

National Center of Urology – Front-Runner of Georgian Medicine and Science

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(Presented by Academy Member Nodar Mitagvaria)

The urology as a separate branch of Georgian medicine was established by Professor Alexander Tsulukidze (January 22, 1888 – January 21, 1967), who played a significant role in the development of medicine in Georgia. His fundamental clinical and experimental works stimulated progress and advancement of urology in Georgia. The best example of that is his fundamental paper “Formation of a Bladder by a Plastic Shell after Total Cystectomy” published in the *British Journal of Urology* in 1964. Professor Tsulukidze was elected the Corresponding Member of the Medical Academy of the Soviet Union in 1946 and the Academician of the Georgian National Academy of Sciences in 1955. Further development of urology in Georgia is related to Professor Laurent Managadze. Under his leadership Georgian urology achieved great progress. In 2000 Professor Managadze founded Georgian Urological Association (GUA) and became its first president. For his scientific achievements Professor Laurent Managadze was elected the Academy Member of the Georgian National Academy of Sciences in 2013. Present generation of scientists continue scientific traditions established by Academician Tsulukidze and Academician Managadze. The center actively participates in international scientific cooperation. © 2021 *Bull. Georg. Natl. Acad. Sci.*

Urology, Science, Medicine

The Urology as a separate branch of Georgian Medicine was established by Professor Alexander Tsulukidze (January 22, 1888 – January 21, 1967) (Fig.1). He played a significant role in the development of Georgian medicine. After graduating from the University of Kharkov (Ukraine) in 1913, Prof. Tsulukidze returned to Georgia and started clinical work as a surgeon under the supervision of Academician Grigol Mukhadze. From 1922 to 1924 he was trained in the universities of Berlin, Heidelberg, Jena, Vienna

and Paris. His practical clinical work was extremely efficient and very important for the development of Georgian medicine. In 1927 Prof. Tsulukidze established the first department of urology in the city hospital #1. In 1953 he was appointed as the Chairman of the Department of Urology at the Tbilisi State Medical Institute.

He was a recognized authority and a true leader of urology in the former Soviet Union. Top Soviet political leaders invited Professor Tsulukidze to establish the first Institute of Urology in Moscow

and work there. However, he insisted on staying in Georgia and established the first Institute of Urology in Tbilisi, in October 12, 1959. Important to note that the Moscow Institute of Urology was established only 20 years later, in 1979.



Fig. 1. Academician Alexander Tsulukidze (January 22, 1888 – January 21, 1967).

Professor Tsulukidze was a prominent scientist. His scientific interests were focused on oncology, urolithiasis, tuberculosis, reconstructive urology, urinary tract infections, benign prostatic hyperplasia, etc. His fundamental clinical and experimental works stimulated progress and advancement of Georgian Urology. Despite political isolation of that time, Professor Tsulukidze managed to publish his works in international scientific journals. The best example is his fundamental paper “Formation of a Bladder by a Plastic Shell after Total Cystectomy” that was published in the British Journal of Urology in 1964. This journal is one of the leading urological journals up to now. This work is well known among scientists and is considered as essential in Oncology and Reconstructive Urology. It has been cited countless times and continues to be the reference for scientists working in that field.

For his scientific achievements Professor Tsulukidze was elected the Corresponding Member

of the Medical Academy of the Soviet Union in 1946 and the Academician of the Georgian National Academy of Sciences in 1955.

Further development of Urology in Georgia is related to Professor Laurent Managadze (Fig. 2) who led the National Center of Urology since 1985. All his enthusiasm, knowledge and professional activity Professor Managadze devoted to the evolution of Georgian urology. He graduated from the Moscow State Medical Institute #1 in 1967 and soon after that returned to Georgia to continue his clinical and scientific work.

The joint group of Georgian-Russian surgeons performed the first cadaver kidney transplants in Georgia in 1976. This was the first step towards his dream – to establish and develop kidney transplant program in Georgia.

