

# Pediatric Surgery and University

V. Álvarez Muñoz

*Pediatric Surgery Department. Hospital Universitario Central de Asturias. Oviedo (Spain).  
Surgery Department. University of Oviedo.*

## ABSTRACT

**Introduction.** Pediatric Surgery studies in Spanish universities are not regulated, and their situation varies significantly from one region to another.

**Materials and methods.** A descriptive study by means of a survey directly addressed to the heads of the 47 Spanish healthcare units was carried out.

**Results.** Only 33 pediatric surgeons currently teach at the university level. Most of them are employed (associate professors) and assigned to non-surgical departments. The degree of teaching accreditation of these professionals is meager.

**Conclusion.** It is necessary to reflect deeply on the absence of our specialty in universities and, conversely, on the scarce presence of university studies and research in healthcare units.

**KEY WORDS:** Specialties; Surgical; Pediatrics; Universities; Education; Medical; Research; Accreditation.

## CIRUGÍA PEDIÁTRICA Y UNIVERSIDAD

## RESUMEN

**Introducción.** Los estudios de Cirugía Pediátrica en las universidades del Estado Español no están regulados y su situación es muy variable de unas regiones a otras.

**Material y métodos.** Estudio descriptivo a través de una encuesta dirigida directamente a los responsables de las 47 unidades asistenciales españolas.

**Resultados.** Tan solo 33 cirujanos pediátricos ejercen actualmente docencia universitaria, en su inmensa mayoría con vinculación laboral (profesores asociados) y adscritos en su mayoría a departamentos no quirúrgicos. El grado de acreditación docente de estos profesionales es muy bajo.

**Conclusiones.** Se hace necesaria una profunda reflexión sobre la ausencia de nuestra especialidad en las universidades y, vicever-

sa, sobre la escasa presencia de los estudios universitarios y de la investigación en las unidades asistenciales.

**PALABRAS CLAVE:** Cirugía Pediátrica; Universidad; Docencia; Investigación; Acreditación.

## INTRODUCTION

Universities are the access route to undergraduate studies. In Spain, the MIR (Medical Intern Resident) system is the only alternative for access to specialist training, apart from the homologation of foreign degrees, with a well-established training program and accredited centers for its development.

Therefore, the contrast between postgraduate training, which is highly regulated, systematized, and audited, and undergraduate teaching, which is fragmented, unregulated, and practically unknown in our specialty, is very striking. Although this duality is inherent in many areas of knowledge, particularly in surgery and other geographical areas, we wish to focus on the Spanish university system and the knowledge of pediatric surgery taught there.

## MATERIALS AND METHODS

The work consisted of a survey accompanied by an exhaustive and regulated search for specialists in Pediatric Surgery in Spain who hold teaching positions in public and private Spanish universities. The 47 Pediatric Surgery Departments/Units operating in the country were contacted.

To gather this data, the heads/managers of the different units were approached by email or WhatsApp®. In case of no response, or when discrepancies may have arisen, we contacted professionals of recognized prestige, many of them with recognized teaching activity, by the same means or by telephone. In cases where doubts persisted, we

DOI: 10.54847/cp.2023.04.09

**Corresponding author:** Dr. Víctor Álvarez Muñoz. Head of the Pediatric Surgery Department. Hospital Universitario Central de Asturias. Avenida de Roma s/n. 33011 Oviedo (Spain)  
E-mail address: alvarezcirujano@gmail.com

*Date of submission:* August 2023      *Date of acceptance:* September 2023

resorted to profiles in academic and professional networks, such as university department web pages or the LinkedIn® profiles of each professional.

The main objective was to draw a map of undergraduate teaching in the country, both quantitatively (number of professors per autonomous community and university) and qualitatively (type of teaching provided). In this respect, not only did we inquire about the professional profile of the teachers (associate professors/tenured professors/full professors), but also about the type of branch of knowledge in which they carried out their university activity, that is, whether they belonged to Surgery or Pediatrics departments, or whether the teaching of Pediatric Surgery was developed in a specific way.

To simplify the results and maintain certain confidentiality, we dispensed with breaking down the data by provinces/cities or by universities. Our objective was to offer a more general image and to avoid the idiosyncrasies of each teaching unit at each university.

In many departments and units, we encountered surgeons supervising medical students' internships (usually referred to as "Clinical Rotation"). They were not included in this list because of their varied names (internship attaché, internship associate, internship manager, or internship tutor, etc.), due to their very different degree of involvement, and because, in most cases, this work does not involve a contractual relationship with a university, is not remunerated, and is only recognized at the level of career and professional development. We also dispensed with non-specialist postgraduate teaching (master's degrees, university expert degrees, etc.) for the same reasons.

The data on the accreditation level of pediatric surgeons with university activity was provided by the teachers themselves.

## RESULTS

Today in Spain, the Degree in Medicine is taught as a degree program (which includes Surgery) in 55 universities, 38 public and 16 private, and one public center with a degree program<sup>(1)</sup>.

