

**EUROPEAN SOCIETY OF PATHOLOGY – ELECTRON MICROSCOPY
WORKING GROUP**

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ACTIVITY REPORT 2016

The usual scheme of the activities of the EMWG in the different European Congresses of Pathology has been to organize two or three sessions, with one of them co-organized with another working group. In this report, we will summarize the activities of the 23rd, 24th, 25th, 26th, 27th and 28th European Congresses, and will introduce the scheduled sessions for the 29th ECP in Amsterdam.

23rd ECP – Helsinki, Finland. 2011.

Three sessions were organized, the first being a **Symposium, Renal Tumors: a multidisciplinary approach**, in which renal tumors were reviewed from the histological perspective by Esther Oliva (Boston, USA), the immunohistochemistry and the role of pathologists in the era of targeted therapy was discussed by Holger Moch (Switzerland), the cytogenetics by Paola dal Cin (Boston, USA), the electron microscopic clues were presented by Josep Lloreta (Spain), and the clinical aspects of the interplay between oncologists and pathologists was scheduled to be presented by Joaquim Bellmunt (now in Boston, USA), the latter presentation finally given by Josep Lloreta as Dr. Bellmunt could not make it. **Around 100 people attended the symposium**, one of the best attendances to that date. This frame of multidisciplinary review of specific sets of tumors will be one of the constant activities of the EMWG.

In addition, we organized a **slide seminar with five cases** presented by Drs. Franchi (Italy), Kyriacou (Cyprus), Juanpere (Spain), Schroeder (Germany), and Santucci (Italy), and a **short course on the contemporary applications of EM in the diagnosis and understanding of renal diseases**, in which fibrillary nephropathies were reviewed by J. Lloreta (Spain), Fabry and drug induced phospholipidosis were presented by D. Ferluga (Slovenia), Y. Collan (Finland) discussed the role of EM in decision making in nephropathology, and a special lecture on the ultrastructure of the glomerular epithelial filtration slit was presented by S. Conti (Italy). These two sessions were attended by 15 to 30 people along the different talks.

24th ECP. Prague, Czech Republic. 2012.

The **multidisciplinary symposium** was devoted to **spindle cell sarcomas**, with J. Hornick (USA) dealing with histopathological and immunohistochemical diagnosis, M. Santucci (Italy) reviewing the ultrastructural features of sarcomas, P. dal Cin (USA) summarizing

the cytogenetics of these tumors, and J. M. Coindre the molecular diagnosis. Again, this activity was extremely well attended according to EMWG standards, with a peak of more than 100 people at some points.

This activity was complemented with a **slide seminar on problem cases with EM impact**, in which the speakers were Franchi (Italy), Sam Millan (Spain), Tuñón (Spain), Kowalewska (Poland), Nottola (Italy) and Groma (Latvia).

Drs. Dal Cin and Hornick have benefited of registration waivers. There have been no other expenses.

25th ECP. Lisbon, Portugal. 2013

The activities of the E.M. Working Group in the **25th ECP in Lisbon 2013** consisted of a Symposium on tumors with Alk genetic abnormalities (“alkomas”), and a joint slide seminar with the Nephropathology Working Group.

The symposium entitled **The ALK Tumors: An Heterogeneous Target** was chaired by Josep Lloreta, from Barcelona (Spain) and Paola dal Cin, from Boston (USA) and the program consisted of the following topics and speakers: 1.- Cytogenetic and Molecular Abnormalities of the Alk Gene in Tumor Pathology, by Paola dal Cin, Boston (USA). 2.- Histopathologic, Electron Microscopic and Immunohistochemical Features of “Alkomas”, by Núria Juanpere, Barcelona (Spain). 3.- Molecular Mechanisms of Carcinogenesis in “Alkomas”, by Adrian Mariño-Enríquez, Boston (USA). And 4.- Oncologic Treatment of Tumors with Disorders of the Alk Gene, by Luis Marques da Costa, Lisbon (Portugal).

Similar to previous symposiums with this multidisciplinary format, this activity was well attended, with up to 80 delegates in the room.

Drs. Dal Cin and Costa have benefited of registration waivers, being a Biologist and an Oncologist respectively. The travel expenses of Dr. Adrian Mariño-Enríquez were covered by the ESP with the funds assigned to the EMWG.

The second activity was a slide seminar jointly organized with the Nephropathology Working Group, with the title **Electron microscopy in focus: native and transplanted kidneys**. This session was chaired by Eduardo Vazquez Martul, from La Coruña, Spain and Josep Lloreta, from Barcelona, Spain. The presentations were the following:

1. Introduction: problems of EM diagnostic in renal pathology. Michael Mihatsch, Switzerland.
2. Fabry disease and differential diagnosis. Carmen Valbuena, Portugal.
3. Curvilinear bodies in Chloroquine phospholipidosis and differential diagnosis. Rui Miguel Costa, Portugal.
4. Uromodulin storage and familial chronic renal disease. Fernanda Carvalho, Portugal.

