“CAROL DAVILA” UNIVERSITY OF MEDICINE AND PHARMACY BUCHAREST
DOCTORAL SCHOOL
MEDICINE

HABILITATION THESIS

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Associate Professor
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INOVATIVE INTERDISCIPLINARY REASERCH IN RECONSTRUCTIVE SURGERY, FROM TISSUE TRANSPLANT TO POSTBARIATRIC SURGERY

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HABILITATION THESIS ABSTRACT

Looking back on it, getting into plastic surgery was partly based on chance or fate, but considering this I think of myself as a lucky person from this point of view. I liked it from the beginning and even more as time passed and got to unravel its “secrets”. It is also true that I could make this choice because I had gotten a very big grade at the residency exam (4th in the country), but it’s also true that I could have picked anything else. Yet life has led me down this path which also proved to be very fitting and I strived to give it all I had and achieve excellence in this speciality. I started my residency in 1995 at “Bagdasar-Arseni” hospital, which was just transformed into a interdisciplinary hospital form a single speciality one – neurosurgery. This being the case, a plastic surgery compartment was created. This coincided with the arrival of Dr. Ioan Petre Florescu, a plastic surgery consultant with over 20 years’ experience who came from the plastic surgery “mother” hospital – Grivita. At that moment I thought that this was a great opportunity to learn from a very experienced surgeon and also to get a lot of experience myself, directly, seeing that the workload was immense and the staff was small. At first the surgeon staff was very small – one – but it got bigger (five surgeons) as my residency ended.

During my residency I began to unravel the mysteries of trauma surgery at first because it was an emergency hospital and afterwards the mysteries of chronic pathologies, which was extremely diverse and interesting, skin and soft tissue tumours that needed excision and then to reconstruct the defects. This is how I discovered the beauty and sometimes the spectacular side of reconstructive surgery, in which I dove in thoroughly. Reconstructive microsurgery became a passion and I made it a personal ambition to be great at it.

At the same time I had the opportunity to take part in aesthetic surgeries, in a time when aesthetic surgery was at it's beginning in Romania. This opportunity came through because for a short time, a very ambitious young surgeon, Dr. Dana Jianu was a member of the Bagdasar-Arseni collective and started doing aesthetic surgeries in the hospital. She was keen in practicing aesthetic surgery and she achieved her goal by leaving the hospital and opening the first aesthetic surgery clinic in Bucuresti. In the period she worked at Bagdasar hospital, I assisted her in all her surgeries, which a great opportunity for that time.

Immediately after the specialty exam, in 2000, I participated in a microsurgery course organized in Timisoara by Dr. Mihai Ionac, with theoretical and practical knowledge, with the help of which I acquired the necessary skills to perform microsurgical sutures, which are so important for the success of interventions of reconstructive surgery. Later, I was part of the reconstructive microsurgery team in the plastic surgery department of the "Bagdasar - Arseni" hospital, which was formed and developed quickly due to the important case series that the neurosurgery and orthopaedic departments provided us. I performed many free microsurgical transfers during that I time and at the same time training period, which gave me confidence and helped me to want to improve my techniques and implicitly the results.

In 2001 I started my doctoral studies at the "Victor Babes" University of Medicine and Pharmacy in Timisoara, under the guidance of Prof. Petru Matusz, the title of the thesis being "Microsurgical free transfer as a method of anatomical and functional reconstruction of postexcisional defects in the head and face ", a work-argument in favour of the role of reconstructive surgery in solving complex cases with increased gravity. The anatomical study that I carried out during the preparation of the doctoral thesis consisted of injections of the arterial trees in human cadavers, with the subsequent highlighting of the vascular pedicles that are the basis of the axial or freely transferred flaps from the head and neck.

The context of that time meant that after about a year I had the opportunity to continue my doctorate in Bucharest, changing my supervisor as well. Thus Prof. Dan Mircea Enescu was the one who guided my steps further and who helped me to complete a work that combines the theoretical part with the practical one. The

theoretical part represented a quintessence of the current state from that time regarding the existing knowledge in the specialized literature on the subject. The practical part was represented by the case series that I managed to collect from the daily surgical activity of the Clinical Hospital "Bagdasar-Arseni" Emergency Department, where I was working at that time. It comprised of patients with extensive cutaneous tumours at the level of the cephalic extremity, neglected or relapsed, whose surgical solution required bringing healthy tissues from other regions of the body, to cover large defects, the local or locoregional reserves being completely exceeded.

