

## Pathology - past, present and future

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Anatomic pathology originated in Europe only 240 years ago. Morgagni's *De sedibus, et causis morborum per anatomen indagatis* definitely changed the course of medicine by encouraging the postmortem search of the causes and nature of diseases (Pathology); subsequently, the application of the microscope and the improvement of histological techniques facilitated the task for the physicians capable of recognising the "hallmark" of diseases on the various tissues of the human body. Therefore, correlating their observations with the patients' clinical histories allowed precise diagnoses and more effective treatments. Over the last century the anatomic and histologic methods have been effectively complemented by cytologic and molecular techniques broadening the realm of pathology from body organs to DNA. Furthermore, the introduction of the various modalities of clinical imaging, such as CAT scan, nuclear magnetic resonance, ultrasound, and endoscopy, has given way to cytopathologic diagnoses performed by fine needle aspirations. In other words, pathologists can make diagnoses of whole organ or tissue lesions simply by looking at a few cells.

Over almost two and a half centuries pathologists have incorporated a wide variety of methods without singling out any of them; they have used them all in order to recognise the type of lesions and what caused them. Even if those methods have been important, they have been changing over the years and they are not the core of the pathologists' practice. In fact, the strength of the pathologists

to keep their much deserved prominence in modern medicine resides in their unique intellectual ability to sum up and integrate an enormous amount of anatomical, histological, cytological, and molecular data (obviously obtained by various methods- for establishing an accurate diagnosis and prognosis.

At the beginning of the new millennium European pathology requires the harmonizing of tasks, definitions and practices. The European Community has recently opened its barriers, and the potential exchange of medical specialists has resulted in various committees starting to work out approaches to smooth the still uneven scenery in terms of practice, rights, claims, and privileges. It is necessary to replace outdated habits or restrictive interests and adjust the practice of pathology to the needs of a new set of international standards for training and certification beyond national borders.

What follows is a summary of the main issues concerning pathology in Europe today:

### Assessment of diagnosis and prognosis

More emphasis should be placed on:

- early diagnosis by screening programmes co-ordinated by pathology departments;
- additional diagnostic and prognostic information obtained by special techniques (immunohistochemistry and molecular pathology);
- practice based evidence by quantifying observations and subsequent evaluation;

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Ανατύπωση από την έκδοση *U.E.M.S. Compendium of Medical Specialists 2000*.

- increase the use of digitalised reports and documents;
- quality control on technical procedures by consultation and/or visitation.

### **Undergraduate and postgraduate teaching centred on:**

- development of problem solving skills;
- multidisciplinary approach;
- computer assisted presentations;
- practical and interactive courses and seminars;
- CME programming, credit awarding system, and structure of CME programmes.
- Research

### **Give priority to:**

- translational research;
- validating methods and evaluation;
- innovation of methods.

### **Management Development of:**

- lab management system;
- automatisisation of working processes eg, voice recognition software;
- networking of hospitals and laboratories;
- manpower planning;
- digital imaging and data processing.

### **Positioning**

Pathology departments should be located inside of or annex to large hospitals as integral parts of complexes of clinical specialties. They should not be diagnostic factories operating as separate units.

- size of the staff large enough to allow sub-specialisation and intradepartmental consultation;
- optimal balance between general pathology and special pathology without formal recognition for subspecialties;
- strategic alliance with key clinical specialties, eg, radiology and surgery for the diagnosis and treatment of breast diseases.

### **International standards**

- The European Board of Pathology (E.B.P.) should formulate quality criteria to assure

- a proper pathology practice in Europe;
- European system of basic training requirements;
- European rules for accreditation of training institutions;
- harmonisation confirmed by the E.B.P. examination;
- exchange of senior residents and fellows among international training programs. Establishment of a European Pathology Fellowship co-sponsored by The European Society of Pathology;
- co-operation in pathology between Europe and the U.S.A.: Step-wise approach based on pilot exchanges between U.S. and selected European medical schools, training programs and countries.
- manpower planning;
- political support from European authorities.

It is necessary to replace outdated habits or restrictive interests and adjust the practice of pathology to the needs of a new set of international standards.