5. Thin basement membranes: not always thin basement membrane disease. Javier Gimeno-Beltran, Spain.
6. Transplant Glomerulitis. Differential diagnosis of glomerular hypercellularity. Helmut Hopfer, Switzerland.
7. Transplant glomerulopathy: Differential diagnosis: Recurrent Glomerulonephritis. Joan Mölne, Sveden.
8. Transplant problems and differential diagnosis. Jolanta Kowalewska, Poland.
9. Transplant problems and differential diagnosis. Eva Honsova, Czech Republic.

26th ECP. London, Great Britain. 2014.

The EMWG scientific activities in the London congress were jointly organized with the ACEM, through its President, Bart Wagner.

The title of the symposium was "**Multidisciplinary approach to the diagnosis of mesothelioma and non-small cell carcinoma in the era of targeted therapy**". Again, was chaired by Josep Lloreta, from Barcelona (Spain) and Paola dal Cin, from Boston (USA) and the program consisted of the following topics and speakers: 1.- Histopathological diagnosis of NSCLC: Clues and Pitfalls, by Cesar Moran, from Houston, USA. 2.- Insights in NSCLC electron microscopy – From the seventies till now with IHC updating, by Lina Carvalho, from Porto, Portugal. 3.- Histopathological diagnosis of mesothelioma: Clues and Pitfalls, by Cesar Moran, from Houston, USA. 4.- Contribution of electron microscopy to the diagnosis of mesothelioma, by Josep Lloreta-Trull, from Barcelona, Spain. And Cytogenetic and molecular therapeutic targets of lung and pleural tumors: An update, by Paola Dal Cin, from Boston, USA.

As usual, around 70 to 90 delegates were in attendance.

Drs. Dal Cin and Moran have benefited of registration waivers, and Dr. Moran also was paid a room for one night. He took care of the remaining expenses of his trip.

The title of the joint seminar with the ACEM was **EM in the Diagnosis of Non-Neoplastic Diseases: A Resident's Slide Seminar**, and the chairs were Bart Wagner, from London, England, and Alessandro Franchi, from Firenze, Italy. A total of six cases were presented, with the following schedule:

1. Primary Ciliary Dyskinesia case presentation. Patricia Goggin, UK.
2. Renal Biopsy case presentation. Elizabeth Angus, UK.
3. Neuro case presentation. Oluwayomi Adegbaju, UK.
4. Skin & Muscle preparation for LM and TEM: stained semithin and thin sections - technical matters. Wolfgang Muss, Austria.
5. Pronounced hystrich-like keratinization disorder in a child. Ingrid Hausser, Germany.
6. Renal case - conventional and latest technology in EM. Andrew Yarwood, UK.

27th ECP. Belgrade, Serbia. 2015.

After several meetings in which multidisciplinary symposiums have been focused on certain tumors (kidney, sarcomas, lung, Alkomas, pleuro-pulmonary tumors), we have thought that the time had come for a synthesis, as well as a review of what ultrastructural contributions might be relevant to assist pathologists in making more precise diagnoses of tumors for which there are specific targeted therapies. This is how the Symposium for this year's congress was conceived, and it will be a compendium of the previous ones. The title is: **Role Of Electron Microscopy In Tumor Diagnosis: Potential Impact On Targeted Therapy**, will be cochaired by Josep Lloreta-Trull, Paola Dal Cin, and Alessandro Franchi, and will consist of the following lectures:

1. Introduction: Electron microscopy and targeted therapy. Josep Lloreta-Trull, Spain.
2. Electron microscopy in the differential diagnosis of clear cell renal cell carcinoma. Nuria Juanpere, Spain.
3. Cytogenetic and molecular targets in clear cell renal cell carcinoma. Marta Salido, Spain.
4. Contemporary role of electron microscopy in the diagnosis of sarcomas. Alessandro Franchi, Italy.
5. Cytogenetics and therapeutic targeting of sarcomas. Paola Dal Cin, USA.
6. Potential role of electron microscopy in non-small cell lung cancer. Raquel Albero, Spain.
7. Cytogenetic and molecular therapeutic targets of non-small cell lung cancer. Paola Dal Cin, USA.

On the other hand, together with Ian Roberts, from Oxford, Great Britain, chair of the Nephropathology Working Group, and Jasmina Markovic-Lipkovski, from Belgrade, Serbia, a joint slide seminar is planned with the title **Electron Microscopy in Nephropathology: Conflicting Results and Solutions**, with the following scheduled speakers: Bela Ivanyi, from Hungary, Erik Heyerdahl Strøm, from Norway, Eva Hansova, from the Czech Republic, Heinz Regele, from Austria, Javier Gimeno, from Spain, and Catherine Horsfield, from the United Kingdom.

28th ECP. Köln, Germany. 2016.