The difficulty of the cases consisted in trying to obtain not only a convenient result from a functional point of view, but also an aesthetic one, because the facial defects were generally complex, including important functional structures for the patient, which had to be sacrificed in order to obtain a complete excision.

The cases were argued in detail individualy, demonstrated that sometimes a courageous attitude can improve the biological and social condition of the patients, even if the risks assumed by the anesthetic-surgical team are high. Although a complete cure of the lesions was not always obtained due to the depth of the tumor extension, a real comfort was gained for some patients who had become isolated from their family and social environment due to their appearance and the unpleasant smell of the tumours.

The peri- and intraoperative problems we faced were presented in the paper, as well as the results obtained. The originality of the work consisted in approaching these borderline cases, in which, although the patients generally had a good biological condition, they presented extensive skin tumors, invading both the surface and in depth, thus generating large postexcisional defects that posed reconstructive challenges. The good results obtained and the satisfaction of the patients supported our idea that the efforts and risks are worth taking as long as we hope to obtain real benefits for the quality of life of the patients.

I completed the doctorate, with the presentation of the thesis in the public meeting, in 2007, receiving the title of doctor of medicine towards the end of the same year.

In order to be able to continue the research in this field that captivated me more and more, in 2010 I enrolled in the postdoctoral research program "Supporting postdoctoral research in the field of reconstructive transplant surgery (POSTDOC-

TRANSPLANT)", a project funded by the European Union and led as project director by Professor Ioan Lascar. My postdoctoral research topic consisted in "The use of tissue transplantation - allografts - (bone, cartilage, skin, etc.) associated with locoregional or freely transferred axial flaps in head and face reconstructive surgery". The highlight of the research I carried out within this project was the publication of an article in No. 6 of Nov-Dec 2011 of the magazine "Chirurgia" with the title: "Tissue transplantation in face reconstruction", authors: Carmen Giuglea, I.P.Florescu, S.Marinescu , I. Lascar.

The paper "Axial flaps versus free flaps in lower face and cervical region reconstruction after extended oncologic resections".was presented at the XVII Congress of IPRAS (international society of plastic and reconstructive surgery) from February 24 - March 1, 2013 in Santiago de Chile. The paper also referred to the research activity carried out during the postdoctorate studies, regarding the use of allografts as reconstructive modalities in face surgery, as well as the efforts that would be necessary in order to create the conditions for a future face transplant center in Romania.

My surgical career was permanently doubled by a scientific interest, materialized by works and presentations at various congresses and conferences in the country and abroad. Thus, I published a number of 103 scientific articles, of which 28 were published in Thompson Reuters indexed journals, Core Collection, another 50 in journals indexed in international databases and the remaining 25 articles in non-indexed journals. I was also the co-author of 5 published books: "Dupuytren's disease", 1992, "Current problems of surgical infections", 2000, edited by Prof. Dan Setlacec, "Questions and answers from recovery/neurorehabilitation, physical medicine and balneoclimatology, in adults and the elderly, and from geronto-geriatrics" 2010, under the editorship of Prof. Gelu Onose, "Mechatronic orthotic device, concept, premises and functional constructive aspects", 2012, under the editorship of Prof. Gelu Onose and Plasmonics, spintronics and label-free spectroscopies - lessons to be learned for interspecies discrimination” – OPTOELECTRONICS INTO A POWERFUL ECONOMY (Book of proceedings), 2020.

I also held 176 presentations at national and international congresses and conferences.

It is also worth mentioning that I was also involved in numerous research projects, being principal investigator in 9 international multicenter studies and sub-investigator in 9 other studies. I was also part of the research team for national grants as project manager (1) or member of the research team in 3 projects. In the same context, my participation as a researcher in a postdoctoral project financed by European funds should also be recalled.

