CV Pierre BOURGEIOIS

Prof Dr Pierre Bourgeois obtained his MD (Docteur en Médecine, Chirurgie et Accouchement) at the Université Libre de Bruxelles in 1978. He is Specialist in Radio-Radium-Therapy and in Nuclear Medicine, graduate of Radio-Protection since 1984. He obtained his PhD (Agrégé de l’Enseignement Supérieur de l’ULB) in 1997 with one thesis entitled « The post-operative lymphoscintigraphic investigations of the internal mammary and axillary lymph nodes in the management and prognosis of breast carcinomas ». He worked in the Centre Hospitalier J. Bracops (President of the Ethics Committee from 1990 to 1997) and in the Centre Hospitalier Universitaire St Pierre. Since 2003, he is Head of Clinic in the Service of Nuclear Medicine of the Jules Bordet’s Institute, institution specialized in the management of cancers.

He was, either first author, or co-author of 81 papers in national and international peer-reviewed journals and of 3 chapters in books. He participated, either as first author, or as co-author to more than 200 communications in national and/or international meetings. He was co-promotor of more than 30 works by students of the Institut Supérieur d’Éducation Physique et de Kinésithérapie and of the Faculté des Sciences de la Motricité (Université Libre de Bruxelles: promoters were Pr A Leduc, Pr O Leduc and Mr JP Belgrado), works mainly centred on the studies of the lymphatic system in various situations and/or conditions. He was also the main promoter of the Thesis (Faculté des Sciences de l’Université Libre de Bruxelles) by Mrs N Taibi entitled “Importance of the 99mTc-Methoxy-Isobutyl-Isonitrile uptake by the human lymphocytes and study of its cellular radio-biological effects”.

He “translated” his expertise of the lymphoscintigraphic investigations for the management of the edematous situations (mainly secondary to the management of cancers) in the “real world” in 2009: his protocol for the lymphoscintigraphic investigations of the edematous situations was officially adopted by the Belgian Society of Nuclear Medicine and the Belgian Health Insurance System as the technical way to define these situations as “lymphedema” with implications for the re-imbursement of the physical treatments by the Insurance System.

He introduced the lymphoscintigraphic investigations in the Jules Bordet Institute in 1978. The same year, he participated to the foundation of the Groupement d’Etude des Lymphatiques, now the European Society of Lymphology. He founded the European Journal of Lymphology and Related Problems in 1990 and was Editor in Chief of the journal until 2003. He was President of the ESL from 2003 to 2006 and is now President of the ESL scientific committee.

Publications and/or works in relation to Lymphology:

"Post Operative Axillary Lymphoscintigraphy in the management of breast cancer".
P. Bourgeois, J. Frühling and J. Henry.

"Internal mammary lymphoscintigraphy: current status in the treatment of breast cancer"
P. Bourgeois and J. Frühling

"Axillary lymphoscintigraphy: current status in the treatment of breast cancer"
J. Frühling and P. Bourgeois
"Imagerie actuelle du système lymphatique"

"Approche expérimentale de l'influence du drainage lymphatique manuel par lymphographie isotopique"
O.Leduc, P.Bourgeois et A.Leduc
Annales de kinésithérapie, 15, pp 153-158, 1988

"Manual lymphatic drainage : scintigraphic demonstration of its efficacy on colloidal proteins resorption"
P. Bourgeois, O. Leduc and A. Leduc

"Lymphatic resorption of proteins and pressotherapies"
A. Leduc, R. Bastin and P. Bourgeois

"Axillary dissection in breast cancer revisited"
W. Mattheiem, P. Bourgeois, A. Delcorde, M. Stegen and J. Frühling
European Journal of Surgical Oncology 15/6, pp 490-495, 1989

"Loss of lymph into the digestive tract demonstrated by radionuclide lymphangiography : case report"
P. Bourgeois and F. Wolter
The European Journal of Lymphology and related problems 1/1, pp 18-22, 1990

"Morphological study of the vascular regeneration processes in cases of free skin grafts : experimental approach"
Y. Geysels, P. Lievens, P. Bourgeois and A. Leduc

