

Editorial

Nephropathology and nephrology. The need for a change[☆]

Anatomía patológica y nefrología. La necesidad de un cambio

Eduardo Vazquez Martul^{a,c}, Manuel Praga^{b,c,*}

^a Hospital Universitario A Coruña, A Coruña, Spain

^b Instituto de investigación, Hospital Universitario 12 de Octubre (i+12), Madrid, Spain

^c Departamento de Medicina, Universidad Complutense, Madrid, Spain

Introduction

It is not necessary to go through the history of medicine to demonstrate the importance of nephropathology and kidney biopsies in the current knowledge of kidney diseases. The search for the cause of haematuria and proteinuria stimulated to Richard Bright (1789–1858), the father of nephrology, to observe and evaluate kidney lesions microscopically. Subsequently, and guided by the same interest, in 1914 Volhard and Fhar created the first histopathological classification in which they tried to relate acute, chronic and degenerative lesions with a specific clinical condition. From these early stages, and as has occurred in other fields of medicine, the histopathological study has allowed to generate a classification of kidney diseases, resulting in improved quality of communication among the nephrology experts, and at the same time providing a logical structure for the categorisation of patients for epidemiological, prognostic and therapeutic studies. However, an important opinion is that of Gabriel Richet (1948), the father of French nephrology, illustrating the close relationship between nephrology and nephropathology. He stated that nephrology is not just a branch of internal medicine, but that it is based on specific biological studies and on the observation of renal pathology. More recently Robert Berliner,

known as “the dean of renal physiology” defined nephrology as *the discipline in which the optical microscope, the application of immunofluorescence and the use of the electron microscope is essential.*

The implementation of the kidney transplant programme is an additional demand on the nephropathology departments. Nowadays, kidney transplant programme is widespread at any referral hospital. The direct participation of a nephropathology department in transplant programmes is due to the fact that *graft biopsy continues to be the only diagnostic test that, with a greater degree of reliability, makes it possible to confirm a rejection and, consequently, an appropriate immunosuppressive therapy.*

Therefore, nowadays it is advisable that renal pathology texts written by renowned pathologists, such as *Heptinstall*, *R. Colvin* or *V. d’Agati*, are kept close to the pathologist’s microscope to be consulted before issuing a diagnosis and drafting a nephropathological report.

Chronic kidney disease, a disease on the rise

However, requirement to use a specific methodology, which an expert pathologist recommends, is strengthened by another significant factor which is that of financial-healthcare. It is

DOI of original article:

<https://doi.org/10.1016/j.nefro.2017.11.002>.

[☆] Please cite this article as: Corvillo F, López-Trascasa M. Lipodistrofia parcial adquirida y glomerulopatía C3: la desregulación del sistema del complemento como mecanismo común. *Nefrología*. 2018;38:247–249.

* Corresponding author.

E-mail address: mpragat@senefro.org (M. Praga).

2013-2514/© 2017 Sociedad Española de Nefrología. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

well known, and all healthcare indicators demonstrate that that the population of patients with chronic kidney failure is growing steadily. The prevalence in developed countries is 11% in the adult population.¹ It has been calculated that there are more than 48,000 patients with chronic kidney failure in Spain, with an annual incidence greater than 5000. This means that every year, 6000 new patients need to start renal replacement therapy.² Chronic kidney disease represents between 1.6% and 2.5% of the total healthcare expenditure in Spain (1.4 billion euros) and the 50,000 kidney patients in stage 5 of chronic kidney disease consume 2.3% of the national healthcare budget.³

It is necessary to emphasise the healthcare expenditure on this disease does not include the effect of the chronic kidney disease has on the development and acceleration of coronary heart disease and cardiovascular complications; these increase even further the already-high healthcare costs.

Value of kidney biopsies and nephropathology departments

Presently, it would be difficult to explain why a kidney biopsy was not performed in light of nephrotic syndrome that do not respond to corticosteroids, a severe acute or chronic deterioration in kidney function, the impact of the kidneys from a systemic disease, or in light of a kidney graft failure.