From the point of view of my involvement in the didactic activity, it started in 2000 at the "Bagdasar-Arseni" Emergency Clinic hospital, when the department where I worked became a department that could also train young residents. Later, in 2007, with the transformation of the plastic surgery department into a university clinic, didactic activity with the students began. From then on I participated both in the preparation and even in the teaching of some courses, as well as the practical works for the students. In 2010, I became a lector in the same clinic, but in the following year I moved to the "Sf Ioan" Emergency Clinical Hospital, where there was a non-functional plastic surgery department within the general surgery department. Through my move to St. John's Hospital, the plastic surgery department became the discipline of plastic surgery, and the didactic activity slowly, began to develop from that moment. In 2013, the department turned into a full ward, and since 2020 I am a assistant professor and the head of the plastic surgery clinic in the "St. John".

Resuming a bit of my professional career, I have to say that after graduating from the UMF "Carol Davila" university in 1993, I completed a year of internship, after which I took the residency exam in 1994, when I entered the 5-year training period in the specialty of plastic surgery and reconstructive microsurgery, which I performed mostly in the "Bagdasar-Arseni" Emergency Clinical Hospital. In the last year of residency, I took on-the-job exam in the department of the same hospital, where I stayed to continue my work. In 2004 I became a consultant, and in 2010 lector within the same department. From January 2011, I moved my workplace to "Sf Ioan" Emergency Clinical Hospital, where in a few years I managed to develop the plastic surgery department, transforming it into a ward with 25 beds. The staff of the department also increased, with young specialist doctors and a university assistant, imposing themselves in front of their colleagues in the hospital through

professionalism and collegiality, and in front of the patients through empathy, skill, patience, devotion. The start of the breast reconstruction sub-program in 2014, which also included the clinical plastic surgery department in the "Sf Ioan" hospital, can be seen as a juncture opportunity, and from that moment I became the program's coordinator.

Regarding my involvement in the organizational activities of professional plastic and aesthetic surgery societies, national and international, I got involved starting in 2010, being initially for a period of 4 years the treasurer of the Association of Plastic Surgeons from Romania. Then between 2011-2014 I was the national representative of ACPR at IPRAS (international society of plastic and reconstructive surgery), national representative of ISAPS (international society of aesthetic surgery), elected president of SRCE between 2015-2017, acting president of SRCE between 2017-2019 , past president 2019-2021, elected president from 2021 until now, actively involved in the educational and organizational projects of SRCE (Romanian Society of Aesthetic Surgery).

I participated in numerous international courses out of the desire to always be up to date with the news in the field, and possibly to learn new things. In this sense, from 2016 I sought to perfect myself, even to overspecialize, in post-bariatric surgery for body contour reconstruction after massive weight loss, a subject that attracted my attention and seemed to me an unexploited niche of the future and for our country. The relationship with the general surgery clinic in the "Sf Ioan" emergency clinical hospital, a clinic with a tradition in bariatric surgery (obesity surgery), provided me with patients who needed body contour remodeling after losing a lot of weight. Hence the interest in this new branch of plastic surgery. Thus, in 2017, I participated in a 2-week internship in Rio de Janeiro, Andarai federal hospital, under the guidance of Dr. Carlos del Pino Roxo, a surgeon with great experience in this post-bariatric surgery. Although it was clear to me that I knew how to perform the corrective interventions performed separately, I still did not know the special approach that post-bariatric patients need and the method of surgical combinations that would be needed to be able to obtain the multiple corrections required in a minimum of interventions. This internship opened my eyes to all these unknowns and I returned home with the confidence that I can do this surgery myself, master it and later develop it. In this sense, I continued the approach of learning from experienced surgeons, participating in 2018 in a hands-on body contouring

course in Geneva, with Dr. Jean Francois Pascal, then in 3 master classes on the same topic at the International Congress of Surgery aesthetics from Miami (2018), of where I saw different ways of approaching the problem of body reconstruction after massive weight loss. During the pandemic, I continued to participate in online courses provided by ISAPS. In this way, I managed to outline my own approach and persevere in operating numerous cases, in order to create my own much-needed experience.