"Contraction musculaire sous bandage semi-rigide : démonstration de son effet sur la résorption protéique"
O.Leduc, A.Peeters and P.Bourgeois

"Football and lymphatic system : about three observations"
P. Bourgeois, S. Plesschaert and D. Leduc
Nuc Compact, 22, 10-13, 1991

"Contraction musculaire sous bandage semi-rigide : étude de son effet sur la résorption lymphatique de protéines marquées"
P. Bourgeois, A. Peeters et A. Leduc

"Lymphatic disorders in rheumatoid arthritis"
E.Joos, P.Bourgeois and J.P.Famaey
Seminars in Arthritis and Rheumatisms, 22, pp 392-398, 1993

"Nodal relapse(s) and lymphedema(s)"
P.Bourgeois
In Vascular Medicine, H.Boccalon editor, 1993, Elseviers Science Publishers, pp 453-456
"Lymphoscintigraphy in adult malignancy"
**P.Bourgeois**
In "Nuclear Medicine in Clinical Diagnosis and Treatment", pp 699-705, JPC Murray and PJ Ell, Churchill Livingstone Ed, 1994

"Critical analysis of the literature on lymphoscintigraphic investigations of limbedemas"
**P.Bourgeois**
The European Journal of Lymphology and Related Problems VI/21, pp 1-21, 1997

"Evaluation of a three-phase lymphoscintigraphic investigation protocol of the lower limbedemas"
**P.Bourgeois, D.Munck, C.Becker, O.Leduc and A.Leduc**

"Imaging techniques in the prevention and management of post-therapeutic upper limb edemas ?"
**P.Bourgeois, Leduc O, Belgrado JP and Leduc A**
Cancer 1998 :83:2805-2813

"Treatment of the axilla with surgery and radiation: pre-operative and post-operative risk assessment"
Leitch AM,MeeK AG, Smith RA, Boris M, Bourgeois P, Higgins S, Pressman Pl, Stevens J, Stevens RE
Cancer 1998:83:2877-79

"The Heterolateral Internal Mammary Chain Invasion in Breast Cancer : Lymphoscintigraphic Data."
**P.Bourgeois** and J Frühling
The Breast 1999 :8:107-109

"Lymphoscintigraphy in adult malignancy"
**P.Bourgeois** and J.Fruhling
In "Nuclear Medicine in Clinical Diagnosis and Treatment", pp 783-790, JPC Murray and PJ Ell, Churchill Livingstone Ed, 1998

"Envahissement du ganglion sentinelle dans les cancers mammaires T0-T1"
D.Dequanter, D.Hertens, I.Veys, J.M.Nogaret, D.Larsimont, **P.Bourgeois**

"Bicyclist's vulva: observational study"
L.Baeyens, E.Vermeersch and **P.Bourgeois**
British Medical Journal 2002:325/7356:138-139

"Effects of age and lateralisation on lymphoscintigraphic interpretation"
**P.Bourgeois**
Nuclear Medicine Communications 2002:23/3:257-260

"How hot is the pathologically positive sentinel node in breast carcinoma patients?"
**P.Bourgeois, J.M Nogaret, I.Veys, D.Hertens, J.Dagnelie, C.Vanhaudenaerde, JM Verdebout and D.Larsimont**

"Sentinel lymph node imaging and research after bone scan in patients with breast cancer ?"
"Oedème des membres et lymphoscintigraphies"

P.Bourgeois, D.Munck, O.Leduc and A.Leduc

"Chylorrhea after axillary lymph node dissection."
François Sales MD (1), Eric Trepo MD (1), Simona Brondello MD (1), Philippe Lemaître MD (1), Pierre Bourgeois MD, PhD (2)

"Isotope labelling and axillary node harvesting strategies for breast cancer”

« Evaluation lymphoscintigraphique d’éventuelles anomalies du système lymphatique au niveau des membres inférieurs de joueurs de football : à propos de six observations. 
Pierre Bourgeois et Albert Leduc
Rev Française Biophys Med Nucl 2007 ; 31 :10-15

"Scintigraphic investigations of the lymphatic system : the influence of the injected volume and quantity of labeled colloidal tracer."
P. Bourgeois

