

Applications of Digestive Endoscopy and Ultrasound in Medical and Surgical Pathology - from Practice to the Medical Education of Future Practitioners

Habilitation Thesis

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SUMMARY

This Habilitation Thesis represents my scientific and research activity carried out after the defense of my doctoral thesis in October 2011 and the confirmation of the title of doctor (PhD) in the field of medicine by order of the Romanian Ministry of Health no. 6468 from 07.12.11.

The scientific part of the thesis, structured with three research directions, reflects diversity, multidisciplinary and innovation, specific characteristics of my professional and academic career over the last 13 years. My basic medical training was carried out in the field of internal medicine and gastroenterology and resulted in the title of senior physician obtained in each specialty in 2013 and 2017. Both medical fields allowed me to learn and apply into the daily practice two types of investigations – digestive endoscopy and ultrasonography, which opened my horizon for the research activity.

The conventional upper gastrointestinal endoscopy and the method with magnification represented the core explorations in my training as a gastroenterologist, for both my PhD thesis and two of the research grants I participated in. Later, during the last years, many results obtained from the examination of large groups of patients allowed me to expand my area of interest, towards the diagnosis and prognosis of inflammatory bowel diseases. The thesis presents the results of two studies focused on the association between C-reactive protein and its isomeric form with Crohn's disease and ulcerative colitis, both through the direct identification for the first time of mCRP molecules in the intestinal tissue sampled through biopsies, and through the association of these biomarkers with the risk of cognitive decline and neurodegeneration in inflammatory digestive pathology. Digestive endoscopy also represented an opportunity for interdisciplinary collaboration with research teams interested in bariatric surgery. The present thesis includes two studies focused on the application of laparoscopic sleeve gastrectomy and laparoscopic greater curvature plication as therapeutic solutions in patients with morbid obesity.

By obtaining in parallel the certificate for general and special ultrasonography, as well as the training in the field of musculoskeletal ultrasound at the SIUMB Musculoskeletal Ultrasound School within the Rizzoli-Bologna Orthopedic Institute and in the field of interventional ultrasonography at UMF Iuliu Hațieganu Cluj Napoca, I got the premises for starting clinical research in digestive pathology, but also for the collaboration with teams of researcher from surgery, endocrinology and orthopedics-traumatology. The thesis presents the results of a variety of studies in which ultrasound exploration has successfully participated in various stages of diagnosis and/or monitoring such as: the diagnosis of developmental dysplasia of the hip in newborns and infants by using the Graf method, the identification of traumatic musculo-articular pathology (especially regarding the knee and shoulder

joint), exploration of the abdominal wall and monitoring of postoperative wounds, examination of the thyroid and parathyroid glands, as well as the diagnosis of special medical-surgical cases such as giant digestive tumors, anatomical variations with accessory tissues of the hepatobiliary structures, or extensive digestive neoplastic pathologies that required multivisceral resections.

The academic activity that I have carried out since 2005 within the UMFST G. E. Palade Tg. Mureș included an evolution from the degree of assistant to associate professor, but also a progressive interest for university management. The chance to complete the postgraduate medical education program at the University of Liverpool as a master's student in the period 2014-2016, as well as participating for 4 years as an associate teacher in the training program run by the Academic Training Center in Ludwig-Maximilians University, Munich (Germany) allowed me to deepen the training concepts in the medical field and determined the publication of scientific articles, books and the involvement in projects focused on this innovative field for Romanian university education. The thesis presents an x-ray of the medical educational system in Romania published in the *Medical teacher* journal, as well as the exemplification of the personal interest in the development of the application of the soft-skills concept in the training of young doctors from any medical and surgical field.

The final part of the habilitation thesis includes future personal directions for scientific, academic and professional development. This chapter describes the desire to continue the research directions explored until now, as well as my plans to expand interdisciplinary and international collaborations. An individual sub-chapter refers to the administrative activity that I carry out since 2019 for the branch of our university in Hamburg and which, in addition to listing new directions for strengthening and expanding the project, exposes the idea that all innovative elements applied in the academic management can become opportunities for me to continue to elaborate valuable publications in the field of medical education.