This body contouring surgery after massive weight loss has become my area of major interest, operating on patients both at the state hospital (where they lend themselves from a reconstructive point of view) and in the private clinic, because although this "pathology" is on the border between aesthetic and reconstructive surgery, it is considered by the procedure codes according to which interventions in the state hospital are settled, as aesthetic surgery and patients cannot benefit from it. Considering that these body corrections are not a fad, but are becoming a necessity, they should be included in reconstructive surgery and patients should be able to benefit from them through the health insurance system. The plastic surgery commission of the Ministry of Health raised this issue, which is under debate.

An important part of the activity is represented by the didactic activity, which must be treated with special attention because the quality of the new generations of plastic surgery specialists largely depends on it. It is very true that recently progress has been made in terms of the quality of the education in the medical system, but we have not yet managed to reach the desired level in developed European countries or in the United States. However, we often compensate at least partially for the lacks through dedication, professionalism and empathy, managing to obtain results similar to those we look at with envy from the point of view of the society in which we live. Anyway, it is important that each of us try to get involved and try to influence for the better, as much as it depends on him, to improve the conditions and choices of interpersonal relations between colleagues and especially with patients. Through our everyday attitude, we can be a good example for those around us, especially for young people in training.

There are currently some limitations in the way plastic surgery residents are trained, which depend a lot on the place where they choose or end up doing their residency. Considering that each hospital has a certain openness to one pathology or another, emergency, chronic or both, this leads to the situation in which a resident

can only familiarize him/herself with only a part of the pathology from the specialized topic, never with all of it. Not to mention cosmetic surgery. Since this cannot be done in the public hospitals where the residents carry out their activity, aesthetic surgery can only be seen if the residency supervisor takes the resident to a private clinic.
Similarly, burns care, an important part of plastic surgery, can only be properly performed in hospitals that are equipped with UFA (functional units for burns) or burn centers, which are few in the country.

Reconstructive microsurgery is an important chapter of plastic surgery, which requires technical equipment (operating microscope, microsurgery kits, loupes, microsurgery sutures), which unfortunately are not available in all clinical departments that train residents,. That's why there should be better communication between heads of plastic surgery disciplines in hospitals so that residents can rotate in a coordinated manner, to have the chance to see as much of the specialized pathology as possible. It would also be useful to support them for internships in centers abroad, which would open up new perspectives for them from the point of view of approaching pathology, but also of the doctor-patient relationship, which is different from the one here.

Until we manage to structurally modify the educational system, it is important that we do everything that depends on us so as to ensure optimal conditions for the residents, to instill in them the love for this surgical specialty, so vast and spectacular in terms of its results. We have to contribute to their training as dedicated, attentive, meticulous, ambitious, professional surgeons in a word, try to be a good example for them. They must be stimulated, encouraged, followed, but also scolded when necessary, this being the very important role of an educator, to be balanced.
In the clinic in the "St. John" hospital, I performed more and more reconstructive breast surgery interventions, having the chance to collaborate on the one hand with fellow general surgeons who perform mastectomies, and on the other hand to be part of the national breast reconstruction subprogram.

Initially, in 2014 when this subprogram was established, we timidly started doing secondary reconstructions, due to the lack of addressability, the lack of information or the patients' fears regarding reconstructive interventions. Then, little by little, we managed to form teams with fellow general surgeons, together with whom we started to perform mastectomies with primary reconstructions at the same time, as is normal for patients with this pathology. Currently, we managed to function

as a center where patients can approach with confidence, as it is known that they are treated with responsibility and professionalism.

Postbariatric surgery represents, as I said above, my area of major interest, which unfortunately I perform mainly in the private clinic, but the residents of the "Sf Ioan" clinic have access to actively participate in both these types of interventions, as well as any other cosmetic surgery in their training curriculum.

Guiding them to learn both hospital pathology and cosmetic surgery is one of my main concerns, along with educating them to behave responsibly towards patients and collegially towards the members of the team they belong to. I also always supported them when they had the opportunity to participate in some fellowships or when they requested to do internships in other hospitals where they could see pathology that we cannot treat in St. John's hospital (burns for example). I think it is very important for residents to be able to deal with any type of plastic surgery pathology at the end of their residency, because you don't know where life will lead them and they have to deal with any situation. The responsibility of a teacher is noble and important.

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