“Clinical validation of a molecular assay for intra-operative detection of metastases in breast sentinel lymph nodes”

“Scintigraphic investigations of the superficial lymphatic system: quantitative difference between intradermal and subcutaneous injections”.
Pierre Bourgeois, Oliver Leduc, Jean-Pol Belgrado and Albert Leduc.
Nucl Med Commun 2009:30(4):270-274

« Lymphoscintigraphy, Angiomyomatous Hamartomas and Primary Lower Limb Lymphedemas”
Pierre Bourgeois, Jean-Louis Dargent, Denis Larsimont, Denis Munck, Francois Sales, Magda Boels$, Christine De Valck
Clin Nucl Med 2009 ;34 :405-9

"Lymphatic system anomalies in Crouzon syndrome."
P. Bourgeois, Pierre; Moniotte, Stéphane
British Medical Journal : case report 2009

"La lymphoscintigraphie dans la prise en charge thérapeutique des oedèmes des membres par les soins de santé en Belgique. »
P. Bourgeois P, Belgrado JP, Aerens C
Médecine Nucléaire 34 (2010) 675–682

“Effect of lateralization and handedness on the function of the lymphatic system of the upper limbs”
P. Bourgeois P, Leduc O, Belgrado JP, Leduc A
Axillary recurrence rate in breast cancer patients with negative sentinel lymph node biopsy or containing micrometastases and without further lymphadenectomy: a monocentric review of 8 years and 481 cases

“Combined role of Lymphoscintigraphy, X-ray Computed Tomography, Magnetic Resonance Imaging and Positron Emission Tomography in the management of lymphadematous diseases.”
P. Bourgeois
The PB Lymphological Awards

The aim of the PB Lymphological Awards is to promote the scientific quality of the presentations given during the ESL meetings.

Members of the ESL Scientific Committee propose to Pr Pierre BOURGEOIS a list of (oral as well as poster) presentations that caught their attention based on their originality and scientific qualities.

Pr Pierre BOURGEOIS selects at least three of these presentations based on the following items:
- originality and interest of the subject,
- quality of the abstract,
- quality of the (oral or poster) presentation,
- interest given to the presentation by the members of the assembly and quality on the basis of the questions raised during the following discussion.

For presentation as a poster, at least one author must be present to discuss the work presented.

The same group with the same subject can not be selected two consecutive years.

These presentations will be nominated during/in the Highlights of the Meeting.

The names of the candidates with the title of their presentation will be published in the EJLRP and on the ESL Web-site.

The nominees must publish their presentation as full paper in EJLRP within the year following the meeting.

A monetary prize of maximum 1000 Euros will be given to the PB Lymphological Award winner(s) during the ESL meeting following their selection (when their presentation has been published as full paper in the EJLRP).

If several selected presentations were published in the EJLRP within the year following the meeting, the prize money will be divided between the nominees. The award winners will then receive:
• a monetary prize of at most 500 Euros and at least 150 Euros,
• an award certificate.
The 2007 PB Lymphological Award selection:

Abs. 34:
“The role of Compression Garments in the Long-Term Management of Post-Mastectomy Lymphedema”
L Forner-Cordero, L Albiach-Gasco, J Munoz-Langa and D Maldonado-Garrido
Awarded 1000 Euros in 2008

Abs. 49:
“Dysfunction and secondary lymphedema in traumatology, complex therapy of burn trauma”
A Loskotova and J Loskotova

Abs. Poster 9:
“Lymphatic of the pleura: microstructure, inflammation and drainage of heavy metal particles”
MJR Oliveira, ASP Pereira, NR Grande and AP Aguas

The 2008 PB Lymphological Award selection:

Abs. 15:
“Lymphoedema post-mastectomy: primary prevention”
M Cestari, F Appetecchi, L curti and C de Rebotti

Abs. 24:
“Immunostimulation and decrease of phlogistic complications in lymphedema patients: preliminary study”
S Michelini, A Failla, G Moneta, M Cardone, V Rubegho and V Zinicola
Awarded 1000 Euros in 2009

