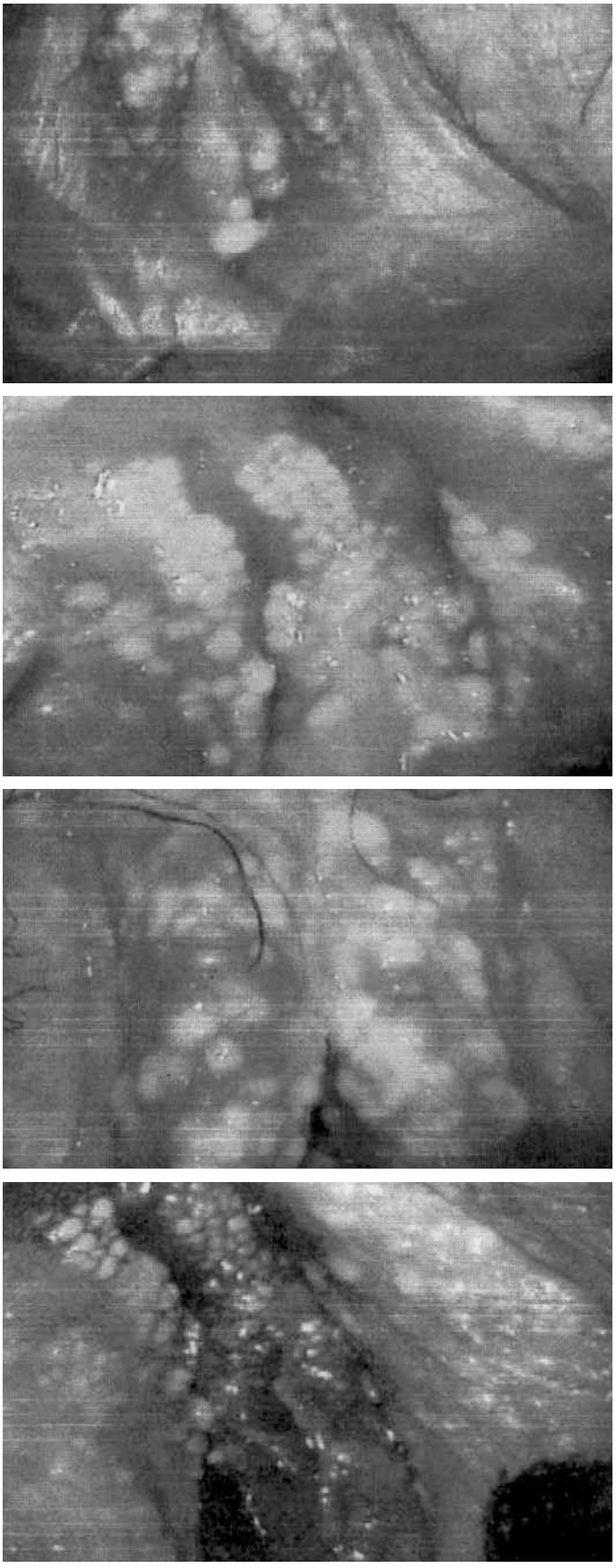

Figure 2: Vulvoscopy showed diffuse vesicles.

