

Elena Ivanovna Kropacheva (1926–2013): the fate of the surgeon-professor

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The article is based on a variety of sources, including archival sources, and presents an academic biography of doctor of medical sciences, Professor E.I. Kropacheva (1926–2013), one of the first cardiovascular surgeons in the Khabarovsk Territory. Her work as a physician and scientist was inextricably linked with the Khabarovsk State Medical Institute. In 1959, at the institute's department of surgery, she defended her thesis for the degree of candidate of medical sciences on clinical and anatomical inconsistencies in acute appendicitis. Particular attention is paid to the versatile nature of Professor Kropacheva's scientific work in the field of surgery, one of the pillars of which was surgical treatment for acquired heart defects. In 1973, she became one of the first in the Far East to defend a thesis for the degree of doctor of medical sciences in cardiac surgery. The thesis describes the evaluation of the myocardium's functional state in patients with rheumatic heart disease in the process of establishing indications for surgery. The article also examines the activities of Professor Kropacheva's scientific and practical clinical school, which was created at the Khabarovsk State Medical Institute's department of hospital surgery, and which she chaired for many years. The school's leading research areas included emergency abdominal surgery, in particular, the treatment of peritonitis of varying complexity, gastric ulcers, and duodenal ulcers, as well as the immunological aspects of diagnosis and treatment in surgery. The authors note that during Professor Kropacheva's many years of fruitful teaching, numerous skilled surgeons and scientists were trained.

Keywords: *history of surgery, cardiac surgery, abdominal surgery, surgical school, E.I. Kropacheva*

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Historically, the most “unwomanly” profession in medicine was that of the surgeon. Turning to the roots of medical practice, one can see that in ancient times and in the Middle Ages women held a secondary position in medicine, and all the more so in surgery, where religion added an additional taboo on women performing “bloody” operations. As battlefield medics, men also played the main role in providing medical aid in the theatre of military activities [1]. It continued in this way right up to the end of the 19th century,

when it became possible for women to receive an advanced medical education. Among the graduates of medical schools appeared the first accredited female surgeons, Doctors of Medicine and even professors of surgery [2]. Today female doctors are not uncommon, but in surgery, and particularly cardiovascular surgery, there are as before far fewer women than men. Out of 1,000 curricula vitae of Soviet and Russian Doctors of Science in the field of cardiovascular surgery, the biographies of women make up only 4.5 percent [3, p. 294], and their fortunes are destroyed by the stereotypes that have formed around the role and capabilities of women in surgery.

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July 2016 marks 90 years since the birth of Professor Elena Ivanovna Kropacheva — one of the first cardiovascular surgeons in the Far East, as well as an educator, an organizer of medical research and the head of the department of hospital surgery (1975–1997) at the Khabarovsk State Medical Institute (KSMI; now the Far Eastern State Medical University, or FESMU) [3, p. 294]. Using various sources, including archival ones, this article attempts to delineate the crucial stages in the life and work of Professor Kropacheva (Fig. 1).

Path to Surgery

Kropacheva's destiny cannot be separated from the paths of those who lived through childhood and adolescence in the years before and during the war. She was born on July 2, 1926, in the town of Velikiye Luki in the Leningrad region to the family of a military officer. In Leningrad, she completed her lower grades in School No. 2,¹ and then, when her father was transferred to the Far East, she moved with her parents to Khabarovsk [4, p. 162; 5 p. 229].

Kropacheva remembered that in the first months of her life in Khabarovsk there were always many guests in their large apartment in the “general's” house in the city center. In 1938, her father, Lieutenant General Ivan Ionovich Kropachev, head of a political department and member of the War Council of the Special Red Banner Far Eastern Army, was arrested for “espionage on behalf of the German and Japanese intelligence services” and jailed for 10 years. The family of the disgraced general (his wife, mother-in-law and daughter) were given a “new apartment” in a traditional Chinese hut. Elena Ivanovna only saw her father 16 years later.²

¹ FESMU archive, Kropacheva's personal student record.

