

GROWTH AREAS

The year of 2018 is twice jubilee for B.V. Petrovsky Russian Center of Surgery: 110 years since the birth of its founder, academician B.V. Petrovsky, and also 55th anniversary of institution. In this regard, we asked the director of the center, famous cardiothoracic surgeon and the member of the Russian Academy of Sciences, Yuri Vladimirovich Belov, to tell, what the famous institution is living now, how the great surgical school influences its development and which prospects it has.

Dear Yuri Vladimirovich! This year B.V. Petrovsky Russian Scientific Center of Surgery you head marked 55 years since its establishment. For a person it's a mature age, but what about an institution? How do you assess the modern level of the center, what new technologies are introduced into clinical practice?

This year is an anniversary for B.V. Petrovsky Russian Center of Surgery – 110 years since the birth of great B.V. Petrovsky, its founder, and 110 and 55 years since its establishment. Initially, it was called All-Union Scientific Research Institute of Clinical and Experimental Surgery. Then, the Center was renamed: All-Union Surgery Center and now it is B.V. Petrovsky Russian Scientific Center of Surgery.

Fifty-five years is a mature age for a person, it is the flowering of activity. I believe, it is the same for the institution, because that rapid breakthrough made by the Center while headed by B.V. Petrovsky, is generally accepted. The rapid development we have achieved in the country has earned respect in the medical community, and occupied its place of honor in the history of the development of medicine. The startup worked very quickly. Of course, the energy of academician Petrovsky himself and his position in our state also influenced here: the Minister of Health, academician and outstanding surgeon. Knowing Boris Vasilyevich, I may say that his genius was that his energy simply overwhelmed people, including us, being young. He showed an example of how to live, not just sitting, but go through the life with initiatives, with meaning, "so that it does not hurt painfully for aimlessly lived years", as the writer Nikolai Ostrovsky said

The current degree of the Center's development is that heading the institution I am proud of the level of surgical technologies that we managed to achieve. Many valuable, rare, innovative techniques were initiated precisely here, relating to vessels, heart, and transplantation. Now extensive operations in hard-to-reach areas, with hepatoblastomas, are greatly developed. The special pride of the Center is that we perform these operations in children of very different ages, starting from one-year-old babies. We carry out not only resection, but also liver transplantation in children. It is sometimes difficult to place an adult kidney in a child's body, but we have developed such technologies that we prepare the child for transplantation and successfully implement it. The transplantation of pancreas together with the duodenum is also developing successfully in our country. We know how to do this and how to help inoperable children, with type 1 diabetes mellitus or prohibitive laboratory glucose indices in these small patients. We work with such patients, and we are ready to fight for their lives. We are ready to solve problems that previously seemed to be unsolvable.

In general, if we talk about the development of surgery, we reasonably think that the Center has the advanced position concerning national surgery, and I demand fundamentally new approaches to surgical technologies from my employees. This is adaptation of mini-invasive surgery. For instance, all operations on the lungs are performed through thoracoscopic access, and operations on the organs of the gastrointestinal tract are performed through laparoscopic approaches. The esophagus is removed simultaneously with its plasty with an aid of the large intestine. And such technologies are not a fairy tale, we do this already as routine operations. We have already developed them, now we are directing our efforts to teach as many young surgeons as possible and introduce advanced technologies throughout Russia. One of the missions of the Center which was developed by Boris Vasilyevich Petrovsky is to train surgeons and spread the technology.

Concerning valvular heart surgery, cardiac bypass surgery, here we also stand first and try to make all surgeries mini-invasive. Just imagine, even the replacement of the entire thoracic aorta is performed through mini-access, mini-sternotomy! Simultaneous replacement of the mitral valve, aortic valve, aortic arch and the descending aorta is performed through eight-centimetric incisions! The particular pride is aortic surgery, which I have developed practically from ground zero in Russia since 1993. Now, we have an experience of 3,000 operations for aneurysms of the thoracic and thoracoabdominal aorta. We successfully performed a one-stage replacement of the entire human aorta with outgoing vessels and aortic valve in several patients. Just imagine, simultaneous replacement! This is an extremely advanced operation!

Yuri Vladimirovich, the level is fantastic, indeed! N.V. Sklifosovsky Research Institute for Emergency Medicine is a multidisciplinary institution as well. How often do specialists in your center face the need to provide emergency and acute care? Is this an odd situation for the Center?

Emergency medical care is not our concept of development. The Center does not see itself in this direction, realizing that we have such powerful structures as the Sklifosovsky Institute in Moscow and the Dzhaneldidze Institute in St. Petersburg, and many city emergency hospitals. This is not the mission of our center. But if donor organs come after the death of a person, and the patient is on the waiting list, then, of course, we delay the planned operations and immediately carry out transplantation of these organs. The same is about complex types of aortic

ruptures in patients with acute aortic syndrome. These patients have the priority in treatment, and sometimes we provide radical surgical intervention immediately.