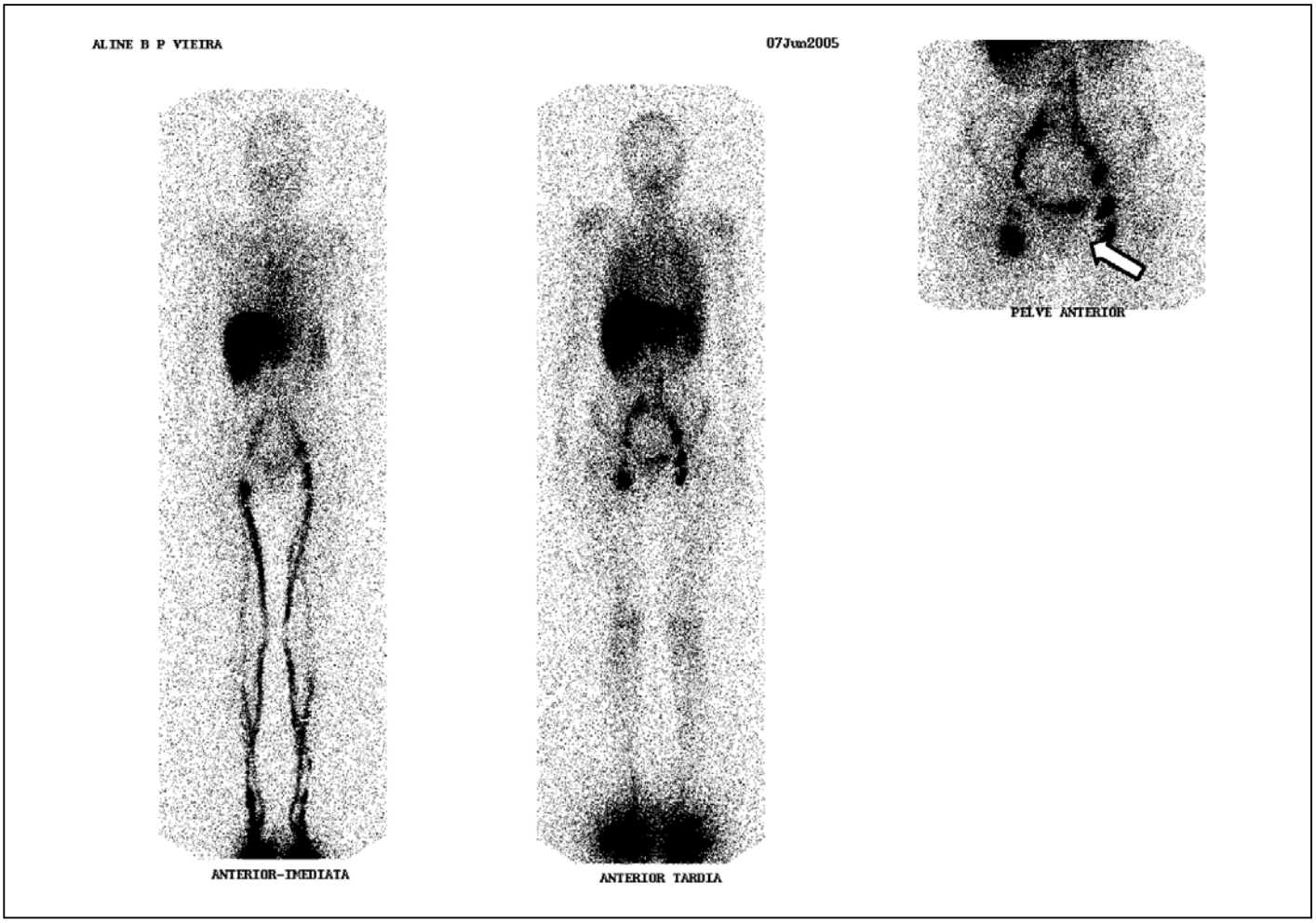

Figure 3: Lymphoscintigraphy of lower limbs was almost normal. At the pelvis and genital area there is a possible evidence of gravitational lymphatic back-flow (arrow).

DISCUSSION

Lymphangioma circumscriptum of the vulva can mimic infectious process as molluscum contagiosum or genital warts and lead to improper therapy. The etiologic factors for lymphangioma circumscriptum are not clear.

Considered as a circumscribed developmental defect of the lymphatic channels, congenital lymphangioma circumscriptum consists essentially of multiple lymphatic cysts communicating through abnormal musclecoated channels that contact each other tonically; the pressure in the sequestered system increases, leading to the formation of saccular dilatations of the thin superficial lymphatics. Apparent vesicles represent the projection into the dermal papillae of these dilated superficial lymphatic channels.

Among therapeutic modalities reported in the literature, this case was treated by electrocoagulation because of its minimally invasive technique. Other modalities could be used in the future, if the fluid relapses again in a significant quantity like before the treatment and, in case of associated gravitational lymphatic and chylous reflux pointed out by lymphoscintigraphy and, if it is the case, by conventional oil contrast lymphography, it is necessary to treat the patient also with multiple antigravitational lymphatic ligatures at the iliac-pelvic region bilaterally and microsurgical lymphatic-venous derivative anastomoses to better drain the lymph coming from the pelvis and genital area32.

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CHYLOUS PERITONITES: NOSOGRAPHIC, DIAGNOSTIC AND THERAPEUTIC CONSIDERATIONS

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ABSTRACT

Chyloperitoneum may be 'primary' or 'secondary', depending on whether its root cause can be detected. Even in its more specifically clinical expression of 'chylous peritonitis', especially in children or young adults, its etiology is basically correlated with congenital dysplasic alterations and more or less extended malformations of chyliferous vessels, of the chylous cyst, and/or of the thoracic duct, as well as of loco-regional lymph nodes in this district or in affected districts.
An accurate diagnostic assessment is required for a proper treatment, depending on associated clinical pictures.
For a quick reinstatement of a proper metabolic balance, total parenteral feeding (TPF) is recommended early on, in order to significantly limit the chylous leak volume.
Surgery will be designed, on a case by case basis, depending on the primary or secondary nature of chylous effusion, clinical severity, and the number of chylous leaks. Hence, through different associations, the following types of surgery procedures can be performed to treat this disease: Chyloperitoneous *drainage; Identification* of the site or sites of chylorrhagy; *Removal* of chylous cysts and/or chylomas; *Resection* of lymphangiectasic - lymphangiodysplasic tissue, which could also be combined with other 'ad hoc' solutions; *"Spaced-out" antigravity ligatures* of incompetent and ectasic chyliferous lymphatic vessels, in order to treat gravitation chylous reflux<and if necessary also *CO_2 –Laser; Derivative (lymphatic-venous anastomosis)* or *reconstructive (lymphatic-venous-lymphatic plasty) microsurgery.* In the most difficult cases and those affected by constant recurrences, a *peritoneal-jugular shunt* (Denver, Le Veen), which, however, has some major limitations in children.
Considering the etio-pathogenesis as well as the nature and complexity of chyloperitoneum, the treatment of these difficult pictures and its outcome significantly depend on the skills and hands of physicians/surgeons and on the technology of available equipment. For this reason, it is highly recommended that these patients be referred to the few centres that have a specific surgical experience in the treatment of this disease.

KEY WORDS: Chylous ascitis, chylous peritonitis, diagnostics, surgical treatment.

NOSOGRAPHIC CONSIDERATIONS

From a nosographic point of view, the definition of 'chylous peritonitis' is substantially the same as 'chyloperitoneum', namely a disease caused by the leak of intestinal lymph - clinically called 'chylous'. It has a peculiarly milky colour, due to a dense and rich concentration of chylomicrons after long-chain fat and triglyceride absorption from intestinal lymph vessels or collectors. These vessels which, for their specific function, are called 'chyliferous' vessels, are located under the diaphragm and in the retro and intra-peritoneal compartment.
According to the by now conventional description of this disease made by Gruwetz[4] around thirty years ago, chyloperitoneum is classified into: 1) an acute form, also called 'chylous peritonitis', which has generally its onset after a heavy and specially fat meal, with acute pain and abdominal defence reaction, and
2) a 'sub-acute' or chronic form, with a more subtle, hence more insidious, clinical onset, due to a much slower and progressive chylous leak.
The first systematic investigations on both animals and human cadavers were originally conducted by Gaspare Aselli[5] and Jean Pecquet[6] back in the 17th century: They set up the basis for the excellent iconographic description of the lymphatic circulation system made in the following century by Paolo Mascagni[7].
However, the first clinical case of chyloperitoneum following an abdominal trauma was allegedly described by J. De Diemerbroeck[8] in 1685 , followed by another case reported by R. Morton[9] four years later, which was caused by tubercular

lymphoadenitis obstructing the thoracic duct and associated with chylothorax.
A recent detailed review of the by now numerous cases reported in the literature since then was published in 2000 by O. Aalami and coll.[10] in "Surgery". Further, we should also mention the outstanding investigations and experiences made by M. Serveuille[11], J.B. Kinmoth[12] and G. Gruwez[13] for their nosographic value. Personally, however, I believe that the actual incidence of this disease has been widely underestimated, since in hospital dismissal forms, diagnoses of 'chyloperitoneum, chylous ascitis or chylous peritonitis' are not normally reported as primary diseases, but as associated pathologies or complications.
In any case, even considering the above mentioned reservations, the incidence rate of chyloperitoneum is still today reckoned to be of 1 case every 50,000 hospitalised patients.