² In the late 1940s, after the second wave of repressions, I.I. Kropachev's sentence was extended. In the mid-1950s, Kropacheva's father was rehabilitated and his title and party status restored, but his health had been ruined in camps in the Komi Autonomous Soviet Socialist Republic and Kazakhstan [6], and he passed away in 1962 (FESMU archive. Op. 27. D. 467. P. 46). The date of Kropacheva's mother's death is unknown.



Fig. 1. Elena Kropacheva (1926–2013).

From the archives of the FESMU Museum.

In secondary school, Lena Kropacheva took an interest in the hard sciences. With her excellent mathematical abilities, she dreamed of becoming an aircraft designer [4, p. 162], and after school she intended to enter one of the technical universities in Moscow. An unspoken ban on children from families of the repressed entering engineering schools rerouted her plans and professional future. In 1944, after graduating with distinction from the Girls' Secondary School No. 35 in Khabarovsk, Elena — at the urging of her friends — applied to the Khabarovsk State Medical Institute (KSMI).³ In effect she chose her profession at random, but her choice turned out to be the right one [6].

As a student, Kropacheva time and again received honorable mentions for excellence in her studies and community service; she was a group monitor and recipient of a Stalin scholarship.⁴ In her third year at the institute, Kropacheva became a candidate member, and in 1948, she became a member of the All-Union Communist Party (later the Communist Party of the Soviet Union).

Her interest in surgery did not appear immediately. In her years as a student, the surgeon Serafim Karpovich Nechepaev (1905–1971) exerted a particular influence on Kropacheva.⁵ Later she wrote: “While still a student in the third class, I for the first time saw him in an operation and heard his lectures on surgery, which left an indelible impression. Complex clinical subject matter was articulated in literary language and

³ FESMU archive, Kropacheva's personal student record. Citation from order No. 138, dated November 14, 1944.

⁴ FESMU archive, Kropacheva's personal student record. Citation from order No. 160, dated December 4, 1948. By the order of the Council of Ministers of the Russian Soviet Federative Socialist Republic, No. 2411-R of November 20, 1948, she was approved to receive an I.V. Stalin scholarship for the 1948–49 school year beginning September 1, 1948.

⁵ Serafim Karpovich Nechepaev (1905–1971), Doctor of Medical Science, professor. From 1944 to 1948, director of the department of general surgery at KSMI; from 1950 to 1971, head of the department of faculty surgery at KSMI.

constantly substantiated with examples from practical life and presentations with patients. He taught students and doctors to think creatively yet logically, to tend to patients with sensitivity and attention. Students listened to his lectures on the edge of their seats, and for many the desire to devote their future medical work to surgery was born right then” [7, p. 9].

Kropacheva's path as a surgeon began with her student scientific society. She was absorbed by the questions of human anatomy, pathophysiology, and anesthesia. Work in scientific groups in the departments of general, faculty and hospital surgery, experiments on animals, night shifts in clinics, doing doctor's rounds and helping out during operations all further strengthened her desire to become a surgeon [7, p. 8; 8]. In the course of three years she performed her duties as monitor of the surgical group, was secretary of the board of the student scientific society at KSMI, and presented a number of papers at its meetings (“The Pathogenesis of Peptic Ulcers,” “The Life and Work of N.I. Pirogov,” “The Life and Work of A.L. Polyenov”).⁶ Kropacheva completed the first surgical operation of her life — an appendectomy for acute appendicitis — in her fourth year at the institute. From that moment on, surgery became her way of life for more than half a century. When asked about the choice to become a surgeon, Elena Ivanovna, gazing at a pre-war portrait of her father, answered very simply: “It was very hard for him there,⁷ and I wanted to pass through an ordeal too. By helping others deal with illness, I wanted to share in his suffering” [6].

In 1949, Kropacheva graduated from the institute with honours, but she was not able to get into a clinical residency for surgery because she was the daughter of an “enemy of the people.” She was hired as a doctor and laboratory assistant at a general surgery clinic (in the department headed by Nechepaev), but for all intents and purposes she was the clinic's resident physician [4, p. 162; 6; 5, p. 229].

