

## Professor Monastyrski N.D. (1847-1888): One of the Forgotten Pioneers of Biliary Surgery

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Today, the ingenious and untimely deceased surgeon Monastyrski's name is almost lost in the history of medicine and means little, if anything, to young surgeons. Monastyrski Nestor Dmitrievich was born in 1847 in Czerniowce and graduated from the medical faculty of the University of Vienna. Deeply inspired by the stars of European medicine and surgery: Billroth, Kaposi, Mikulicz, he became a brilliant surgeon and teacher. Monastyrski performed the first gastroenterostomy in Russia and was one of the pioneers of the aseptic method in Russia. In May 1887 he performed the historical first cholecystojejunostomy in the world. In 1888, exhausted by a tumor of the right kidney, Monastyrski insisted on surgery which resulted in his death several hours later. The department of surgery which was founded by Monastyrski N.D. in the Clinical Institute of Grand Duchess Elena Pavlovna (today – North-Western State Medical Academy named after I.I. Mechnikov) was named after him.

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Today, the ingenious and untimely deceased surgeon Monastyrski's name is almost lost in the history of medicine and means little, if anything, to young surgeons. Undoubtedly, his short life did not allow him to realize all his plans in the fullest measure; however, what he had done is enough to remain in the memories of grateful descendants.

### History of Training and Career

Monastyrski Nestor Dmitrievich (Figure 1) was born on September 15, 1847 in the settlement of Rosh of Carpathian Ukraine. After finishing high school in Czerniowce (in the Austrian Empire), he was admitted to the medical faculty of the University of Vienna and graduated on March 4, 1875. Being a student, Monastyrski was fortunate to take lessons from a famous Hungarian dermatologist Moritz Kaposi in the Vienna School of Dermatology, and he chose *Lepra tuberosa* as a subject for his PhD thesis. Nevertheless, surgery became the main focus of his interest. In those years, the founding father of modern abdominal surgery, an Austrian surgeon and young professor, Theodor Billroth, was at the head of the Department of Surgery of the University of Vienna and was famous in Europe. No surprise, then, that Monastyrski was fascinated by Billroth's charisma and was keen to become a

brilliant surgeon also. Monastyrski's countryman, a Polish-Austrian surgeon named Jan Mikulicz-Radecki, who later became a European star of surgery, worked in Billroth's clinic and helped Monastyrski get an internship in the clinic. This experience formed Monastyrski as a brilliant surgeon and researcher, and settled the vector of his subsequent works in surgery.<sup>1</sup>

Near the end of 1876, Monastyrski came to Russia and started to work as a supernumerary attending physician in Petropavlovskaya Hospital in Petersburg. Due to regulations, Monastyrski, who had a foreign medical diploma, had to present a doctorate thesis to the conference of the Medico-Surgical Academy and pass board examinations. He wrote his thesis titled "On the pathology of *Lepra tuberosa*" in the laboratory of the Pathology Institute of the Medico-Surgical Academy under the mentorship of Prof. M.M. Rudnev. In this work, which was based on thorough microscopy of the skin and internal organs of patients who died of *Lepra tuberosa*, he expressed new ideas for those times. Monastyrski stated that *Lepra tuberosa* affects not only the skin but also internal organs, and granulomas of *Lepra* are closely associated with capillaries. His knowledge in pathology is evident in his

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**Figure 3.** Professor Monastyrski Nestor Dmitrievich. Image courtesy of the Department of Surgery, North-Western State Medical Academy named after I.I. Mechnikov, Saint-Petersburg, Russia.

subsequent works as well. With the decision of the conference, Monastyrski was certified as a Russian medical doctor on May 14, 1877.<sup>2</sup>

During the Russo-Turkish war (1877-1878) he worked in the infirmary of Jassy where he demonstrated himself to be not only a talented surgeon but also a good leader. He widely implemented continuous irrigation and other antiseptic methods for the treatment of wounds.<sup>1,2</sup>

After coming back from the war, Monastyrski continued to work in the Petropavlovskaya Hospital, but as a senior surgeon. Here he increased productivity: the number of admitted patients, the surgical activity increased, and the reports of the hospital became more detailed.<sup>3</sup>