ETIOPATHOGENETIC ASPECTS

Chyloperitoneum may be 'primary' or 'secondary', depending on whether its root cause can be detected. Even in its more specifically clinical expression of 'chylous peritonitis', especially in children or young adults, its etiology is basically correlated with congenital dysplasic alterations and more or less extended malformations of chyliferous vessels, of the chylous cyst, and/or of the thoracic duct, as well as of loco-regional lymph nodes in this district or in affected districts. These forms are commonly considered to have a so called 'primary' etiogenesis and account for approximately 70% of all cases. Conversely, 'secondary' forms due to mechanical causes or obstructions of various nature, including trauma, have a much less important statistical value. However, it should be pointed out that, as presented later on in this presentation, from a physiopathological point of view, malformation-related dysplasic alterations act as actual obstacles to antigravity lymph drainage, just like mechanical obstruction forms proper.
Among the forms of 'secondary' chylous leak, we should mention those found in tropical and subtropical regions that are endemically affected by *Filaria Bancrofti* parasite, namely, more specifically, India, Africa, and North-West Latin America. Due to sanitary-nutritional reasons, also related to poor socio-economic conditions of the native populations, these diseases record a very high incidence and are generally followed by post-tubercular forms, that are also promoted by the same poor socio-economic living conditions mentioned above for filariasis.
Conversely, in countries that, from a socio-economic point of view, are more developed, secondary chyloperitoneum is generally found as sub-acute or chronic chylous leak (chylous ascites) occurring most commonly as a consequence of:

- primary invasive or infiltrating malignant tumours, or malignant lymphomas with abdominal and/or thoracic-madiastinal localisation;
- lymph node metastases;
- traumas;
- surgery of the thoracic-abdominal aorta (accidental lesion of iuxta-cisternal lymph vessels, of the chylous cyst or of the thoracic duct) or involving extensive retroperitoneal lymph node resections.

Then, there is a whole range of likely causes of secondary chyloperitoneum, from acute or chronic pericarditis, to acute or chronic pancreatitis, from retroperitoneal fibrosis to sarcoidosis, etc. All of them challenge the diagnostic acumen and therapeutic skills of clinicians, who have the hard task of handling these complex and difficult cases.
Conversely, with regard to 'primary' chyloperitoneum, what M. Servelle11 first stated in 1981 is still valid, namely "… il n'existe pas de chylopéritone spontané sans malformation congénitale des chylifére".
A malformation affecting the thoracic duct, Pecquet cyst, and/or chyliferous vessels underlines the previously mentioned physiopathological concept, but actually means that there is a significant obstacle to lymph drainage and, in particular, to intestinal drainage. Therefore, chyliferous vessels along the walls of the small intestine and of the mesentery become significantly dilated and abnormally stretched due to chylous stasis. The disease also features lymphatic megacollectors with more or less extensive chylous lymphangiectasia, often associated with lymphangiomiomatosis[15].
Now, looking at their position, they are not only located right below the visceral peritoneal layer with a mesh-like arrangement, but also throughout the small intestine and more specifically at the level of intestinal villi. Hence, dysplasic chyliferous mega-lymphatics may break due to a localised swelling (the so called 'mesentery chylous cyst'), or anywhere along the wall of an extremely ectasic collector, sometimes through a two-step process, namely, once the peritoneum is opened up by chylous with subsequent development of a 'chyloma', chylous begins to flow into the abdominal cavity. Also, in other cases, the chyliferous vessel at the centre of the villus breaks into the intestinal lumen, thus causing the loss of proteins, lipids, lipoproteins, and even calcium and glucose, which lead to metabolic disorders that are typical of so called 'Protein Losing Enteropathy' (PLE) - Fig.1.

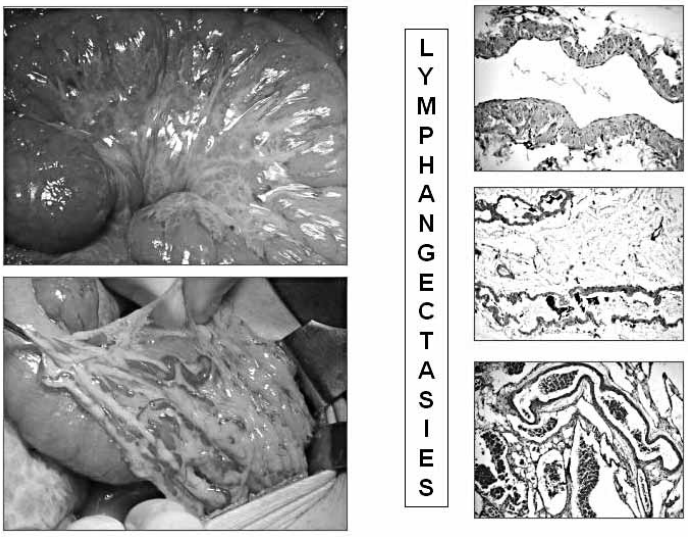

Fig. 1: Macro and microscopic features of chylous peritonites caused by chylo-lymphangio-adenodysplasia.