Although educated in Russia, Professor Managadze realized that the progress in that field was not possible without close cooperation with the western world. In 1986, he invited two leading German Urologists to Georgia: Prof. Rudolf Hohenfellner and Prof. Peter Alken from the Universities of Mainz and Heidelberg. Both of them made huge contribution to the development of Urology in Georgia. As a consequence, despite a very difficult time, Georgian urology started progressing very fast. Transurethral surgery, oncurology, reconstructive urology, kidney transplantation, endourology, and many other branches developed under his leadership. Professor Managadze was the first in the former Soviet Union who performed: radical prostatectomy, radical cystectomy, continent urinary diversions, nephron sparing surgery, etc. Together with his colleagues he developed the original technique of continent urinary diversion called “Tiflis Pouch” that is recognized worldwide and was published in 7 different languages (Fig. 3). Under his leadership the group of international authors (Georgia, Russia and Germany) edited the textbook of Urology in Russian language. This book is considered the best Russian textbook in Urology and up to now is the

desk book for all Russian speaking urologists worldwide. Thanks to his clinical and scientific activities Georgian Urology maintained the leading position in the former Soviet Union. During many years the patients from the whole Soviet Union were coming to Tbilisi to be operated and treated in the Institute of Urology.



Fig. 2. Academician Laurent Managadze (October 14, 1944 – August 7, 2019).

In 2000 Professor Managadze founded Georgian Urological Association (GUA) and became its first president.

GUA became an active member of the European Association of Urology (EAU) thus opening its educational and other activities in the country. In 2002 Professor Managadze was awarded a title of Honorary Member of the EAU.

Besides the clinical and scientific activities Professor Managadze was a dedicated mentor for students and young urologists. He was a rector of the Tbilisi State Medical University and Chairman of the Department of Urology at the Ivane Javakhishvili Tbilisi State University. Under his mentorship several generations of successful urologists were raised. Many of them are chairmen of different urological departments in the country.

For his scientific achievements Professor Laurent Managadze was elected the Academician of the Georgian National Academy of Sciences in 2013.

After his death, Georgian Urology continues a fruitful scientific and clinical activities. The National Center of Urology is the true leader of Georgian Urological school. Raised on the traditions established by Academician Tsulukidze and Academician Managadze, present generation of scientists continue very productive scientific work. The center is actively involved in international scientific cooperation.

More than 20 projects have been performed in collaboration with the leading American and European Universities during the last decade. Several of them are worth mentioning.

The center participated in the International, Multicenter, Clinical Trial evaluating the new treatment principles of complicated urinary tract infection (EPIC Trial, Principal investigator – Prof. Archil Chkhotua, Scientific Director, the National Center of Urology). This study was conducted in 14 different countries. Results of the study were published in the New England Journal of Medicine [1].

One of the most important and notable scientific projects has been performed recently. It was the first international, double-blind, randomized, placebo controlled clinical trial performed in Urology, in Georgia. The project was accomplished by the National Center of Urology (Georgia, Principal investigator – Prof. Archil Chkhotua) in cooperation with the Balgrist University Hospital, University of Zürich, (Switzerland, Principal investigator – Prof. Thomas Kessler) and Eliava Institute of Bacteriophage, Microbiology, and Virology (Georgia, Principal investigator – Nina Chanishvili, PhD).

This project won the grant from the Swiss National Scientific Foundation (SNSF), moreover, it was rated the second most important among all projects funded by the SNSF that year. This fact

Tiflis Pouch

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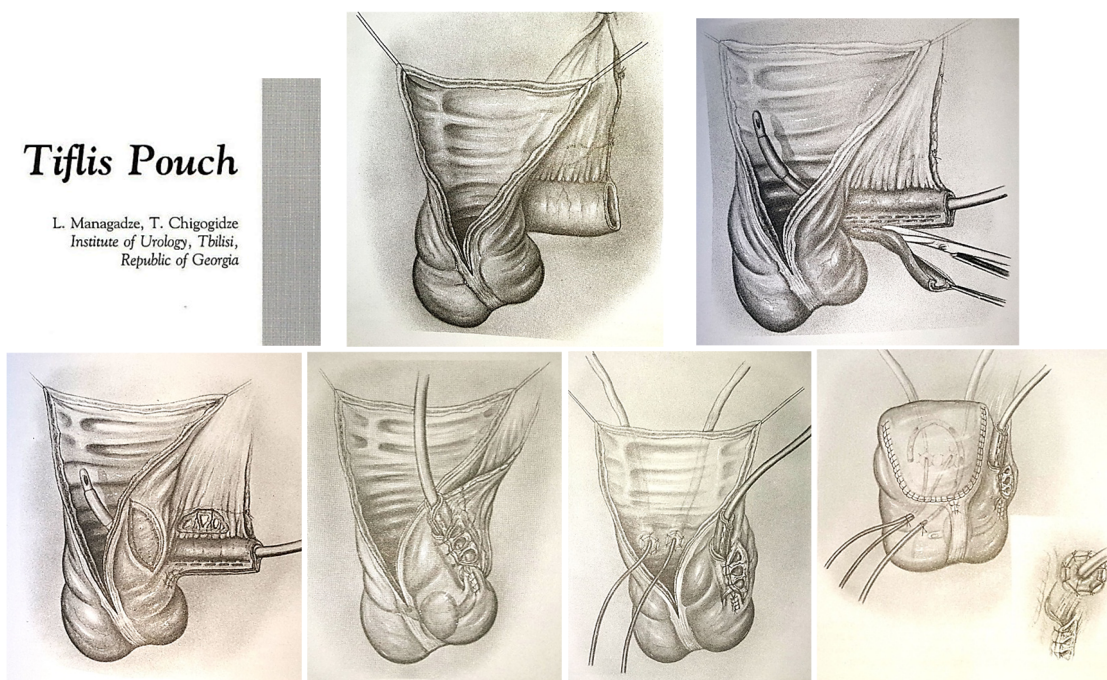