Abs. 29:
“Development of lymphatic vessels in hypertrophic hearts”
E Okada

The 2009 PB Lymphological Award selection:

Abs. 6:
“The axillary web syndrome and physical therapy cases: comparison of 2 current treatments”
O Leduc, A Moreau, F Pastouret, A Tinlot, A Clement, T Parijs, F Beckers, JS Strappart and F Wilputte
Awarded 350 Euros in 2010

Abs. 13:
“Morbid obesity and lymphedema: a system of combined treatment”
CC Campisi, F Boccardo, C Campisi, E Benatti and FS Papadia
Awarded 350 Euros in 2010

Abs. 21:
“Characterization of lymphatics in non small cell lung carcinoma and correlation with lymph node metastasis: a preliminary morphological study”
A Cazes, M Douheret and M Riquet
Awarded 350 Euros in 2010

Abs. 28:
“Rosiglitazone effects in microvascular functions of Zucker fatty rats”
A Behar, E Cosson, K Tarhzaoui, G Leger and P Valensi

Abs. 29:
“Intralobular pulmonary lymphatic distribution in normal human lung”
M Kambouchner and JF Bernaudin

Abs. 38:
“Modification of the volume of lymph-nodes linked to the techniques of Manual Lymphatic Drainage”
JP Belgrado, C Rondeux, M Danet, J Senty, P Cullus, R Rosiella and JJ Moraine
The 2010 PB Lymphological Award selection:

Abs. Poster 9:
Interrelationship between fat cells and lymphatic endothelial cells in an adjuvant induced benign lymphangioma model
Ezaki T, Shimuzu K, Morikawa S, Kitahara S and Desaki J

Abs. Poster 15:
An extravascular cell migration pathway to lymphogenic route as revealed by specific markers for lymphatic vessels in the mouse spleen
Shimuzu K, Morikawa S, Kitahara S and Ezaki T

Abs. OP 11:
Epidemiology of lymphedema in Czech Republic: demands for health care (Update and perspective).
Benda K

Abs. OP 1:
The effect of paclitaxel treatment on the occurrence of lymphedema of the arm in unilateral breast cancer patients with axillary lymph node dissection: a prospective study.
Awarded 1000 Euros in 2012

The 2011 PB Lymphological Award selection:

Clinical and genetic study of Italian families with primary lymphedema

Role of Lymphoscintigraphy in primary prevention after breast cancer treatment
Cestari M

Venous bridges as an alternative option for lymphovenous shunts in paediatrics
Papendieck CM, Pozo P, Barbosa L
HIGHLIGHTS OF THE 34th ESL SCIENTIFIC MEETING IN NAPOLI AND NOMINEES FOR THE PB LYMPHOLOGICAL AWARDS 2008

The overall quality of the meeting was good.

We had a good surgical session with the main following points being achieved and/or questions being raised:

- In the upper limb edemas, the Lympho-Venous anastomosis are merely to be proposed to the stages 2 and 3 (Campisi et al).
- Brorson and colleagues presented their results with liposuction in lower limb edemas and confirmed the strict indications of such interventions.
- Their results seem to outline a shift in the overall cellular mass of the edematous limbs from being “liquid” towards one accumulation of fats in the pre-existing adipocytes and/or in other cells. The question remains to be solved and the mechanisms implied to be identified.
- On the another hand, the question of the importance of the deep lymphatic system in such situations was raised as well as the possibility in such case to associate to such liposuctions LVA or lymph vessel grafting (as proposed by Baumeister and colleagues to bridge the gap).

Belgrad and colleagues presented us interesting results about the variations of pressure and of temperature in patients or subjects wearing multi-layered bandagings. They demonstrated for instance that they resulted in one 4°Celsius increase of the skin temperature, a factor which might be implied in the therapeutic response to such bandagings. They also show us fascinating pictures of the skin temperatures obtained using infra-red technique analysis in patients with limbedemas. The work is in progress but this represents surely another way to study the edematous limbs.

In the same spirit, Leduc and colleagues presented the absence of influence of MLD on cardiac parameters as well as one interesting morphological approach for the formation of the axillary web syndrome.