Owing to the direct link between the septic intestinal environment and the inner part of chyliferous vessels, there may be recurrent attacks of acute lymphangitis and acute mesenteric lympho-angioadenitis which, in some cases, may even lead to septic shock or, at best, to a chronic process, while triggering a vicious circle with further worsening of the intestinal lymphatic drainage. Chyloperitoneum and protein losing enteropathy may often be combined. Also, we should not forget that, apart from intestinal lymphatics, also lumbar lymphatics – collecting the lymph from the lower limbs, external genitalia, intra-abdominal organs, kidneys, adrenal gland, and the abdominal wall – flow into the chylous cyst. Further, considering the thoracic-mediastinal catchment basin of the thoracic duct and that lymphatic dysplasia can affect even one or more extra-abdominal districts, due to strange malformation combinations, chyloperitoneum can also be associated with a whole range of different pathologic pictures listed below[1]:

- mono or bilateral *chylothorax;*
- *chylous cyst, mediastinal chyloma or chylomediastinum;*
- *chylopericardium;*
- *chyluria;*
- *chylo-colpometrorrhea;*
- *chylodema* of external genitalia and/or of one or both lower; limbs, with *chylo-lymphostatic verrucosis* and subsequent chylo-lymphorrhea;
- *chylous joint effusion.*

The wide ranging extension of the above malformations and the complexity of their association with dysplasia of chylo-lymphatic vessels, thoracic duct, and chylous cyst explain why, in the newborn, sometimes these conditions affecting multiple-districts are incompatible with life. Further, upon clinical onset of the most severe cases, effective treatment may be difficult to achieve later in life, thus leading to more or less complex prognostic implications involving *'quoad valetudinem'* as well as *'quoad vitam'* issues.

DIAGNOSTICS

In case of an isolated picture of chyloperitoneum, it should be pointed out that, owing to the 'primary' nature of the disease, specially in children and young adults, the presence of more or less extended cutaneous hemangiomas in the chest or the limbs – normally flat, of a 'milk and coffee' or 'Port wine' colour – may be a sign of the disease. No familiarity has yet been confirmed for these malformations.
Obviously enough, information about the *patient's medical history* and a *clinical examination* are fundamental for diagnosis and must be conducted in the most accurate possible way.
According to some Authors, the definition of 'acute chylous peritonitis' is not accurate, since pain is caused by the quick swelling related to chylous leak into the intra-peritoneum, rather than to direct chylous action irritating the peritoneum. However, in our own experience and in the experience of many other authoritative Authors[11,12,13], intra-operative findings as well as peritoneal biopsies have shown the presence of a more or less significant acute inflammation process. This would confirm the typical clinical picture of 'acute abdomen' which, in 50% of cases, could initially mislead to wrong diagnoses of 'perforated gastro-duodenal ulcer', 'acute appendicitis', or acute 'cholecystitis'. These acute forms are unlikely to be complicated by septic shock.
For a proper differential diagnosis, *paracentesis* is fundamental: this procedure allows to verify the nature of effusion and confirm clinical and imaging (US and CT) results. It is generally employed to confirm clinical assumptions, while lab tests are useful to show the presence of leukocytosis and related lymphopenia.
Subacute and chronic forms are more subtle, where chylous leak is slow and progressive, with practically no pain, which the patient feels as an annoyance or burden due to abdominal distension. Distension which, in turn, raises the diaphragm, with subsequent significant breathing capacity reduction and related subjective and objective symptoms. Vomiting is frequent in children.
In case of slow chylous leak, adult patients show a higher adjustment capacity, until some sort of spontaneous, probably unstable balance is reached, even for longer periods (weeks, months, even years), depending on the severity and cause of chyloperitoneum.
In the majority of cases, malnutrition is present, with more or less significant hypoproteinemia – specially affecting the albumin fraction – and weight loss. Respiratory problems and steatorrhea are also often present, in PLE associated forms.
The chylous nature of the effusion can be confirmed not only from its peculiar milky colour, but also by chemical analysis, which will show a high fat concentration (cholesterol, lipoproteins, chylomicrons).
Specially in acute onset forms, bacteriological analysis, also coupled with an antibiogram, is useful, in order to implement a targeted antibiotic therapy, if necessary.

An accurate diagnostic assessment is required for a proper treatment, depending on associated clinical pictures, namely:

- *$^{51}CrCl_3$ test*, to gain evidence of any major abdominal protein leak (> 2% of fecal radioisotope disposal within 5 days following intravenous – 30 μ Ci – administration of this substance. Specially in children, care must be paid not to mix feces with urine, since 30% of this isotope is disposed in the urine).
- *Small intestine barium enema,* to demonstrate any remarkable thickening due to lymphedema, which is generally greater in the submucosa of the intestinal wall, and subsequent protrusion of intestinal folds and villi;
- *Small intestine endoscopy,* in particular with biopsy of the duodenum-jejunum segment, which will show significantly stretched chyliferous vessels at the centre of villi[15];
- *Lymphoscintigraphy,* with evidence not only of tracer leak into the peritoneal cavity, but also of a more or less severe dysplasia involving also other compartments, like external genitalia and the lower limbs. This method is an excellent tool to assess microsurgery outcome (as we will better illustrate here below);
- Standard *lymphangiography* (with liposoluble ultrafluid contrast medium injected with microsurgical technique after isolation and incannulation of the lymphatics of the extensor digitorum muscle. If coupled with a CT scan, it allows a more accurate assessment of disease extension, as well of the site of the obstacle and of chylous leak source (Fig. 2);

- *Magnetic resonance* which, by digital subtraction method of the fatty tissue, will allow the get a more in-depth demonstration of dysplasia-related impairment of the lymph vessels (lymphangio-MR).

