

Abstract

This present Habilitation Thesis is grounded upon my scientific research activity undertaken after the month of September 2011 when I publicly presented my doctoral thesis entitled "Anatomic and Clinical Correlations Related to the Suture of the Bronchial Stump Following Adjusted Lung Resections" under the guidance of PhD Professor Klara Brînzaniuc.

Along my scientific research activity, I have taken part in the publishing of 8 articles in ISI indexed magazines (main author in 7, co-author in 1), 21 articles in BDI indexed magazines (main author in 11, co-author in 10), 1 article as a main author published in a magazine included in B category. My article entitled "Significant Shrinkage of Multifocal Liver Metastases and Long-Term Survival in a Patient With Rectal Cancer, After Trans-Arterial Chemoembolization (TACE): A Case Report", published in the year of 2015 by the Medicine magazine (Baltimore) was awarded within the 2016 UEFISCDI competition for rewarding scientific research results. In the same year, I was involved in editing 84 papers presented at national and international scientific manifestations (main author in 28, co-author in 56). From the said 84 papers which were presented at scientific manifestations, 9 papers were rewarded within the sections where they were presented.

Along my activity, I was involved as a main author in publishing 2 specialty books at publishing houses recognised by CNCSIS and 8 chapters published in collective volumes (main author in 2, co-author in 6). I was also a member involved in performing certain scientific research projects (project manager in 1 and member within the research project team in 2).

I will briefly present my results following my activity of scientific research hereinafter:

The article "New Ways of Bronchial Stump Closure after Lung Resections: Experimental Study" was published in the year of 2013 within magazine Romanian Journal of Morphology and Embryology, ISI indexed. Within this article, I have performed an experimental study concerning new ways of closing the bronchial stump after adjusted lung resections, namely the use of bovine heterologous pericardium.

The article Allele-Specific PCR Method for Identification of EGFR Mutation in Non-Small Cell Lung Cancer: Formalin-Fixed Paraffin-Embedded Tissue Versus Fresh Tissue" was published in 2016 within magazine Romanian Journal of Morphology and Embryology, ISI indexed. The purpose of the said study was to establish the technique of determining the mutations of EGFR gene for patients with non-small lung cancer within the Laboratory of Molecular Biology integrated to the subject of Anatomy in UMF Tg. Mureş. Within the study, I have comparatively studied the technique of determining EGFR mutations in these patients both from fresh tissue, as well as from formalin-fixed paraffin-embedded tissue.

In the year of 2015, I have published the article "The Importance of Immunohistochemical Studies of Different Markers (citokerarin 7, TTF-1, p. 63) and ALK Gene Mutations for Complete Diagnosis of Patients with Lung Adenocarcinoma" in the Romanian Journal of Functional and Clinical, Macro- and Microscopical Anatomy and of Anthropology. The aim of the said article was a study through

immunohistochemical methods for non-small lung cancer patients. To that effect, I was able to highlight the ALK mutation in patients with non-small lung cancer (7.14 % of the patients considered in this study).

The article "Evaluation of Tumour Angiogenesis in Patients with Non-Small Cell Lung Carcinoma" was published in 2015 in magazine *Ars Medica Tomitana*. Within this article, I have studied by means of immunohistochemical methods the cell expression of CD34 (tumour angiogenesis marker) in patients with non-small lung cancer. The distinctiveness of this study was that nowadays specialty literature registers few of such studies concerning the cell expression of CD34 in patients with non-small lung cancer.

In 2015 I have published a review in magazine *Acta Medica Marisiensis* entitled "The Importance of the Vascular Endothelial Growth Factor as a Marker of Angiogenesis and Lymphangiogenesis in Non-Small Cell Lung Cancer". The article approaches the importance of angiogenesis and lymphangiogenesis in patients with non-small lung cancer both from the patients' diagnostic point of view, as well as from that of the therapeutic importance of angiogenesis medication.

Given the fact that I perform my medical activity in a national renown surgical clinic, I have had the possibility of meeting multiple cases with special therapeutic implications, one of these being published in prestigious medical magazines.

The article "A Fatal Complication of an Incarcerated Diaphragmatic Hernia: Pyo-Pneumopericardium due to a Gastro-Pericardial Fistula, Case Report and Literature Review" published in magazine *Annali Italiani di Chirurgia*, ISI indexed, presents a very rare deadly complication of incarcerated diaphragmatic hernia, pyo-pneumopericardium due to a gastro-pericardial fistula.

In the year of 2015, I have published an article in the *Medicine* magazine, ISI indexed entitled "Significant Shrinkage of Multifocal Liver Metastases and Long-Term Survival in a Patient with Rectal Cancer, After Trans-Arterial Chemoembolization (TACE): A Case Report". The article deals with the importance of liver trans-arterial chemoembolization in patients with liver metastases. It also shows the case of a patient with colorectal cancer and inoperable liver metastases who due to an aggressive therapeutic protocol is alive after 46 months from his first surgical intervention with no signs of tumour relapse.

The article "Chronic Impalement – Case Report of a Knitting Needle 33 years' ascension". Published in 2016 in the magazine *Journal of Cardio Thoracic Surgery* presents an extremely rare case of a foreign body which remained in the abdominal cavity of a patient for 33 years, which has trans-diaphragmatic migrated during all these years.

I have also received the permission of publication for article "The Use of Heterologous Bovine Pericardium in the Surgical Treatment of Large Tracheo-Oesophageal Fistulas and Dilaceration of the Membranous Wall of the Trachea. A Case Report" in magazine *Annali Italiani di Chirurgia*, ISI

indexed. The article shows an innovative method of surgical treatment of large tracheo-oesophageal fistulas with a dilacerations of the membranous wall of the trachea based on the reconstruction of the membranous wall of the trachea with a patch of heterologous bovine pericardium.

In 2014, my article entitled "Large Piece of Wood Board Removal and Long Term Survival in a Patient with Stabbed Thoracic Wound – Case Report" was published in magazine Chirurgia. This article presents an extremely rare case of a foreign body thoracic penetrant following a multiple trauma due to traffic accident.

For the near future, I wish to follow the research paths I have undertaken so far. In this respect, I wish to develop the following research paths:

- A prospective study regarding the incidence of EGFR and ALK mutations in patients with non-small lung cancer, as well as their importance as diagnosis factors;
- A prospective study regarding the efficiency of angiogenesis therapy, of tyrosine kinase inhibitors, and of Crizotinib in patients with a non-small lung cancer.