Kropacheva worked for more than 20 years under the guidance of Nechepaev, who went on to become a professor, and made her way from lab assistant to a professor in the department [7, p. 9]. In September 1952, at the suggestion of

her academic adviser, she moved with him to the department of faculty surgery at KSMI, where she worked as an assistant professor [4, p. 162]. In the 1950s and 1960s the department had multidisciplinary clinical facilities. The main areas of research were abdominal and thoracic surgery, both planned and emergency; purulent surgery; and urology [7, p. 10]. Kropacheva not only mastered the techniques of operative interventions to treat surgical conditions; she also devoted a great deal of time to teaching and research. In her seven years as an assistant professor, she published eight scientific articles⁸ and, under the guidance of Professor Nechepaev, prepared and — on November 24, 1959⁹ — defended her dissertation (the topic: “On the Subject of Clinical and Anatomical Discrepancies in Acute Appendicitis”). In her research, she summed up the department's vast clinical material (5,557 observations), provided a clinical and anatomopathological characterization of acute appendicitis, and — for prompt diagnosis in the case of mild clinical manifestations of the condition — indicated the need to use additional examination methods (such as detecting regional hyperesthesia of the skin and performing a dermal thermometry of the anterior abdominal wall).

Kropacheva as a Cardiovascular Surgeon

In 1962 Khabarovsk began providing routine cardiac surgery. In January 1962, Professor M.A. Khelimsky¹⁰ and S.I. Sergeev¹¹ carried out the first patent ductus arteriosus ligations in the region. Later that same year, Nechepaev performed a similar operation [9, p. 11].

In 1963, under the auspices of the 3rd City Hospital in Khabarovsk, Nechepaev organized a cardiac surgery team comprising a surgeon, general practitioner, anesthesiologist and radiologist. After their training at KSMI's department of faculty surgery operations on the heart defects were introduced in the clinic. Kropacheva was

⁸ FESMU archive. Op. 27. D. 466. P. 41.

⁹ FESMU archive. Op. 27. D. 466. P. 4.

¹⁰ Mark Adolfovich Khelimsky (1898–1970) — Doctor of Medical Sciences, professor and head of the department of hospital surgery at KSMI from 1950 into the 1970s.

¹¹ Sergei Ivanovich Sergeev (1917–1976) — Doctor of Medical Sciences, professor, head of the department of general surgery at KSMI and promoter of specialized cardiac surgical care in the Khabarovsk region.

⁶ FESMU archive, Kropacheva's personal student record.

⁷ In the camps. — *Authors' note.*

on the team. However, even given her mastery of contemporary surgical techniques, she did not immediately take up heart surgery. This serious decision was preceded by lengthy reflection and assiduous preparation. In 1963, 1964 and 1968, Kropacheva received training in cardiovascular surgery at the Central Institute for Continuing Medical Education's department of chest surgery (then headed by professor S.A. Kolesnikov), which was located within the Institute of Cardiovascular Surgery at the USSR Academy of Medical Sciences in Moscow.¹² In 1963, she began to work as a docent, and on June 22, 1966, at the decision of the Higher Attestation Commission under the Council of Ministers of the USSR No. 28/p, she was awarded the academic title Docent of the Department of Surgery.¹³

The main area of Kropacheva's subsequent research was a surgical treatment for acquired heart diseases. By dint of studying electrolyte exchange and applying an array of instrumental research methods, she distinguished four levels of myocardial contractile dysfunction in patients with mitral valve stenosis, which became essential criteria for determining if surgical intervention was possible in these patients' hearts [10]. In 1971, after the death of Professor Nechepaev, the head of the general surgery department at KSMI, Professor S.I. Sergeev, became Kropacheva's academic advisor. Kropacheva summarized the data collected in this research in her Doctor of Medical Sciences dissertation (the topic: "Evaluating the Functional Condition of the Myocardium in Patients with Rheumatic Heart Disease When Ascertaining Indications for Surgical Intervention"), which she defended in April 1973 at the Bakoulev Institute of Cardiovascular Surgery within the USSR Academy of Medical Sciences. It was one of the first doctoral dissertations on heart surgery from the Far East. In April 1974, Kropacheva was conferred the degree of Doctor of Medical Science,¹⁴ and in October 1974, she was promoted to the post of professor in the department of faculty surgery.



