

## The Invisible Doctor

**Pathologists have regressed from eminence to anonymity – how did it happen and what should we do about it?**

By José I. López

Going back hundreds of years, pathologists, along with psychiatrists, dominated the field of medicine. They were viewed as eminent members of society, even appearing as lead characters in novels of some of the greatest European writers like Thomas Mann or Hermann Hesse.

Modern anatomic pathology was then born in the 19th century in Germany when Rudolf Virchow stated the third principle of cellular theory and contributed to the greatest ever change in the knowledge of human disease processes. His third principle – summarized in the aphorism *omnis cellula e cellula*, meaning that every cell

has been originated from the division of another cell – completed the two other basic principles of cellular theory proposed earlier in the century (1839) by Theodor Schwann and Jakob Schleiden.

To consider disease was the result of cell disturbances, and not of humorism, was a giant leap forward at the time, comparable with the discovery of the double helix in 1953 or to the human genome in 2005. Everything changed: biology was reformulated and nothing was the same thereafter. By the dawn of the 20th century, pathologists were at the summit of scientific knowledge. Virchow was the first pathologist nominated for the Nobel Prize of Medicine – in fact he received three nominations – and although he did not take the prize, two histopathologists shared it in 1906: Camillo Golgi and Santiago Ramón y Cajal.

Clinicopathological correlation – a concept defined by Italian Giovanni Battista Morgagni in the 18th century – supported the great advances made in internal medicine in Europe, in particular in France and Great Britain in the early 20th century, when the best clinicians sought the support of pathologists to further their understanding of disease and its clinical relevance to the living patient. The vanguard of pathology then moved from Europe to the USA where it continued its forward trajectory to modernity.

Tarnished by history

Pathology as a medical discipline has evolved tremendously in the last 50 years. Three major milestones have had a dramatic influence: 1) the development of anesthesia – better surgical interventions became possible and surgical pathology was created; 2) the development of the endoscope – a technology that allowed doctors to reach the most recondite sites through natural body openings for study and take small

biopsies if needed; 3) the molecular approach – a trend that is very much at the forefront of our evolution right now.

Biopsies and cytologies replaced the autopsy as our main activity, making pathologists integral to the medical decision-making process. And yet, during this dramatic evolution, pathologists have moved to invisibility. Everyone knows what psychiatrists, gynecologists, dermatologists, and so on, do, but very few know anything about pathologists, other than what they see on television.

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History and tradition are frequently thought necessary for a sustainable evolution but in pathology’s case, both have been a heavy backpack that we have had to carry on our climb up the mountain of modernity. Europe has a big history in pathology, but this history may somehow be working against us; it links us unconsciously with forensics and autopsy in the social collective mind. The US don’t have this long history of centuries of autopsies behind them and that can be an advantage for American pathologists. But all around the world we have the bad influence of TV – Dr House, Quincy, CSI – in which pathology appears as a simple and easy-reading task under the microscope that almost any doctor can do. Some

### At a Glance

- Historically, pathologists were viewed as eminent members of society
- Since the birth of modern anatomic pathology in the 19th century, pathology has evolved at a dramatic pace; placing it at the center of research and the medical decision-making process
- In spite of this, pathologists have become invisible to the public and medical peers
- Pathologists are at the forefront of today’s most exciting medical advances, and so must take responsibility to reverse this trend, which has caused the future of our field to appear uncertain



students actually tell me the reason that they were attracted to pathology was because of a TV series! What's worse is that we haven't fought against this attitude.

Sadly, this ignorance does not only affect the general public, it applies to those who are an active part of the healthcare system too.

#### Dispelling myths

Contrary to a belief among our colleagues of other specialties, pathologists do not

read the slide under the microscope because nothing is written in cells and tissues. Under the microscope, the pathologist interprets morphological and immunohistochemical data, integrates them with clinical, analytical, molecular and radiological data, and delivers a pathological diagnosis. The pathological diagnosis is much more than a mere result, it's a complex interpretation of multiple and diverse data. Sometimes it is easy, sometimes is not; our job involves seeking out plenty of wolves in sheep's

clothing. We need to take responsibility to communicate this message to our medical colleagues.

For the general public, it's important that they know, at the very least, that a pathologist's diagnosis assigns a name to almost every disease, gives crucial information about the extent of the disease, predicts its prognosis, selects the patients that may receive expensive treatments, and evaluates *a posteriori* the effect of these treatments on the patient. How do we do improve

public perception? We step out of our comfort zone.

#### Breaking the mould

Given our importance to the healthcare system, why do we find ourselves battling for recognition? Pathologists sell themselves cheap, and I believe we are somehow guilty of our own invisibility. It's particularly shocking to me that pathologists do not meet with patients, a fact that surely would improve the perception of our profession. Patients, and their relatives, should have the opportunity to meet the doctor who has made his/her diagnosis at least once and to have the opportunity to ask about things relating to their condition that they usually do not understand. This way everybody will know what a pathologist does and we will retake the recognition that we deserve. I sincerely feel that patients should see two doctors during their initial oncologic consultation: the one doctor who explains how the diagnosis was arrived at, including details of the condition (pathologist), and the second who defines the therapeutic pathway (oncologist). But this is not a new idea. By 2000, being a visiting pathologist at Princess Margaret Hospital in Toronto, I attended one such meeting. There were endocrinologists, surgeons, and the pathologist in the room, and the patient and her son had the opportunity to find out more about what was going on with her pituitary adenoma and its treatment options. Pathologists need this change in approach to happen and it needs to be driven through the collaboration of multidisciplinary societies. It is going to take a long while to change the paradigm though – easily 10, 15 years – but only if this starts happening today.

A major consequence of this lack of recognition is the menacing shortage of pathologists in Europe today – medical students consider our specialty boring

and wordy and don't think to select pathology as a first option. We struggle for healthcare spend, so we're constantly under pressure to deliver more with less, and neither patients nor the general public know about us.

As well as working with societies to encourage patient communication, I also believe that our invisibility can be cured with information strategically disseminated in the media. Some of the key messages that we need to get across include:

1. Pathologists are clinicians, not forensic scientists
2. Pathologists work for living people, even when they perform autopsies
3. Pathologists' reports are not cool results of sophisticated and expensive devices; instead, they are a synthesis of complex interpretations of multiple data
4. Pathologists save money to health organizations helping to select the appropriate treatment for the appropriate patient (personalized medicine)
5. Pathologists are the clinicians closest to basic science
6. Pathologists' opinions are needed to inform difficult multidisciplinary clinical decisions with patients
7. Pathologists keep tissue specimens obtained from patients safe for future research.

Although predictions for the future appear fairly dismal, I will say that the seed grows many times in hostile terrains. In 1914, Ernest Shackleton, needing to recruit a crew for his Transantarctic imperial expedition, published an unusual announcement in The Times newspaper: "Men wanted for hazardous journey, small wages, bitter cold, long months in complete darkness, constant danger, safe return doubtful, honor and recognition in

case of success." The announcement inexplicably received 5,000 applications for the 56 positions available.

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Trainees need to be advised before boarding that the journey is long and the wages short, that long periods of complete invisibility are expected, that honor and recognition, in case of success, are often taken by others. However, the paradox is that the future has never been so attractive and challenging for us – we are at the center of some of the game-changing future trends in medicine, which is wonderful, and we should also relish in the opportunity that we have to change the perception of our field, forever. These are exciting times for pathology!

What we need to do now is to work together to improve the visibility of our profession. If we don't, its future could be in trouble. It's impossible to change the mindset of society overnight; we need to start changing things today!

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