Two activities were organized for the last ECP in Köln: First, a **long course on Diagnostic Electron Microscopy in Pediatric Pathology**, according to the following program:

Paediatric & Electron Microscopy Working Groups

Long Course:

ELECTRON MICROSCOPY IN THE MULTIDISCIPLINARY MANAGEMENT OF PEDIATRIC DISEASES

Chairpersons: Josep Lloreta-Trull, Spain, Marta Cohen, United Kingdom, and Paola Dal Cin, USA

- Guillermo Herrera, USA: Glomerulopathies in children and adolescents: more than meets the eye.
- Dieter Metze, Germany: Paediatric skin disorders: Cornyfying and bullous diseases, and more.
- Dr Maesha Deheragoda, United Kingdom: Pediatric liver disorders: ultrastructural clues for diagnosis.
- Kyriacos Kyriacou, Cyprus: Ciliary dyskinesia: an update with molecular correlation.
- Dicle Orhan, Turkey: Electron microscopy of congenital myopathies.
- John Hicks, USA: Small blue round cell tumours: Contribution of electron microscopy.
- Paola Dal Cin, USA: Cytogenetics and molecular biology of small blue round cell tumors.
- Elba Turbat-Herrera, USA: Role of EM in pediatric cytology samples.

The second activity was a joint slide seminar organized in conjunction with Ian Roberts and Jan Becker, of the Nephropathology Working Group. Dr. Becker was the co-chair in this seminar. The following is the list of speakers presenting one case each in this session:

1. Catherine Horsfield, United Kingdom
2. Danica Galesic Ljubanovic, Croatia
3. Thorsten Wiech, Germany
4. Saba Kiremitci , Turkey
5. M.C. Clahsen - van Groningen, The Netherlands
6. Amelie Dendooven, Belgium
7. Stefan Porubsky, Germany
8. Kerstin Amann, Germany

Both activities were very well attended, with a range of 60 to 90 people along their different lectures.

29th ECP. Amsterdam, The Netherlands. 2017.

Two sessions are scheduled for the European Congress of Pathology in Amsterdam. First a joint Symposium with the Dermatopathology Working Group entitled Applications of Electron Microscopy in Dematopathology. There is still a lot of relevant information that can be obtained from the use of electron microscopy in several groups of dermatologic diseases. It is imperative, though, to underscore these applications to increase the awareness of the skin pathologists. For this session, that will be cochaired by Professor Marco Santucci from Firenze, Italy, we have invited lectures by Drs. Hausser, from Germany, Wagner and Macmillan, from United Kingdom, and Josep Lloreta-Trull, from Spain.

Second, a special slide seminar will be organized for the first time in an European Congress of Pathology, in which cases with relevant electron microscopic data will be prepared and presented by residents and pathologists-in-training. The session will be co-chaired by Alessandro Franchi, from Pisa, Italy, and will be entitled **Understanding diseases through the "big eye": an ultrastructural pathology seminar by pathologists in training.** Electron microscopy is a very useful educative tool that can give a different, more accurate perspective to pathologic diagnosis by allowing to understand the fine changes underlying the light microscopic appearance of pathologic processes. In addition, electron microscopy has an often neglected role in diagnosis, and its applications in this regard should be reviewed and disseminated to ensure that any potential valuable contribution of electron microscopy impacts patient management. On another hand, there is the need of more intensive involvement of residents in the activities of the European Society of Pathology and in the European Congresses of Pathology. The purpose of this slide seminar is to give an answer to all these points by inviting residents of different hospitals across Europe to contribute a case in which electron microscopy has been helpful either as a diagnostic tools or just in allowing to better understand the light microscopic appearance of the lesion. Previous experiences with this session format in some national and international meetings indicate that it is very well received and attended. We have a good group of enthusiastic residents from Italy, Portugal, United Kingdom, and Spain that hopefully will attract considerable interest and will be warmly recognized by a crowded conference room. These presentations will be followed by the Business Meeting of the EM Working Group.

Preliminary Proposals for the 30th ECP in Bilbao, Spain, 2018.

Two proposals have been submitted for consideration and eventual approval of the Executive Committee:

- Slide Seminar presented by pathologists in training: Understanding Diseases Through Fine Morphological Analysis

This kind of session has been very successful in the several editions organized with the Spanish society of pathology and we expect also a good feedback from the first seminar of this kind to be presented in an European meeting, in Amsterdam.

- Symposium: Current Applications of Electron Microscopy in Pathology
 - * EM of Renal Diseases
 - * EM of Muscle and Nerve Disorders
 - * EM in Dermatopathology
 - * EM in Cancer Diagnosis
 - * EM in Infectious Diseases
 - * EM as a Tool for Research in Pathology

This summarizes the activities of the Electron Microscopy Working Group.

We remain ready to provide any further information that may be required.

Respectfully submitted.

Josep Lloreta-Trull

Chairman of the EMWG

Alessandro Franchi

Secretary of the EMWG

Barcelona, August 11, 2017