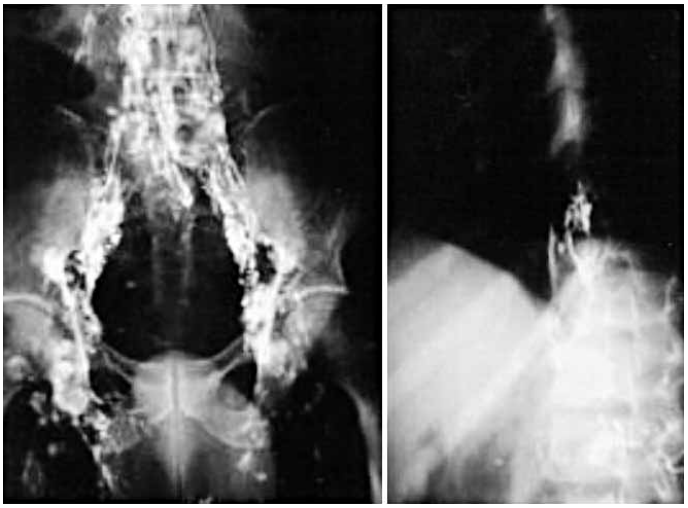

Fig. 2: Lymphangiography is still a fundamental investigation method in the diagnosis of dysplasia of chyliferous vessel, the 'cisterna chyli' and the thoracic duct, especially when associated with CT scan.

In order to demonstrate a concurrent Protein Losing Enteropathy (PLE)[16], *albumin labelled (^{99m} Tc) scintigraphy* may be quite useful for a more complete diagnosis. PLE can be observed inside the intestinal lumen in scans taken 1-24 hours after intravenous administration of 740 mBq.
Finally, in case of more complex pictures associated with more or less widespread hemo-angiodysplasia, *also selective digital angiography* of the compartments affected by vascular visceral and/or peripheral malformation, and *angio-CT* are advantageous complements to the above mentioned instrumental diagnostic process.

SURGICAL MANAGEMENT

In our opinion, all the above described pictures, even in the case of acute onset, should not undergo surgery too quickly, until at least a proper diagnosis has been made as to the nature and site of the likely leak. During this period, the patient must be properly metabolically compensated, through an appropriate diet, with protein integration and limited lipid input confined only to medium chain triglycerides (MCT). As a matter of fact, in these cases MCTs, rather than being absorbed through intestinal chyliferous lymphatic roots, follow the portal root pathway.
For a quick reinstatement of a proper metabolic balance, total parenteral feeding (TPF) is recommended early on, in order to significantly limit the chylous leak volume.
Further, in this phase of 'initial approach' to this complex problem, specially in acute and sub-acute onset cases, a *videolaparoscopy* can be useful, also in order to help in the proper positioning of one or more peritoneal drains, having the correct size. These drains will be used to drain the effusion in one or more steps, depending on its volume, while being careful not to cause 'ex vacuo' haemorrhages and keeping in mind that chylous is a dense fluid, hence this procedure is to be preferred over the US or CT guided positioning of smaller drains, which are more likely to get clogged with time.
Once in place, these drains can be used 'on demand', also for washings with a Trémolliéres sterile solution (concentrated lactic acid) combined with an antibiotic (250-500 mg of sodium rifamicine). The sclerotizing effect of this drug has proved beneficial, specially in the treatment of post-surgical chyloperitoneum (mostly occurring after lymph node resections performed close to the mesentery root). Also, in our experience, in these cases of surgical origin where the onset of chylorrhagia occurs in the early days after surgery and can be observed through the same drains placed upon surgery completion, in the great majority of cases, washing with Trémolliéres associated with a rigorous total parenteral feeding has proved to be successful in solving this condition in two, maximum three weeks. Actually, the great majority of chylorrhagia cases were due to extended lymphadenectomy in kidney cancer surgery. In this way, timely treatment of chylorrhagia as a post-operative complication will help prevent the onset of secondary chyloperitoneum. This is a likely complication in these types of oncological surgery, specially when abdominal drains are removed too early, also because, as mentioned above, in the first week after surgery, they are useful 'sensors' for the recognition and prompt treatment of chylorrhagia.
Primary chyloperitoneum caused by dysplasia or malformations is a much more complex condition and requires an accurate diagnostic assessment, as described above.
At this point, surgical timing will be defined, to be designed also on the outcome of the various conservative treatments already implemented, namely: hyper-protein and hypo-lipidic diet (e.g. exclusively based on medium-chain fats and triglycerides) and TPN; proper antibiotic protection, which is necessary to prevent and treat the not so rare septic complications of this disease; and even seriated paracentesis, which mainly aims at gradual chylous effusion drainage and subsequent reduction in intra-abdominal pressure.
In this as well as in subsequent treatment phases, the – intravenous, intramuscular, and subcutaneous, respectively – administration of somatostatin or ocreotide can be quite useful. Both substances have proved successful in reducing chylous effusion – in some cases also in a remarkable way – and even as anti-proliferation agents of vascular and, more specifically, lymphatic cells and endothelia (N. Browse, G. Burnard and P. Mortimer, 2003[15]).
Therefore, surgery will be designed, on a case by case basis, depending on the primary or secondary nature of chylous effusion, clinical severity, and the number of chylous leaks. Hence, through different associations, the following types of surgery procedures can be performed to treat this disease:

- Chyloperitoneous *drainage;*
- *Identification* of the site or sites of chylorrhagy;
- *Removal* of chylous cysts and/or chylomas;
- *Resection* of lymphangiectasic-lymphangiodysplasic tissue, which could also be combined with other 'ad hoc' solutions;
- *"Spaced-out" antigravity ligatures* of incompetent and ectasic chyliferous lymphatic vessels, in order to treat gravitation

chylous reflux - following the teachings of Servelle and Tosatti - and if necessary also

- *CO_2 -Laser.* When applied at low power, it has a welding effect already proven on lymphatics, as well as on many other tissues and blood vessels up to one millimetre diameter;
- *Derivative (lymphatic-venous anastomosis)* or *reconstructive (lymphatic-venous-lymphatic plasty) microsurgery:* When applicable, its efficacy has been extensively proven by our personal experience and by other authors as well. With these techniques, functional solutions can be fashioned allowing for anti-gravitation discharge into lumbar, iliac-pelvic, and inguinal lymph nodes - depending on each single case - and, when suitable, ectasic collectors can be harvested.
- In the most difficult cases and those affected by constant recurrences, *a peritoneal-jugular shunt* (Denver, Le Veen), which, however, has some major limitations in children.