Fig. 2. Professor Kropacheva and professor V.S. Suvorin making rounds in the clinic of hospital surgery.
From the archives of the FESMU Museum

On December 8, 1975,¹⁵ Professor Kropacheva was confirmed as head of the department of hospital surgery within the school of general medicine¹⁶ at the facilities of the Khabarovsk Railway Hospital, which she directed for 22 years. Her professional maturity and experience enabled her to not only sustain but multiply the group's existing scientific and educational traditions (fig. 2).

Professor Kropacheva's Surgical School

In 1975, the formation of Professor Kropacheva's surgical school began. Unfortunately, the profile of the patients at the Railway Hospital did not allow her to continue working in the field of heart surgery. With Kropacheva's arrival, the department of hospital surgery acquired the status of a surgical clinic, and her principal area of research became the emergency abdominal surgery.

Under Kropacheva's direction, a great deal of research was carried out. For several years the clinic studied the problem of treatment for peritonitis of various origins. These research findings found their way into publications on methods for treating peritonitis with the

¹² FESMU archive. Op. 27. D. 467. P. 8.

¹³ FESMU archive. Op. 27. D. 467. P. 33.

¹⁴ FESMU archive. Op. 27. D. 467. P. 34. Decision of the Higher Attestation Commission No. 31 on April 26, 1974.

¹⁵ Order of the Health Ministry of the Russian Soviet Federative Socialist Republic No. 1633-L on November 20, 1975; personnel order of the rector of KSMI No. 228.

¹⁶ FESMU archive. Op. 27. D. 467. P. 45.

use of detoxification in the form of forced diuresis — balanced and synchronized with the administration of hydrolyzates, macronutrients and vitamins — hemosorption and ultraviolet blood irradiation [11, p. 47; 12; 13]. The inclusion of extracorporeal methods of detoxification in combination therapies for peritonitis made it possible to lower the overall mortality rate from 10.3% to 5.6%, and in the case of severe peritonitis, from 27.2% to 14.5% [11, p. 48].

Furthermore, Kropacheva was the driving force behind research on the immunological aspects of diagnostics and treatment in surgery. This research established the exceedingly important role of non-specific antimicrobial resistance (lysozyme, beta-lysine, the complement system and others) in the development, course and outcome of inflammatory conditions of the abdominal cavity, as well as demonstrating the need for therapeutic interventions during preoperative preparation in the case of acute forms of peritonitis so as to prevent severe complications during the operation and in the early postoperative period. As an effective immunotherapeutic agent with antiendotoxic properties, Kropacheva proposed administering donated plasma with a high titer of natural antibodies to the glycoprotein chemotype Re, and a fully fledged method for determining the endotoxin-binding activity of blood lipoproteins was patented.¹⁷ The use of hyperimmune plasma made it possible to significantly improve treatment of peritonitis while reducing mortality and the frequency of secondary complications [11, p. 47; 14].

With the participation of Kropacheva, laboratories were opened at the Railway Clinical Hospital for immunological and extracorporeal detoxification on the basis of the clinic's research. The latter was later reorganized into a division of hemodialysis and efferent therapy [11, p. 47–48].

Surgical treatment for gastric and duodenal ulcers was also at the center of Professor Kropacheva's attention. From the early 1980s, with the adoption of endoscopic diagnosis in clinical practice, views on the surgical treatment of ulcers

shifted. From then on, there were three discrete areas of research at the clinic: complications in the early postoperative period and how to fight them; the improvement of endoscopic diagnosis of surgical complications and the likelihood of recurrent bleeding; and endoscopic treatment of ulcer flare-ups complicated by bleeding. The docents V.V. Ubiyennykh, N.V. Tashkinov and A.I. Khomenko; assistant professor S.I. Chichkan; and doctors V.I. Kenigfest, O.K. Kamalova and others played an active role in studying the issue. This research allowed the clinic to reduce its percentage of diagnostic errors to 0.15% and the frequency of failure of duodenal stump sutures and gastroenterostomy to 3%, as well as to perform conservative treatment on bleeding ulcers in 43% of patients, particularly those of advanced or geriatric age [11, p. 49].

