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OPINION ARTICLE

# Who Won the Debate? Reflections on the Future of Dermatopathology

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Dermatopathology is rooted in the expertise of a few clinical dermatologists who were curious about the microscopic aspects of skin disease.[1] These individuals undertook histopathological studies, building on the basis of their expert macroscopic and morphological descriptions of skin diseases *in vivo* and their in-depth knowledge of general pathology.

As with many other disciplines of medicine, the early pioneers of dermatopathology were all found in Europe. Henry Seguin Jackson was the first to use the term "dermatopathology" in 1792, although real development of the subspecialty—relating clinical findings with the anatomopathological characteristics—came much later.[2] Karl Gustav Theodor Simon was a pioneering dermatologist and author of the first dermatopathology book, published in 1848, where he described some changes in the microscopic structures of the skin and how these manifested themselves clinically.[3]

Milde and Ackerman's review of first editions of dermatopathology books published as a series in the *American Journal of Dermatopathology*[3-19] clearly demonstrate that the subspecialty of dermatopathology developed and progressed over more than 100 years almost exclusively due to the work of dermatologists. In more recent years, contributions have been made to reference books in the subspecialty by several pathologists who have extensive experience in dermatopathology and knowledge of clinical dermatology.[20]

However, all the most important scientific dermatopathology organizations and most prestigious journals have been founded by dermatologists.[21]

In 1979, A. Bernard Ackerman founded the International Dermatopathology Society, and the Spanish Dermatopathology Group was set up in the same year. Dr Pablo Umbert joined efforts with José María Mascaró and José María Moragas in Barcelona to found the group with an initial membership of 8 dermatologists and 4 pathologists.[22,23] In 1996, the European Dermatopathology Society was founded in Zürich, Switzerland.

Meanwhile, the American Dermatopathology Society had already established dermatopathology as a separate subspecialty in 1973, providing a joint certificate for dermatologists and pathologists from that time on.[2] The United Kingdom followed the trend later, when the Royal College of Pathologists introduced a diploma in dermatopathology for dermatologists and pathologists in 1991.[21] In the rest of Europe, an International Diploma in Dermatopathology has been available yearly since December 2003. This was initially organized by the International Committee for Dermatopathology with the support of the International Society of Dermatopathology, the European Society of Dermatopathology, and the Ibero-Latin American Society of Dermatopathology; and it is currently backed by the European Union of Medical Specialists, Dermato-Venereology and Pathology sections. So it is safe to say that dermatopathology stems from dermatology, both historically and scientifically.

In my opinion, and that of other authors,[4,25] there is only one way to learn dermatopathology: with long hours using a microscope. Dermatopathology can only really be understood with extensive microscopic observation and a great deal of time spent with patients—only then will the significance of the clinical-pathological and pathological-clinical correlation become clear.

Back in 1928, Unna[26] wrote: "The dermatologist must always consider a clinical lesion with the eye of a microscopist, and histological findings with the eye of a clinician," a sentiment which only compounds the surprise when resident doctors in many dermatology services barely ask themselves the basic question of how the lesion would look under a microscope when faced with a skin lesion or eruption. Meanwhile, many heads of dermatology services and staff physicians know the histopathology of skin illnesses by heart.

LeBoit, general pathologist and dermatopathologist, said: "for pathologists, it is simply impossible to reach a relevant and differential diagnosis without knowing the clinical presentations of skin diseases in detail."[27] In my opinion, it is also highly relevant to ask the question from in front of the microscope the other way round: What would the clinical presentation of this lesion be like?[28]

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There is also a time lapse: a generation of dermatologists who, for various reasons, have encountered the disappearance of regulated training in dermatopathology. Very few dermatology services currently run dermatopathology laboratories. For reasons I will not go into here—for that is not the point of this article—these laboratories have been centralized, making access to dermatopathology training considerably more complicated.

From my point of view, there is a difference between reading the pathology report from a skin biopsy and being able to view the slides. I don't think a debate on just who is qualified to write the reports on skin biopsies would be constructive for dermatopathology; but I do think that every clinician must be able to access and view the slides. A rather ridiculous situation exists in some centers, where all the slides are retained exclusively by the pathology laboratory. This is probably a consequence of some relatively justifiable motive, or may be related to the very special nature of skin biopsies; but can anyone imagine a specialist in internal medicine being barred from viewing the patient's x-rays or electrocardiograms as often as they need either before, during, or after a patient consultation?

And this situation can be easily resolved: simply make one extra slide for each sample to be filed by the dermatology service. All hospitals, and more so university hospitals, should have access to copies of slides for all their patients along with their histopathology reports. This would greatly facilitate diagnosis, cooperation between departments and teachers, and would result in a net benefit to the patient. The cost of this initiative would be less than one Euro per slide. Unfortunately, the simplest things are often the hardest to achieve.