In extreme cases, entero-mesentery lymphangiectasia may be so severe that a full resection of the intestinal segment mostly affected by dysplasia may be required.
Videolaparoscopy as a support to *laparotomy* – when the former cannot be performed as an exclusive procedure – and often associated with Co_2 Laser assisted microsurgery – is the most successful therapeutical approach so far, as also demonstrated by our own experience (Tables 1, 2).

Table 1: Clinical experience.

ADULTS	
Chylous peritonitis (CP)	4
CP + chylous reflux + lymphangiectasia + lymphochyloedema of the lower limbs and external genitalia	2
CP + chylothorax	1
CP + chylous reflux + iliac-pelvic lymphangiectasia + lymphangiomatosis	1
CP + chylous reflux + inguinal lymphangiectasia + lymphangiomatosis	1
CP + spontaneous rupture of the thoracic duct + chylothorax + lymphochyloedema of the breast and of the left arm	1
CHILDREN	
CP + chyluria	1
CP + PLE + retroperitoneal lymphangiectasia + chylous cyst and thoracic duct dysplasia	1
CP + lymphedema of the left arm + PLE	1
CP + peritoneal-vaginal duct patency and chylocele	1
CP + chylous reflux + lymphochyledema of the lower limbs and external genitalia	1
CP+chylopericardium	1

Table 2: Clinical outcome.

Regression of chyloperitoneum (5 year follow-up) in 15 out of 16 patients
Laparotomic approach associated with resection and CO_2-Laser
Significant reduction of chylothorax after disappearance of chyloperitoneum
Recurrent chyloperitoneum treated with peritoneal-jugular shunt

For a better recognition of chyliferous vessels, the administration of a fatty meal (60 g of butter in a cup of milk) can be useful, when taken by the patient 4-5 hours before surgery, according to the teachings of Servelle.
In Figures 3-5, taken from our own surgical case series, surgical procedures are presented that have proved most successful and effective in the treatment of chylous peritonitis.

In conclusion, considering the etio-pathogenesis as well as the nature and complexity of chyloperitoneum, the treatment of these difficult pictures and its outcome significantly depend on the skills and hands of physicians/surgeons and on the technology of available equipment.
For this reason, it is highly recommended that these patients be referred to the few centres that have a specific surgical experience in the treatment of this disease.

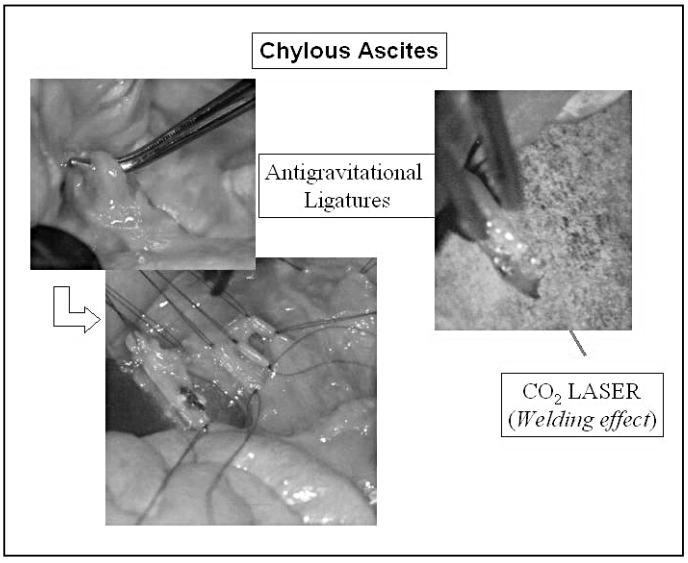

Fig. 3: CO_2 LASER-assisted anti-gravitation ligatures (welding effect) of dilated and incompetent lymphatic and chylous collectors.

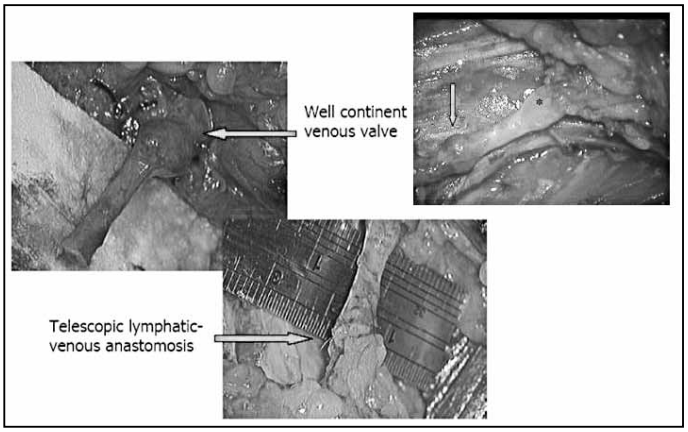

Fig. 4: Derivative Microsurgery: multiple lymphatic-venous anastomoses - LVA.

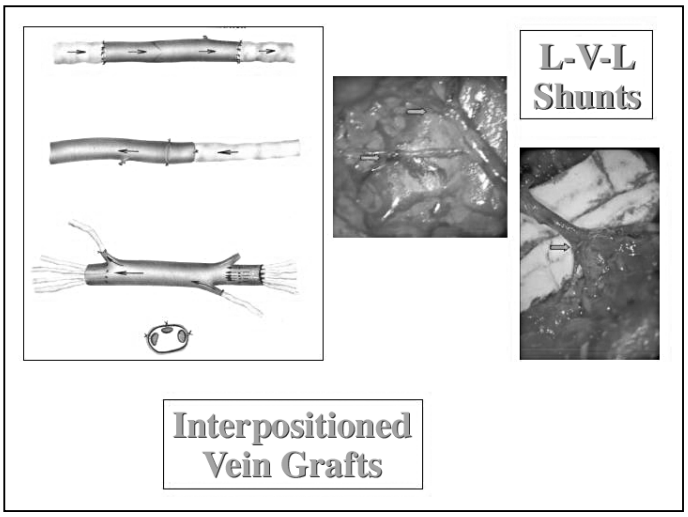

Fig. 5: Reconstructive Microsurgery: lymphatic-venous-lymphatic anastomoses - LVLA.