Yuri Vladimirovich, the reconstruction of the center is coming to an end. Is it planned to create new structural units? How do you see the prospects for the RSCS development, how do they relate to current trends in medical science and practice?

I do not see the need to add something or change existing structural units somehow. Why? Because for 55 years of its existence, the Center of Surgery has already tested this structure. I am certainly a modernizer. I am a man who looks to the future. I just have such a character. But when everything works well, why change anything? It is necessary to make sure that these structures work even better. And with such a new Center of Surgery, equipped with the most advanced high-tech outfits, with innovative solutions, we can make a breakthrough in almost all directions.

The RSCS was one of the pioneers in organ transplantation. How do you see the development of this direction in the future? Are there opportunities for the development of new federal programs for heart, liver, kidney transplantation?

When the Center is reconstructed, we will certainly resume the heart transplant program, and possibly lung and tracheal transplantation, because it started at the Center of Surgery. It is known that V.I. Shumakov and S.V. Gauthier, academicians whose activities are connected with the Institute of Organ and Tissue Transplantation, are followers of the Petrovsky school, they are from the Center of Surgery. It is our duty to continue the development of transplantation.

This year the Center celebrates 110 years since the birth of academician B.V. Petrovsky. What are the advances the RSCS has achieved by this significant date? In your opinion, what are the main directions for the further development of the B.V. Petrovsky scientific school?

On the one hand, we are planning to develop a scientific school reducing the trauma of surgical accesses, as I said. The adoption of high-tech minimally invasive trend, right up to robotization, is in the first place. As for standard operations, standard surgical approaches, then, of course, we will continue to develop this, but in another aspect. We undertake implementation of expanded multisystem combined interventions with several competing pathologies. For example, severe heart pathology in a cancer patient, cancer in the root of the lung, with invasion into the aorta and the heart. Simultaneously, we perform the replacement of aorta, heart chambers together with the removal of the lung, metastases, etc. Here we apply standard surgical accesses, but not in standard situations. These patients are practically not operated by anyone, they are all denied, and the Center of Surgery traditionally develops technologies in these areas.

We know about the creation of the cabinet-museum of Boris Vasilyevich Petrovsky. Will the cabinet-museum be open for visitors on the days of the jubilee celebration?

It has already been created in the structure of the Center for Surgery. This is the memorial room of B.V. Petrovsky. Everything remained the same as it was, his desk, chair, things on the table, his pen. Nobody should enter there, this sacred place is fenced for us, it is impossible to touch anything, so let everything remain, as if B.V. Petrovsky, as is alive, and he is with us. His surgical suits, robes, which he received from many domestic and international organizations, his books, books of his students, gifts by doctors from other countries, well, everything is kept. It is even our duty to keep the memory of great Petrovsky.

In our opinion, our institutions have not only multidisciplinary structure and common scientific interests in common, but also outstanding scientists of the XXth century, whose names we remember with gratitude: S.S. Yudin, B.V. Petrovsky, V.P. Demikhov, S.S. Bryukhonenko. We became aware that you took a personal part in restoring the grave of S.S. Bryukhonenko at the Novodevichy Cemetery. We are deeply grateful to you for that. Could you tell us about your personal relationship to this great scientist, please?

There is our neglected building on Pogodinka Street, it is owned by the Center. Previously, there was our experimental department in this building. And it turns out, that Sergey Sergeevich Bryukhonenko worked there, judging by some historical evidence. And it so happened that, once again came to the Novodevichy Cemetery to visit tombs of my teacher B.V. Petrovsky and academicians M.I. Perelman, V.I. Shumakov, A.N. Bakulev, I suddenly saw the abandoned grave of Sergey Sergeevich Bryukhonenko. It was not just abandoned, it was simply destroyed: a small memorial plaque made of marble was cracked, curbs were destroyed, all overgrown with grass. It was clear that no one came from relatives for a long time. And I suddenly remembered this sign on the building from Pogodinka Street, which is still there on our experimental building, and everything that I know about this great man. Sergey Bryukhonenko (1890-1960) was a Russian physiologist, creator of the apparatus of artificial circulation. He was the first who invented and applied this apparatus. It is necessary to realize that without this seemingly simple device there would be no heart surgery in the world. So, a small abandoned grave is the last memory of a scientist of world significance. We took responsibility (after talking with the descendants of S.S. Bryukhonenko) for creating a new monument and maintaining the grave in good condition, so that neither we nor our descendants should be ashamed for not appreciating what this scientist did for us! And he is worthy of the fact that this artificial heart and lungs machine was depicted on the monument. Sergey Sergeevich called it autojektor. So the new monument now says: "The creator of the world's first heart and lungs machine."

Yuri Vladimirovich, we sincerely thank you for the interview. We wish the new achievements to the Petrovsky Center of Surgery, good health and well-being to all employees.