Before the start of the 2023/2024 academic year, and through this work, we identified 33 pediatric surgeons with regulated university teaching. Except in one case (full professor of Pediatrics, with a tenured position), all of them teach as associate professors in different departments, mainly in Pediatrics or Surgery and, therefore, with temporary, non-tenure-track employment contracts. There are no more professors, whether tenured or not, much less full professors.

Regarding the geographical distribution of pediatric surgeons with university teaching, there are areas where the volume of departments/operating surgeons does not



**Figure 1.** Number of pediatric surgeons per community in public universities in Spain (+ in private institutions).

correlate with their presence in the academic environment and areas of total absence (Fig. 1).

If we take into account the number of universities with a degree in Medicine in their academic offering, 55 in total, only 18 of them (16 public and 2 private) have the possibility of at least one specialist in Pediatric Surgery teaching undergraduate courses, even if they are not specific in the subject. Once again, the contrast between the data and what is expected is striking, especially considering that most pediatric surgery professionals practice in tertiary hospitals, mostly university centers.

It is challenging to establish the percentage of specific Pediatric Surgery subjects taught by each of these professors, and the answers we obtained have been ambiguous in some cases. Two-thirds of the teachers report teaching subjects in our specialty. However, they also teach subjects that are more general or outside our body of knowledge. The remaining third teaches general subjects of Surgery, Pathology, Pediatrics, Physiology, and Anatomy.

In practical teaching (clinical rotations), we found that, curiously, almost all the answers indicated that they were included in surgical subjects, with only a minority of departments reporting that the rotations were coordinated from pediatric departments (only two departments).

Only three universities in Spain (six surgeon-teachers) include a *specific* subject of Pediatric Surgery as such, but with no link to a university professorship and as an optional subject in different stages of the curricular development.

Regarding departmental affiliation, most of the pediatric surgeons teaching at the university level included in this study, 16 in total, are integrated into Pediatrics Departments, which include the subject of Pediatric Surgery in their undergraduate teaching in a hidden way, without making specific mention of it. A smaller number, 10 professors, are assigned to Surgical Departments. Apart from those, there are others with specific teaching activity and a surgeon who teaches in another branch of knowledge (Fig. 2).

66% of pediatric teaching surgeons occupy the only position offered at their university. For the rest, this number ranges from two to five, as shown in figure 3. This “isolation” has implications for educational planning that will be discussed later.

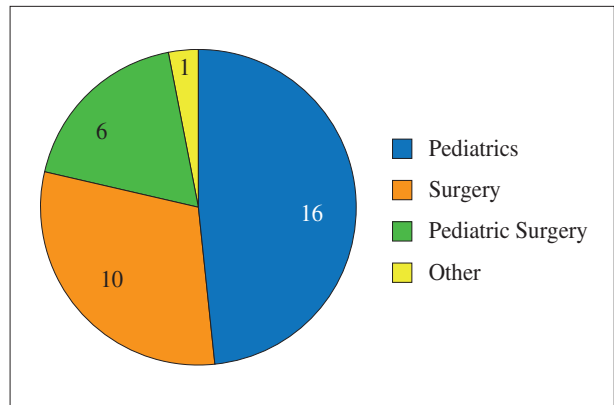
## DISCUSSION

Surgeons in general (and pediatric surgeons in particular) are now obliged, in a regulated manner, to justify a number of specific surgeries and care activities throughout our training plan (Internal Medical Resident program, MIR, in Spain). During this period, it is challenging for surgeons in training to sufficiently dissociate themselves from the care load to begin their research and academic careers, which should be a continuum of undergraduate studies. For this reason, the mere attainment of a doctorate, currently a prerequisite for university teaching at the undergraduate level, is a very difficult task<sup>(2,3)</sup>.

This care/research duality transcends the borders of Spain and our specialty<sup>(4-6)</sup>.

The absence of works investigating the situation and problems of teaching different surgical specialties in university settings is striking. In this circumstance, our specialty is no exception<sup>(7)</sup>.