In 1988 anatomic pathologists abandoned the specialist section of Laboratory Medicine and created their own section of Anatomic Pathology and Cytopathology. This was possible because Anatomic Pathology has always been a recognized medical specialty in all European Countries. Main reason for this split was the diversity in the former section and the increasing feeling among anatomic pathologists that their interests were not adequately cared for. The new section had a flying start, mainly due to the fact that the practise of anatomic pathology was quite identical in the different countries, that no other specialties were claiming parts of this field and they were not claiming areas of other specialties. In 1992 UEMS invited all specialist sections to form European Boards for their respective specialties. Whether the role of the specialist sections was originally mainly a political and professional one, the aim of the boards was: "... to guarantee the highest standards of care in the field of the specialty concerned in the countries of the EU, by ensuring that the training of the specialist doctor is raised to the highest possible level". UEMS favoured one and the same name for the specialist sections and the European Board. The name became then specialist section of pa-

thology and European board of pathology. Since most of the new tasks of the Pathology board were already undertaken by the specialist section, it was decided that for anatomic pathology the specialist section should function as the European Board and *visa versa*. Among the activities of this section/board belong:

- Harmonisation of training duration (5 years), presently accepted by most countries;
- Harmonisation of training contains: 5.000 histological examinations, 2.500 gynecologic-cytology examinations, 2.500 other cytological examinations, and 100 autopsies as minimal requirements for each resident;
- Charter on training of pathologists in the EU: responsibility, general aspects, requirements for training institutions, for chiefs of training and for trainees;
- An European examination in pathology: started in 1997, this one-day examination is now in its fourth year;
- Charter on continuing medical education in pathology;
- Charter on quality assurance.

## Cytopathology

Along with recent advances in scientific medicine an diagnostic procedures, Cytopathology has been incorporated into the realm of anatomic pathology as another method supported by the same body of knowledge, namely modern pathology, Morphologic changes detected in cells obtained from body fluids, exudates, and needle aspirations, suggest or confirm more or less categorically the existence of a known pathologic lesion. Furthermore, the introduction into the medical practice of various modalities of clinical imaging, such as CAT scan, nuclear magnetic resonance, ultrasound and endoscopy, has tremendously increased the opportunities of making cytopathologic diagnoses by fine needle aspiration. Today, it is possible to state that all space-occupying lesions in the human body are accessible to fine needle aspiration. Because of the increasing acceptance of this diagnostic option by radiologists, anatomic pathologists have paid more attention to the possibility of making the diagnosis of whole organ or tissue lesions simply by looking at a few more or less isolated cells. In other words,

pathologists are on the way to creating "surgical Cytopathology", equivalent to the time-honored "surgical pathology". Needless to say that to practise the former with reliability and responsibility, a solid command and knowledge of the latter is absolutely necessary.

On the other hand, the need for a rapid and simple diagnostic method in modern medical practice, has promoted Cytopathology as an efficient procedure that cuts down health expenses dramatically; it reduces hospital stay and allows immediate application of therapy. It is also useful for the evaluation of prognosis and follow-up. The diagnostic potential of Cytopathology increases even more with the application of new technologies such as electronmicroscopy, image analysis, flow cytometry, immunohistochemistry, and molecular biology; obviously, they should be assayed first on tissue samples.

We may add that in all countries of the European Community, except Greece, Cytopathology belongs exclusively to the routine medical practice of the pathologist. Also, teaching of Cytopathology today is systematically included in the Pathology Training Programs, virtually worldwide. Examination of the European Board of Pathology. An important tool in the harmonisation process in the EU is the constitution of an European examination. Although many countries still have mixed feelings on such an international happening, afraid that it reduces the importance of national examinations, it is very difficult to find other ways to test the results and influence the harmonisation process of pathology training in so many different situations. At this time, nine specialties provide an European examination, quite a good score considering the difficult circumstances under which they were created. It seems only to be a matter of time before other will follow.

The pathology examination, like the other, is on a voluntary basis; nobody is forced to participate; nevertheless free movement of doctors over EU borders is possible for everybody. Like other examinations it should become such a prestigious one that very pathologist wants to participate to prove her/his competence. To circumvent the fears of some as mentioned above, the examination is only open to doctors who are registered as anatomic pathologists in their country of training.

The examination runs now in its fourth consecutive year. It lasts one day and test the theoretical knowledge of the candidates in 120 multiple choice questions. Practical insight is tested by 60 kodachromes and 40 glass slides.

By using some questions from other international examinations it was possible to compare the results. The degree of difficulty of the European board examination appeared to be quite comparable to the other ones.

**PATHOLOGISCHE ANATOMIE**

EIN LEHRBUCH  
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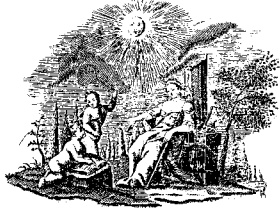
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