With regard to more basic researchs, Lievens and colleagues and Bernas and colleagues also presented us two different animal models to study the effects of external irradiation on the lymphatic system regeneration after surgical interventions. The first group used mouses and a single vessel lymphatic cutting (the one linking the inguinal node to the axillary one in the animal). They confirmed their presentation in Prague that the (not severed) lymphatic vessels are radio-resistant and they showed that the lymphatic function was restored by lymphatic regeneration through the scar and/or by the development of lymphatico-lymphatic collateralisation pathways. The most surprising fact among their results was that the transport of radiolabeled colloids from the injected lower limb in the axillary nodes was increased when compared to normals, suggesting that there is a (temporary?) overall stimulation of the lymphatic function. On the other hand, Bernas and colleagues used rats as models and their surgical interventions at the root of the limbs was larger than the one performed by Lievens and colleagues. They also demonstrated the effect of Amifostine on the wound regeneration. The two models are interesting but different. For their part, Eliska and Eliskova studied the radial pressure in lymphatic vessels under manual lymphatic drainage.

With regard to clinical situations, Maccio and colleagues stressed the importance of teaching the physicians of the Emergency Units about the lymphangiological emergencies. On the other hand, Loskotova and Loskotova as well as Michelini and colleagues reminded us the muscular and articular involvements in lymphedemas.

Forner-Cordero and colleagues presented a very good multicenter work comparing in three randomised groups of patients the effects of three physiotherapeutic “regimens”. Although there may be a bias in their analysis, the most amusing conclusion was that Manual Lymphatic drainage adds nothing to pressotherapy and Multi Layered Bandagings. Unfortunately, because they were already nominated one year ago for the PB Lymphological Award, they could not be taken into account for the present meeting.

Finally, the three best and most interesting presentations were the following (and their authors are nominated for the PB Lymphological Awards 2008):
- Using immuno histological methods, Okada from Japan showed the different evolution of the veins and lymphatics with the mass of (in the epicardium of) hypertrophic hearts,
- Michelini and colleagues reported their first results with a vaccine in patients to prevent phlogistic complications in lymphedematous patients,
- Cestari and colleagues presented their results in the primary prevention of post-mastectomy lymphedema using one algorithm defining patients at risk.

Prof. Pierre BOURGOIS, MD, PhD,
Past President of the European Society of Lymphology
Founder and past Editor in Chief of the European Journal of Lymphology and Related Problems
HIGHLIGHTS OF THE 35th ESL SCIENTIFIC MEETING IN PARIS AND NOMINEES FOR THE PB LYMPHOLOGICAL AWARDS 2009

The writing of the highlights of this meeting was a difficult job.

In the field of surgery, JP Brun, C Becker and M Rapolti (abs. 7) reported us their results after 2 years of free node transplantations and CC Campisi et al (abs. 13) proposed one interesting combined approach in patients presenting morbid obesity and lymphedema.

At the borderline between surgery and basic research, one of the most intriguing and exciting communications was done by C Hadamitzky et al (abs. 31). They indeed reported that avascular lymph node fragment autotransplantation could induce lymphatic regeneration in rats and that platelet-rich plasma seemed to improve fragment regeneration.

In the field of the physical therapy, we also had interesting communications:
- Indeed, in Napoli, one year ago, O Leduc et al had presented us “the axillary web syndrome”: this year, they reported us their comparison of two physical treatments in such situations (abs. 6)
- Also in the continuity of Napoli, JP Belgrado et al confirmed during this meeting the interest of the deep infrared imaging of lymphedema (abs. 33)
- The same group also demonstrated very nicely the modifications of lymph node volume linked to techniques of manual lymphatic drainages (abs. 38)
- A Dzupina et al (abs. 11) analyzed also very well the effects of proteolytic enzymes on leg lymphedemas after erysipelas.