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MAYALL HYPERSTOMY SYNDROME, A SUCCESSFUL CASE

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ABSTRACT

Hyperstomy is defined as a dysfunction, characterised by high speed arteriography and causes precocious venous backflow. The typical findings of hyperstomy are spots on the muscular tissue. Several study prove that to avoid venous, arterial or lymphatic insufficiency, we have a very single treatment in many cases guided from the skeletization on arterioles branches, showed by arteriography.

KEY WORDS: Mayall syndrome, hyperstomy, arteriography, lymphatic insufficiency.

INTRODUCTION

The hemodynamic alteration caused by arterioles venular micro shunt formation has clinical repercussions on the diagnoses.
The symptoms of hyperstomy and clinical aspect depend on several aspect: first of all are manifested varicose veins of limb, cutaneous hypothermy, praecocious venous back flow and ulcer with no healing with traditional treatment for venous insufficiency are sign and symptoms of this syndrome.[1-7]
Amir-Jahed and Pratesi said that it was characterized by a particular clinical condition and a simulation of ischemia without arterial occlusion. The etiopathogenesis, etiological factors, and the symptomatology are common of many diseases that turns difficult the diagnosis.
In 1997, Campisi gave his attention in XVII Lymphology International Congress on the new vision for phisiopatology that better define the participation lymphatic on process.[8-11]
The ulcer has an etiological appearance of abnormal arteriolar branches, with no objective artery obstruction.

MATERIALS AND METHODS

This is the report of serious ulcers complicating and important venous insufficiency and also lymphedema after repeated crisis of erysipelas and lymphangitis, during 15 years treated by home care without physician.

The patients of 32 years that went in ambulatory of Department of Angiology and Vascular Surgery of Santa Isabel Hospital in Salvador - Bahia, with a large ulcerations in left leg. Repeated crisis of erysipelas and lymphangitis did not show signs of improvement whit antibiotic therapy and function aspect of limb were limited on evaluation of the ulcer.
The patient don't talks about traumatic and family history this disease.
Physical exam showed a big ulcer with pain type paresthesias, 0,5 of deep, bigger extension and infection (Figs. 1-5). A inspection also showed varicose vein in the limb affected, more evident on the size of ulcer. The distal pulse with good expansion and intensity, no have local an machine murmurs are always present, as the Nicoladoni Branhham sign of bradycardia after local digital compression.
Performed the color Doppler Ultra sonography of artery and venous system, where no were concluded critic artery disease, even though the superficial venous system showed reflux by all its extension.

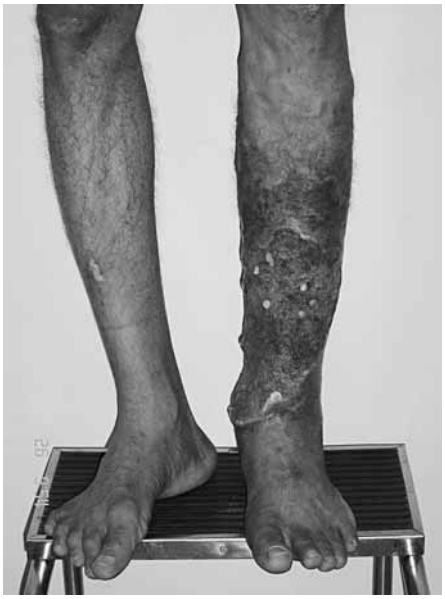

Fig. 1: Pre operate.

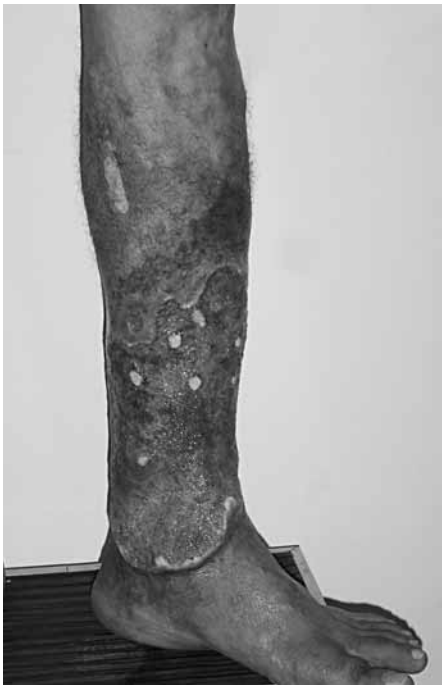

Fig. 2: Ulcer in patient with 15 years of evaluation.

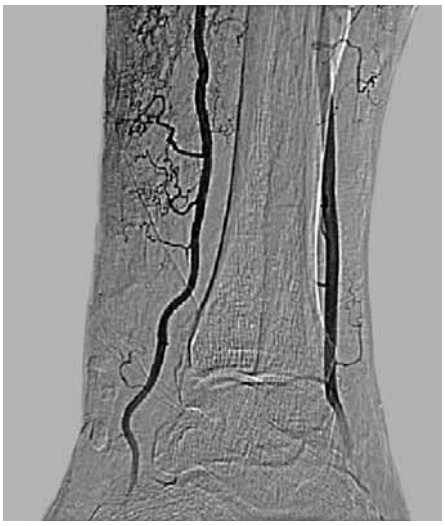

Fig. 3: Arteriography with abnormal branches.

