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## **ABOUT THE DISEASE, THE CAUSE OF DEATH AND THE METHOD OF EMBALMING THE BODY OF M.I. PYROHOV (to the 205th anniversary of birth) (literature review)**

**Abstract.** *literature review deals with biography, life, death and the method of embalming the body of M.I. Pyrohov.*

**Key words:** *M.I. Pyrohov, embalming.*

In December last year the global surgical community celebrated 205th birth anniversary of the great surgeon, pioneer of military-field surgery, thinker, pedagogue, public figure Nikolai Pyrohov. He lived in Ukraine more than 20 years and here still found his eternal rest.

Ukraine remembers and piously saves everything connected with the name of N. Pyrohov. Of course, over time, each of an outstanding figure is contemplated differently and an inevitable reevaluation is made. For the historian everything that touches the lifetime of such prominent figures has an extraordinary value.

Nikolai Pyrohov was born on 13 (25) November 1810, in Moscow to a major in the commissary service of I. Pyrohov. He was the youngest among his 14 brothers and sisters.

In September 1877, during a business trip to the theatre of the Russo-Turkish war to Bulgaria, where Nikolai Ivanovich carried out an inspection of the military hospitals, he met Dr. David Vivodcev, who proudly showed him his invention – apparatus for embalming corpses.

It should be noted that embalming during the military conflict had a particular importance at that time. As it is known from history, Russia has always been a proponent of grabbing foreign territories, that also takes place in our time on the example of the Crimea and Eastern Ukraine.

During these conflicts a lot of high rank

military officers and members of the Royal family died and were sent for burial to Russia. Considering the lack of rapid transport, in order to save the remains of the victims, they had to be embalmed. The same time, during the war in the Balkans, for this purpose the military doctor D. Vivodcev was serving.

In 1880, between the media went around the news what the community has decided to celebrate the 50-year anniversary of the scientific activities of the N. Pyrohov. It was decided to celebrate the holiday in May in Moscow where he was born. In order to invite the hero of the day on the celebration Professor M. Sklifosovsky arrived. On arrival to hometown N. Pyrohov discovered a surprise – he received the title of honorary citizen of Moscow. All European universities gave him honorary doctorate degrees. But the final day of the Jubilee celebration was sorrowful through the information about the disease of Pyrohov. Having lost the last upper jaw the year before, he refused to insert artificial teeth. In the place of the removed tooth a small ulcer appeared. He didn't give it a special importance. During the consultations of leading Moscow surgeons, it was recognized that the ulcer was malignant and the patient was offered to remove it immediately. The surgeons had a confidence in the successful completion of the operation. Nikolai's wife Alexandra refused surgery and

decided to look for advice of the famous Vienna surgeon Theodore Bil'rot. She took her husband to Vienna directly from the celebration. After examining the patient Bil'rot quietly and confidently convinced the patient that the disease is not serious and does not require surgical intervention. After the death of N. Pyrohov Bil'rot stated in the media that during the consultation the patient had evident signs of cancer with metastases, so surgical treatment had no meaning and that patient having cataract and other concomitant diseases just wouldn't transfer operation. Until the death of their father the sons did not know about the intention of the stepmother to embalm the body of Pyrohov. This is evidenced by the fact that his eldest son Nicholas appealed to the Holy Synod with the request to give permission for the burial of his father on the territory of the farmstead. Synod didn't grant the request.

It is also known that well in advance before the illness Nikolai expressed a wish to be buried on the territory of the family estate and 21 days before his death he reminded his relatives about it. The idea of embalming the body of her husband arised under the influence of an article in the magazine «Niva» in which was told about that in France, namely in Nantes, in recent years it became trendy to bury noble people in family crypts with mandatory embalming. With this request a month before the death she turned to capital doctor D. Vivodcev.

The letter has been preserved: "Dear Sir David, excuse me if I will upset you with my letter. Nikolai lies on the bed of death. You sent him your book about embalming to the anniversary. I hope that you will take work of embalming his body that I would have wanted to keep in the original form. If you agree, then notify me on your own terms, and when the God stops his cruel suffering, I'll inform you. If you acknowledge to come earlier telegraph then. Yours sincerely A. Pyrohova. October 25, 1881."

The second letter Alexandra wrote on November, 5, 1881, 20 days before the death of her husband. In it she again makes D. Vivodcev a request to carry out embalming and reports that did not know about a necessity to have a license on this occasion from corresponding instances.

As later wrote M. Dahl on the fourth day after death, November 26, 1881 D. Vivodcev came to the family estate and on his own methodology embalmed the body of Pyrohov. For this he used injection liquid, consisting of thymol – 5.0, alcohol – 45.0, glycerine and distilled water 2160.0 – 1080.0.

Fistly, in two stages 9 liters of solution is injected under pressure to 3 atm. in the carotid and femoral arteries in the direction opposite to the normal flow of blood in order to remove the maximum of blood from vessels, and in the second phase 6 liters of solution is injected to maximize the removal of embalming liquid dissolved in 9 liters of water.

This fluid not only preserved, but also ceased decomposition of the corpse, which already had signs. His original method of embalming the corpses of people and animals D. Vivodcev described in his monography: "Embalming and ways to preserve anatomical specimens and animal corpses", which was published in one of the Petersburg publications in 1881. Originally the method was intended to anatomical dissection and preservation of animals organs and in particular used by D. Vivodcev in his famous description of the ways of lung lymph flow of dogs. Later the method was tested for embalming corpses and especially – the eminent persons, as for example the Chinese ambassador who suddenly died while being to St. Petersburg, whose embalmed body D. Vivodcev preserved for a long time traveling to Beijing. All the necessary tools for the procedure were also designed by D. Vivodcev, including specially made folding table.

For his method on January 19, 1876 Dr. Vivodcev was awarded the first prize at the Philadelphia International Exhibition. Embalming process lasted about 4 hours. During the process of embalming the priest, two doctors and two paramedics were present. By the method of D. Vivodcev autopsy was not performed, preservative was administered under pressure by the syringes.

As later the doctor S. Shklyarevskyy, who was present at this procedure mentioned, the effect was spectacular, deceased began to look like a sleeper.

Immediately after the scientist's death his family appealed to the relevant authorities of St. Petersburg for permission to carry out the burial of her husband in the family estate. The answer came quickly, but it was reported that Pyrohov's desire can be satisfied only if his heirs give written consent that eventually in case of transition to the new owners of the estate Nikolai's ashes will be reburied in a family estate at another location. Pirigov's family members didn't agree with this proposal.

Even before the death of her husband wife Alexandra ordered a special design of sarcophagus in Austria and at the village cemetery Sheremeta she bought a land where a temporary crypt and chapel began to build.

It was a cold winter, construction work progressed slowly. Due to the fact that neither the crypt-tomb or sarcophagus has not yet been prepared, the embalmed body of Nikolai in November 29, 1881 was temporarily moved to a small, century-old, wooden church in the village Sheremetka that was able to bear several dozen people.

Finally, it was officially announced that the funeral will be held on January 24, 1882 at 12 o'clock. The arrival of deputies began, wreaths were sent. The open coffin with the body of Pyrohov was raised and transferred to the vault,

where it was installed on a pedestal by the scientist's sons, doctors and officers.

And only later, in 1885, designed by Kiev architect above the crypt the church-shrine was built, consecrated in honor of St. Nicholas where the sarcophagus was established and in which the body of Pyrohov still remains.

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