Fig. 3. Original techniques of colonic urinary reservoir formation named as “Tiflis Pouch”.

underlines the highest scientific level of the work. Results of the study have been published in *The Lancet* – highly rated international scientific journal [2].

The original scientific works performed by the National Center of Urology have been published in the edited collections and textbooks printed in the USA and Europe. One chapter in the “European Textbook of Kidney Transplantation” analyzing the future perspectives in kidney transplantation was published by the European Association of Urology in 2017 [3]. This textbook is the desk book for transplant surgeons and physicians worldwide.

Results of the clinical and basic scientific researches performed in the National Center of Urology is being published in the edited collections printed in the USA and devoted to the most important urological problems: Oncology, Transplantation, etc. [4-6].

Prof. Archil Chkhhotua, Scientific Director of the National Center of Urology has recently edited a book that analyses the latest advancements in a very important topic of vascular access in hemodialysis patients. It was published in the USA

and contains 33 chapters written by the authors that are experts in the field. They represent 16 different countries across the world. It makes this book especially unique underlying the high authority and international recognition of the editor [7].

The National Center of Urology was named by academician Laurent Managadze in 2019. Today it is the biggest in the region research and clinical institution for urological patients. The clinical activity of the center during the last year is impressive:

1. Number of surgical interventions performed – 4795. Off these:
 - a. Endoscopic 1240
 - b. Oncological – 923
 - c. Urolithiasis – 781
 - d. Laparoscopic – 339
 - e. Vascular (including kidney transplantation) – 222
 - f. Laser surgery – 90
2. Number of ambulatory patient visits – 39 822
3. Number of laboratory tests performed – 105093
4. Number of dialysis sessions – 30 666
5. Number of lithotripsy sessions – 1974.

მეცნიერების ისტორია

უროლოგიის ეროვნული ცენტრი – ქართული მედიცინისა და მეცნიერების ლიდერი

ა. ჩხოტუა

ლ. მანაგაძის უროლოგიის ეროვნული ცენტრი, თბილისი, საქართველო

(წარმოდგენილია აკადემიის წევრის ნ. მითაგვარიას მიერ)

სტატიაში აღწერილია ქართული მედიცინის ერთ-ერთი ყველაზე წარმატებული დარგის – უროლოგიის ჩამოყალიბებისა და განვითარების ისტორია საქართველოში. ქართული უროლოგიის წამყვან როლზე ეროვნული მეცნიერების განვითარებაში ხაზს უსვამს ის ფაქტი, რომ მისი ორი ყველაზე წარჩინებული წარმომადგენელი – ალექსანდრე წულუკიძე და ლაურ მანაგაძე არჩეული არიან საქართველოს მეცნიერებათა ეროვნული აკადემიის აკადემიკოსებად. სამეცნიერო ნაშრომები, რომლებიც შესრულებულია ქართველი უროლოგების მიერ, დაბეჭდილია მაღალი რეიტინგის საერთაშორისო სამეცნიერო ჟურნალებში და ციტირებულია წამყვანი უცხოელი მეცნიერების მიერ. ქართული უროლოგიური სკოლის დღევანდელი თაობა აგრძელებს დარგის ფუძემდებლების ღირსეულ ტრადიციებს როგორც კლინიკურ, ისე სამეცნიერო მიმართულებით.

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