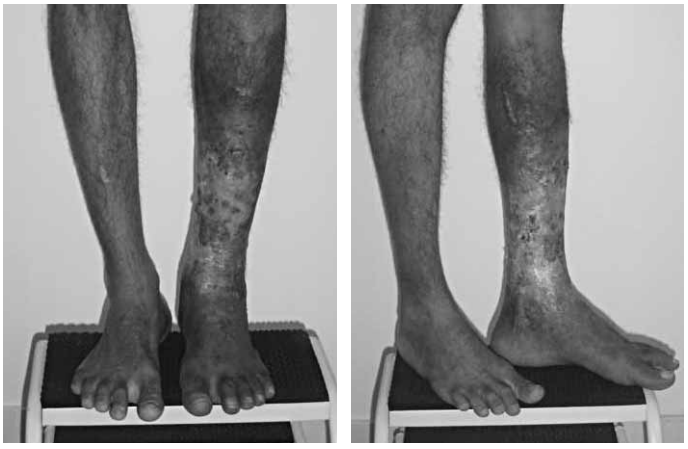

Fig. 4-5: Post operate 1 month after.

After an good mapping biopsies too showed normal and culture were positive for pseudomonas sensitive the ciprofloxacin 400mg iv 2x day 12/12h.
The presence of hyperstomy was properly investigated by high-speed arteriography. It showed three abnormal branches in posterior tibial artery. This exam has a good accuracy, in this condition make possible diagnosis of Mayall Syndrome.
The operation to skeletize the abnormal branching off the calf arteries was followed by complete cure in one month. The follow up this patient is 2 years.

DISCUSSION

The present study emphasizes the importance of an exam of arterial circulation on disease with venous clinical aspect. The Hyperstomy Syndrome is a chronic disease and specific details not appear on reference in litterature exept on Medline. Even though this case call attention it is necessary of confirming this hypothesis. Important brazilian research dedicated part of your life emphasizing this syndrome.
The arteriography aspect is the same of the form that Mayall wrote. The injury of ulcer in Hyperstomy Syndrome has radical cure with long time follow up, after skeletization of all abnormal branches.

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GEL-ESL NEWS

The General Assembly of the g.e.l. (Hinterzarten - 14 May 2006) decided to elect the following board':

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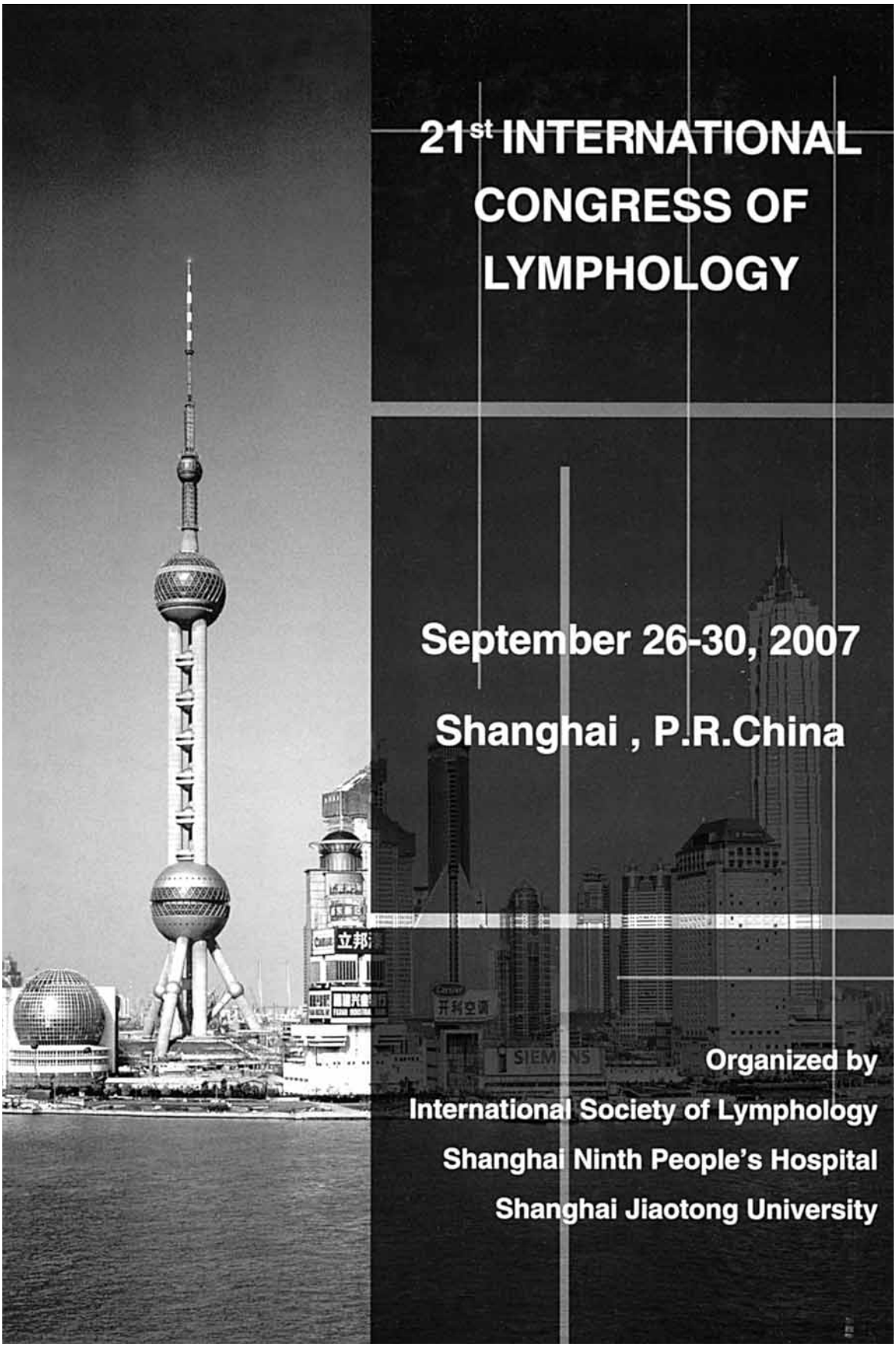

I am pleased to welcome you to the 21st international congress of lymphology scheduled from September 26-30, 2007 in Shanghai, China.

We wish to have one of best ISL meetings with the best quality of science.

Meanwhile, we also would like to provide you a good opportunity to know Chinese culture.

Sincerely
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Chairman

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