We had these past years no communications around anatomy and oncology. In Paris, we had:
- a good lecture by JP Sleeman entitled “Tumor lymphangiogenesis: therapeutic target?”
- a preliminary work by Cazes et al (abs. 21) characterizing the lymphatic in non small cell lung carcinoma and correlating them with the presence of lymph node metastasis,
- one study by E Okada (abs. 40) between the pattern of lymphatic invasion and the status of the regional lymph node metastasis in colo-rectal cancers

To conclude, six presentations were selected and their authors are nominated for the PB Lymphological Awards 2009:
- CC Campisi et al (abs. 13) with their combined approach in patients presenting morbid obesity and lymphedema,
- Cazes et al (abs. 21) for their work on the lymphatic in non small cell lung carcinoma and their correlation with the presence of lymph node metastasis,
- O Leduc et al for their comparison of two physical treatments in axillary web syndromes (abs. 6)
- JP Belgrado et al for their demonstration of the modifications of lymph node volume linked to techniques of manual lymphatic drainages (abs. 38)
- The study by Behar et al (abs. 28) of the Rosiglitazone effects in microvascular functions of fatty rats and
- The study by Kambouchner and Bernaudin of the intralobular lymphatic distribution in normal human lungs (abs. 29).

Prof. Pierre BOURGEOIS, MD, PhD,
Past President of the European Society of Lymphology
Founder and past Editor in Chief of the European Journal of Lymphology and Related Problems
HIGHLIGHTS OF THE 36th ESL SCIENTIFIC MEETING IN ATHENS AND NOMINEES FOR THE PB LYMPHOLOGICAL AWARDS 2010

When I received the texts of the abstracts, I had a problem to present the highlights of this meeting. Fortunately, I received the full program and my task was simplified. We had indeed numerous round tables of high quality, covering quite all the fields of Lymphology and with speakers presenting us overall good synthesis of the actual status of our knowledges in these fields of Lymphology. However, even during these round tables, I could identify some pearls:

- In anatomy, Riquet and colleagues presented us the thoracic duct tributaries from renal origin and Amore reminded us the anatomical and pathophysiological basis of the lymphatic drainage of the skin of the ventral and dorsal region of thorax and abdomen.
- During the round table on physiology of the lymphatic system, Belgrado and colleagues attracted our attention on the modifications of the cutaneous sensitivities at the level of the lymphedematous upper limbs, what can have implications for the quality of life of such diseased patients.

Remaining in the field of these round tables and due to their clinical and/or scientific importance, I would also wish to highlight other presentations such as:
- The study by Okada of the lymphatic invasion by cancer cells in gastric cancers
- The importance of one educational program for the sentinel node biopsy arisen by Prof Arkadapoulos
- The treatment of the plexitis after radiotherapy presented by Becker and Fanzio
- The review of the drugs which may affect chronic edema made by Prof Keeley
- The importance of the nursing management of lymphedema by Mrs Galiatsos

However, with all these round tables, it remained little time for the scientific presentations. Well, it simplified somewhat my task to identify the good ones.

Our colleagues from Poland were very prolific under the leadership of our friend, the Prof Waldemar Olszewski, with 5 oral interesting presentations (OP8, OP9, OP18, OP20, OP45). I know him since many years but during each congress, he succeeds to amaze me. For instance, when he raised the question “is there lymphangiogenesis in human leg lymphedematous tissues”... Unfortunately, this presentation was given during a round table.

Nevertheless and to conclude, I will highlight and nominate for the 2010 PB Lymphological Awards the 4 following presentations:

- In the clinical filed, the work by C. Fontaine from the Vrije Universiteit Brussels’ group directed by our colleague P. Lievens who) in a prospective study raised (OP1) one not very well known problem: the effect of paclitaxel treatment on the occurrence of lymphedema of the arm in breast cancer patients with axillary lymph node dissection.
- In these times of financial crisis, the questions by Prof Benda about the epidemiology of lymphedema in Czech Republic and about the demands for their specialized health care (OP11) seem me of the utmost importance. Such questions concern now every health care system in our countries.
- But the most fascinating presentations were, in my point of view, two posters by Japanese colleagues (PP9 and PP15) who analyzed the interrelationship between fat cells and lymphatic endothelial cells in an adjuvant induced benign lymphangioma model and who showed an extravascular cell migration pathway to lymphogenic route as revealed by specific markers for lymphatic vessels in the mouse spleen.

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