At present, many clinical-pathological sessions consist of the pathologist displaying the biopsy and providing an interpretation that remains unchanged even if it is unsupported by the clinical data. And sometimes the dermatologist is at fault: unable to broaden their clinical opinion in line with evidence from the pathologist, even when this does not tally with the case.[29]

The clinical-pathological correlation is not a debate, where one side wins and the other loses, but rather, a dialogue—a term defined as: a discussion or negotiation in the quest for agreement, by the latest edition of the Dictionary of the Spanish Language of the Royal Spanish Academy. True dialogue between pathologists and dermatologists allows both parties to express their opinions and provide the other with an opportunity to reflect on the case presented, altering the perspective of both parties and broadening possibilities for diagnosis. Without this open, nonconfrontational dialogue, the clinical-pathological correlation is meaningless. This is not a rhetorical debate—no one wins or loses here—it is a dialog where the outcome should benefit the patient and the study of disease. The clinical-pathological correlation can be profitable in many ways, even economically, if we can take a long-term view of its value.

A quick overview of the recommended bibliography for dermatopathological training reveals a clear division between those articles favoring pathology and those favoring dermatology, dependent upon whether the author is a pathologist or dermatologist. I believe that both types of specialists could benefit from further regulated training or specialization in dermatopathology, where pathologists will gain one type of advantage, and dermatologists others.[30]

In spite of the current situation, dermatopathology forms an integral part of dermatology, providing, in fact, the structural basis for the specialty. In recent years, there has been increasing support for translational research, where collaboration between clinicians, pathologists, and basic science researchers has been essential to success. Professional collaboration is being promoted and new dermatopathology units are being established, where dermatologists, pathologists, and researchers are working together—a practice that provides rapid and unequivocal patient benefits. As a subspecialty that deals with morphology, dermatopathology cannot escape the dominant trends in science. There is no doubt that the clinical-pathological correlation will help make diagnosis more precise and provide immediate benefits to the patient. These units can only serve to facilitate the work of professionals striving to coordinate the various disciplines involved in skin pathology, a list that currently includes optical microscopy, electron microscopy, immunohistochemistry, and molecular biology; but that will cover many more fields such as confocal microscopy and rapid diagnosis techniques in the future.[31]

As Moragas said in 1978[32] "the development of knowledge, both clinical and pathological, is increasingly due to laboratory research, giving a greater weighting to the role of scientists, not doctors, with a falling amount of clinical research and an increase in basic research".

When dermatologists are fully conversant with the more common skin diseases and want to extend their understanding, they probably have to look deeper into the subject. The first step will be to study histological patterns of disease, and then molecular pathology, or even basic research into pathogenesis. It is very difficult to know more about the pathogenesis of diseases without a global overview of the patient and their illness. In fact, most diseases have been described on the basis of clinical observation, and it is only by going into greater depth that the pathogenesis can be discovered.

Health service managers understand very little about the importance of the clinical-pathological correlation and they are opposed to the concept of dermatopathology units on the basis of economic criteria. The importance of the clinical-pathological correlation and the value of these units to patient diagnosis and treatment, along with their potential

contributions to teaching and research, clearly render these criteria invalid.

In my opinion, dermatopathology as a subspecialty and the dermatopathology units should be established as soon as possible. These would be staffed by pathologists providing support for external consultations and by dermatologists capable of issuing reports. The core staff would very probably need to work alongside researchers into skin pathology (biologists, pathologists, or dermatologists working on doctoral theses and a large variety of other projects). Advances in molecular biology are prompting the fusion of basic, genetic, biochemical, and immunological sciences with clinical subjects, and the dermatopathologist acquires a fundamental role in this process: transferring advances in the basic sciences to the consulting room.

The separation of dermatopathology from dermatology represents the beginning of the end, not only for dermatopathology, but also for dermatology.[21] I don't think this implies an uncertain future for dermatology[25]—which will continue to be an essential specialty—but the discipline is certainly undergoing an evolutionary process and not all of us are adapting to the changes.

In this sense, the International Board Certification in Dermatopathology can be seen as a landmark in the history of dermatopathology in Europe and the rest of the world.[33,34]

This qualification represents a solid attempt to improve the level of dermatopathology, valuing individual competence while building on certain basic requirements and previous training in dermatopathology. If we can continue to maintain the correct perspective, this could represent a great incentive for the subspecialty. Therefore, I completely concur with the recommendations of Helmut Kerl et al[34] on objectives to be achieved in the subspecialty of dermatopathology:

1. The need for dedicated full-time professionals in dermatopathology
2. The introduction of a curriculum for training in dermatopathology
3. The existence of accredited centers for training in dermatopathology
4. The development of programmers for training in dermatopathology during residency (for pathologists and dermatologists)
5. Funding for dermatopathology training
6. The creation of an academic degree in dermatopathology

A great deal of work is underway in dermatopathology in Spain. Many sectors are contributing to this and we now have a number of internationally renowned dermatopathologists. However, many initiatives still require firm institutional commitment and a strong vision of the future, something the subspecialty of dermatopathology is heavily dependent upon.

For our work both begins and ends with our patients. And this leads me to posit the opening question once again: Who won the debate?

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**Conflicts of Interest**
The author declares no conflicts of interest.

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