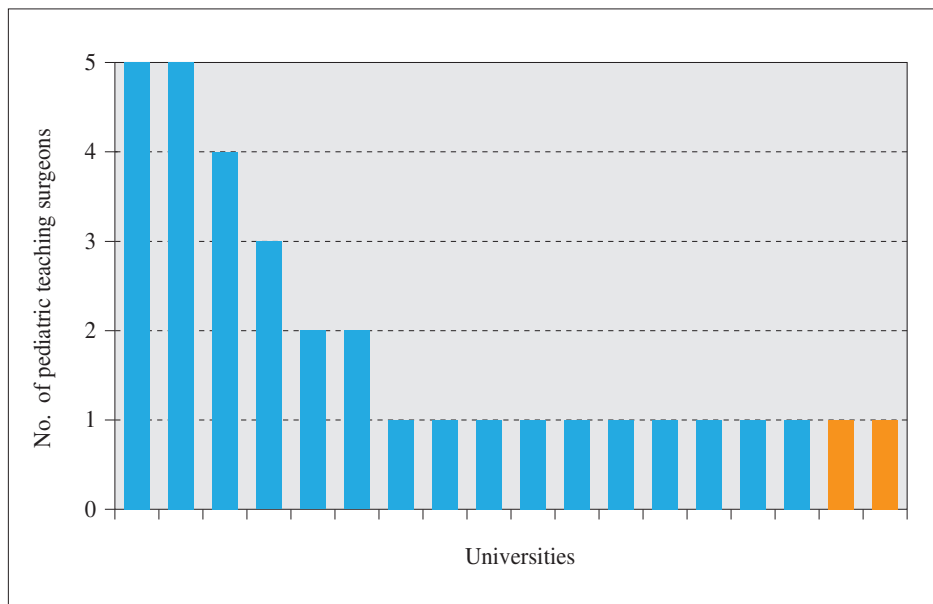
The results of our work show that there is no balance between the level of assistance in our specialty in Spain and its representation in the universities. This is a handicap for the incorporation of new specialists, who are entirely unaware of the knowledge of our specialty and its mere existence. Thus, it is unsurprising that our new residents join with very high positions in the annual MIR election<sup>(8)</sup>.



**Figure 2.** Distribution of teaching surgeons according to fields of knowledge.

The solutions to this global problem, apart from the support that can be provided by scientific societies from the educational point of view and national commissions from the legal point of view, must come from the universities themselves and, even more so, from specific individual departments of Pediatric Surgery, with accredited professors and full professors with civil servants attached to the university and positions linked to university hospitals, in line with what is happening in other European countries<sup>(9)</sup>.

In parallel to what is proposed in other surgical and medical specialties<sup>(10,11)</sup>, medical schools should aspire to offer pediatric surgery as a compulsory subject in all centers, taught by pediatric surgeons, and this theoretical facet should be complemented with specific practices in hospital



units. For this reason, in the same way that the National Commission accredits units for specialized teaching, the centers where undergraduate students are taught should be accredited and audited to guarantee minimum quality standards for healthcare teaching and research<sup>(12)</sup>.

We are faced with a context in which medical students are increasingly moving away from surgical specialties, both nationwide and internationally<sup>(13)</sup>.

We considered which factors impact the decision of these students when choosing a surgical specialty. Among them, the moment in which they have their first contact with surgery (surgical internship), the presence of surgical tutors (*mentoring*) who show the benefits of our work, and the personal conditioning factors that increasingly have more weight in the choice (prospects for personal and professional development, salaries, workload, etc.) stand out<sup>(14-16)</sup>.

The fact most surgeons teach as individuals greatly complicates the implementation of educational strategies, the coordination of care, research and teaching tasks, and generational turnover. It is not unusual that consolidated positions occupied by colleagues become extinct in the absence of replacement, especially with the current difficulty for accreditation that we will discuss below.

Since the Spanish National Agency for Quality Assessment and Accreditation (ANECA) was created by the Organic Law of Universities (LOU) of 6/2001 and implemented through the LOMLOU of 4/2007, access to university bodies in Health Sciences has been regulated and, to a large extent, made difficult for all specialists in the surgical and medical branches<sup>(17)</sup>.

Surgeons have been lumped together with other branches of knowledge that are not strictly medical (Biology, Immunology, Genetics), which develop a robust research activity as an inherent part of their work and can access accreditation systems easily. Physicians in general (and surgeons in particular) are being swept out of Spanish medical schools due to this circumstance. It is estimated that 43% of physicians will leave teaching in the next five years, a figure that rises to 55% in the case of associate professors<sup>(18)</sup>.

To sum up, if we intend to reverse the situation of marginality that our studies present in Spanish universities, we should implement mechanisms aimed at:

- Considering undergraduate teaching and primary and surgical research as essential in all Pediatric Surgery departments, establishing control and accreditation mechanisms for the corresponding units.
- Encouraging the incorporation of young specialists into research and teaching careers, mainly through doctoral studies.
- Integrating the studies of Pediatric Surgery as a separate subject, ideally transversal and mandatory, and specific surgical rotations of all students of Medicine and Surgery in our healthcare departments.

- Incorporating technical support offices in university hospitals to facilitate access to the funding and resources required for clinical research.
- Demanding a change of course in the accreditation systems that allow surgical professionals, whose main activity is healthcare and not research, to access the category of full professor and university professor.

This is a complex task and, therefore, has to be implemented jointly by the scientific societies, the national commissions, the health and educational authorities, the universities, and, above all, those of us surgeons who are dedicated to university teaching. We cannot be complacent and we must fight to ensure that the best specialty studies reach the best students in a real and generalized way.

## ACKNOWLEDGMENTS

This work would not have been possible without the invaluable collaboration of dozens of fellow surgeons, all friends, who provided most of the data presented.

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