Beginning in 1996, through the combined efforts of the departments of hospital surgery and therapy at FESMU, a combination therapy program for duodenal ulcers was developed and implemented, encompassing administrative, methodological and therapeutic procedures. The key elements of the program included: the diagnosis of helicobacteriosis by three methods, the introduction of a system for curing it, the selection of antisecretory agents with the help of daily pH monitoring, and the incorporation of an organ-preserving technology of surgical treatment — a radical duodenoplasty with or without antacid interventions. A registry of ulcer patients was created, and the system of medical checkups for patients with this condition was improved through the creation of “clubs for ulcer patients” in large medical centers. The results of the research on this problem were summed up in one Doctor of Sciences (A.A. Rudik¹⁸) and two Candidate dissertations (V.A. Tazalov¹⁹, M.V. Borovyov²⁰) [11, p. 49].

¹⁸ “Comparative Results of Various Forms of Surgical Treatment for Duodenal Ulcers with Complications (Indications, Methods, Complications, Near- and Long-Term Outcome”, 2002.

¹⁹ “Clinical and Functional Criteria for Selecting Acid-Reducing Operations for Patients with Chronic Duodenal Ulcer,” 1999.

²⁰ “Assessing the Efficacy of Erythromycin in Correcting the Motor and Evacuation Functions of the Stomach After Organ Preservation Surgeries in Patients with Duodenal Ulcer,” 2002.

¹⁷ Kropacheva's coauthors were V.G. Likhoded, N.N. Kozlova and A.A. Rudik (Method for determining the endotoxin-binding activity of blood lipoproteins, invention patent No. 1601582)

Following global trends in surgery, Professor Kropacheva's research team mastered complex surgical interventions for inflammatory and focal diseases of the liver and pancreas and ulcers of the stomach, duodenum, esophagus and genitourinary system, for example segmental resection of the liver to treat primary and metastatic tumors, pancreaticoduodenal resection for chronic pancreatitis, extirpation of the esophagus with single-stage gastropasty and many others. The clinic successfully assimilated the technique of "bloodless" surgery for extensive surgical interventions, which makes it possible to minimize the use of donated blood and its products [11; 15; 5, p. 103] (fig. 3).

Kropacheva helped to develop minimally invasive surgery. Under her direction, a laparoscopic cholecystectomy was carried out in the clinic of hospital medicine in 1992, the first time such a surgery was carried out in the Far East, and beginning in 1997 extracorporeal lithotripsy was performed too. In eight years, more than 200 laparoscopic cholecystectomies were performed in the clinic, while minimally invasive interventions were carried out to treat conditions in the hepato-pancreatic-duodenal zone (N.V. Tashkinov) and in the small intestine and sigmoid colon [11, p. 50; 9].

Under Professor Kropacheva's leadership, the clinic of hospital surgery became a major training ground for young surgeons in Khabarovsk and the Far East [11]. According to the memories of her colleagues, Elena Ivanovna was a wonderful speaker and an experienced and thoughtful teacher, endowed with an unusually sophisticated and ingenious clinical mind. Her powers as an educator enabled her to adapt complex educational material for students' comprehension, to convey information in a comprehensible yet accessible way, and to illuminate the pressing questions of modern surgery vividly and deeply [4, p. 163].

After retiring in 1997, Kropacheva continued to work at the department as a professor [16, p. 74]. The chief interest of her life remained the clinic's educational, clinical and scientific work: lectures and exams at the university, consultations with doctors on difficult patients, expert examinations of case histories and supervision of doctoral candidates.