We should recognise that with the help the nephropathology departments which receive, process and study biopsies, we know, via the Sociedad Española de Nefrología (Spanish Society of Nephrology, SEN) and the Registro Español de Glomerulonefritis (Spanish Registry of Glomerulonephritis), the incidence and prevalence of the different diseases with renal pathology in Spain. Despite this information, we must accept as a negative fact that in around 50% of patients with chronic kidney disease, the cause of this disease is unknown, and that a complete study using an electron microscope is only carried out in very few cases. Without a doubt, both the Sociedad Española de Anatomía Patológica (Spanish Society of Nephropathology, SEAP) and the SEN should analyse the reasons why Spanish centres do not have experienced pathologists and infrastructure equipped with a special processing laboratory which includes immunofluorescence or immunohistochemistry and an electron microscope.

The high costs of kidney biopsy studies and the need for the pathologist to with enough knowledge requires planning of kidney biopsy studies at both autonomous community and state level in Spain. The wide dispersion of nephrology departments, even in regional centres, leading to a low number of kidney biopsies, prevents the funding of expert pathologists in kidney diseases and even means that conducting kidney biopsies is not cost-efficient from the healthcare point of view or the financial point of view, for as long as the reliability of a histopathological diagnosis is not guaranteed.

The need for new planning. Centralisation of histopathological studies

The complexity of studying kidney disease, the high cost of clinical processes and treatment demands, with increasing urgency, a new horizontal-type organisation in Spanish hospitals, moving away from the classic vertical structure in which the organisation of medical specialties into isolated compartments prevents teamwork. This horizontal organisation as work teams requires the integrated presence of pathologists who are experts in nephrology and who offer with their knowledge and experience. The demand for nephrologists with sufficient training to undertake the challenge of patient care and scientific analysis is a current reality calling for a response from the scientific societies involved, as well as from the healthcare administration.

There are sufficient indicators to compel scientific societies, specifically the SEAP and the SEN, to narrow any gaps. There are destabilising factors, one is the fact that nephropathology as such is not, and has never been, a formally developed sub-specialty, and it is not an area of pathology inspiring new vocations, with only some exceptions.

Contrary to what happens in the USA, United Kingdom and other European countries, in which kidney biopsy studies have been centralised, the “decentralisation” policy has been maintained in Spain. We believe that this is a mistake, as it has prevented the necessary diagnostic method from reaching levels of quality and of required experience, increasing the cost and making the outcome uncertain. In the above-mentioned countries, there are reference nephropathology centres or groups, with a proven track record, which receive all the kidney biopsies performed in a certain healthcare area (state, city, etc.) and which issue a report, for the clinic taking care of the patient, quickly and with fluid and continuous communication. This system, in addition to ensuring a high level of quality of nephropathological information and an analysis of all the kidney biopsies with all the indicated techniques (including electron microscopy), has meant that these groups of nephropathologists, together with clinical nephrologists and other professionals interested in these diseases, have developed leading research groups on kidney diseases.

We believe that it is important to consider the activity of the nephropathologist not as an independent specialty, but as a *basic integrating element* within a multidisciplinary team for which the fundamental objective will be studying kidney diseases, not only from the histopathological and ultrastructural point of view, but fully addressing nephrological diseases, from optical microscopy to molecular biology. The emergence of quality cost-effective results will never be possible if there is no in-depth knowledge of the specific field of renal pathology.

REFERENCES

1. Obrador GT, Pereira BJ, Kausz AT. Chronic kidney disease in the United States: an underrecognized problem. *Semin Nephrol.* 2002;22:441-8.
2. De Francisco AL, de la Cruz JJ, Cases A, de la Figuera M, Egocheaga MI, Górriz JI, et al. Prevalence of kidney insufficiency in primary care population in Spain: EROCAP study. *Nefrologia.* 2007;27:300-12.
3. Martínez-Castelao A, Górriz JL, Portolés JM, de Alvaro F, Cases A, Luño J, et al. Baseline characteristics of patients with chronic kidney disease stage 3 and stage 4 in Spain: The MERENA observational cohort study. *BMC Nephrol.* 2011;12, <http://dx.doi.org/10.1186/1471-2369-12-53>.