In response to negative demographic trends, high mortality due to cardiovascular diseases and



Fig. 3. Professor Kropacheva operating.
From the archives of the FESMU Museum.

the population's high demand for surgery with advanced medical techniques, in 1998, a new direction was opened at the Railway Clinical Hospital²¹ — clinical angiology and vascular surgery. With the support and active participation of a member of the Russian Academy of Medical Sciences, Professor A.V. Pokrovsky at the department of hospital surgery²² began performing various reconstructive interventions on the aorta, peripheral arteries and veins (prostheses and shunt procedures of the aorta and blood vessels using autoveins, artificial implants, thoracoscopic sympathectomy, portosystemic shunt procedures and more). Every year about 120 vascular surgeries were performed in the clinic. Under the leadership of Kropacheva, in 2004 a dissertation was defended on the topic of "Minimally Invasive Thoracic Sympathectomy for Obliterating Atherosclerosis in the Arteries of the Lower Extremities" (G.A. Sharandak) [11, p. 50].

In addition to her own medical work, Kropacheva devoted a great deal of attention to fostering the younger generation. Paying tribute to her teacher and mentor Nechepaev, Elena Ivanovna embodied his ideas of outstanding attention and respect for patients. In discussions

²¹ The Railway Hospital at station Khabarovsk-1 received its "clinical" status in 1998 and since 2005 has been called the Railway Clinical Hospital at Station Khabarovsk-1, Russian Railways, a private medical facility.

²² The head of the department is S.N. Kachalov, a student of Kropacheva's.

with young medical workers, Kropacheva focused their attention on questions of medical ethics and surgery, the achievements of Russian scientists, fundamental landmarks in the history of surgery, and the doctor's responsibility for the diagnostic, tactical and technical mistakes made in their work. She drew her students into research after visiting the students' scientific circle, and they presented their work at regional and republic-wide competitions more than once [4, p. 165].

Kropacheva's remarkable qualities included honesty and frankness, intolerance of disrespect toward the service of medicine and surgery, and an innate refinement and kindness. Her authority as a doctor and scientist was undisputed. Kropacheva was a member of the Pan-Russian Scientific Coordinating Council on Surgery within the Health Ministry of the Russian Soviet Federative Socialist Republic, a member of the Khabarovsk Regional Scientific Society of Surgeons (from 1951) and a member of the Gastroenterology Task Force. "The face of Khabarovsk surgery," as she was called by contemporaries and colleagues, Kropacheva became the arbiter of sensitive medical debates, in 2004 taking charge of the Ethics Committee of the Railway Clinical Hospital [17].

A representative of the "unwomanly" profession, Kropacheva dedicated her entire life to the service of surgery. She worked as a professor at FESMU up until her very last day and passed away on April 8, 2013, at the age of 86. A complete, uncommonly captivating and exceedingly selfless person, Elena Ivanovna upheld universal human values and moral and ethical principles. She was the author of many scientific works (about 160), five instructional aids and 20 proposals for technical improvements; she held a patent

("Method for determining the endotoxin-binding activity of blood lipoproteins," 1990); and she coached three Doctors of Science and 23 PhDs, two of whom (A.A. Rudik and N.V. Tashkinov) became professors and department heads at FESMU.

Kropacheva did not stand on the sidelines of public life in the university or the city. She was elected as a deputy to the Khabarovsk City Council of Workers' Deputies six times, she was a member of the City Council committee on public health and social services, a member of the institute's Communist Party committee and an advocate, and she completed a great deal of community service through the society *Znanie* (knowledge) [4, p. 165]. On multiple occasions, Professor Kropacheva was declared the winner of socialist competitions and an *udarnik* (shock worker) of Communist labor for KSMI. She was awarded the Order of the Red Banner of Labor (1986) and an anniversary medal "For gallant labor, in commemoration of the 100th anniversary of Lenin's birth" (1970), as well as badges for "Excellence in Public Health" (1970) and "Excellence in Higher Education" (1970) and many letters of recognition and gratitude, including the Certificate of Honor from the Presidium of the Supreme Soviet of the Russian Soviet Federative Socialist Republic (1980) [19]. In 1995, Kropacheva's name and a short biography were entered into an encyclopedia of the "best people in Russia" [20], and in 2007, she was conferred the honorary title "Honored Doctor of the Russian Federation."

Kropacheva's life, in its dedication to the service of medicine, has been a shining example to many generations of young doctors in Khabarovsk and the Khabarovsk region.

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