In 1885, the Clinical Institute of Grand Duchess Elena Pavlovna (today – North-Western State Medical University named after I.I. Mechnikov) opened in Saint-Petersburg. Monastyrski became a professor of surgery with the invitation by the first director of the institute Prof. E.E. Eichwald on November 20, 1885. However, he had to become a privatdozent prior to becoming a professor. For this purpose he lectured in Military Medical Academy on the topic “About traumatic tetanus”. He was awarded the title of Privatdozent by the ordinance of the academy on January 26, 1885.<sup>2,3</sup>

In the Clinical Institute, Monastyrski demonstrated himself as a brilliant surgeon and teacher. Besides lecturing surgical

theory, he spent plenty of time doing surgical research. Even before becoming a professor of surgery, he had already asserted himself with major surgical procedures, such as Ogston’s operation for the relief of genu valgum. In 1881, he performed esophagotomy with retrieval of foreign body. The same year he performed reduction of dislocated 6<sup>th</sup> cervical vertebra (in a patient with complete anterior dislocation involving both sides) under general anesthesia.<sup>1-3</sup>

### **Contributions to Medicine and Surgery**

On March 13, 1882, Monastyrski performed the first gastrojejunostomy in Russia for gastric outlet obstruction caused by peptic ulcer. However, this was the first gastrojejunostomy for benign disease in the world; all other procedures (there were four procedures in total) were performed for gastric cancer. The indication for this procedure was justified. Immediately following the surgery the patient was well; however, he died in the evening of the same day. Monastyrski performed three more gastrojejunostomies in the subsequent two years.<sup>1-3</sup>

In the middle of 1880’s, Monastyrski offered cocaine hydrochloride for local anesthesia which reduced the toxic effect of anesthetic. Monastyrski was trying to reveal the cause of traumatic tetanus in 1881-1882; he was interested in this topic since the war. In his works, he argued hypotheses which were already popular. Monastyrski wrote well before the discovery of *Clostridium tetani* by the German physician A. Nicolaier in 1884: “the cause of tetanus in whole and traumatic tetanus in particular is neither primary inflammation of spinal cord and meninges nor ascending neuritis with subsequent spinal meningitis, but seems to be associated with the influence of toxins to the spinal cord. So the question evenly arises whether tetanus develop as a result of intoxication of the organism by strychnine-like alkaloids, the formation of which in a wound is possible. In my forth case, I succeeded to ascertain that microorganisms present in the wound exudate, various tissues and the blood in a live patient. Do these microorganisms have any etiological correlation with tetanus? Are they carriers or producers of tetanic poison?”<sup>1</sup>

Monastyrski was a member of the Society of Russian Surgeons and Pirogov Russian Surgical Society. In addition to membership in the Moscow-Petersburg Medical Society, he was elected the Secretary of Petersburg Committee for Collaborative Investigation of Diseases.

In 1886, Monastyrski performed two procedures of transpleural incision and drainage of subdiaphragmatic abscess. The preoperative diagnosis of one of these cases was suppurative pleuritis. After resection of a rib and opening of pleural cavity, he realized that the abscess is located under the diaphragm. In this case he sutured the diaphragm to the parietal pleura, incised it and drained the abscess. This kind of surgery was novel at that time. On April 24, 1886, Monastyrski successfully performed gastrectomy for gastric cancer. The wound healed primarily and the patient was discharged after three weeks. At

the one-year follow-up, she was well. He performed a one-stage removal of a hydatid cyst of the liver on November 29<sup>th</sup> of the same year.<sup>1,2</sup>

### **The First Cholecystojejunostomy**

Being experienced in abdominal surgery, Monastyrski started biliary surgery. He said: “A modern surgeon, who has the advantage of asepsis, can and must take part in the management of diseases of the biliary tract.”

There is controversy in the medical literature about the surgeon who was first to perform a cholecystojejunostomy, including: Alexander von Winiwarer,<sup>4,5</sup> Otto Kappeler,<sup>6,7</sup> and Nestor Dmitrievich Monastyrski.<sup>8,9</sup> Toneto et al<sup>10</sup> reported that in 1887, almost simultaneously, two surgeons, Kappeler in Switzerland and Monastyrski in Russia, developed the technique of bilioenteric anastomosis between the gallbladder and intestine with patient survival. Two years after the first planned cholecystostomy, in 1878, performed by an American surgeon James Marion Sims, an Austrian-Belgian surgeon Alexander von Winiwarer attempted the first biliodigestive bypass by performing a cholecystocolic anastomosis.<sup>11-13</sup> J.M. Howard and W. Hess stated in the History of the pancreas: mysteries of a hidden organ, “In June 1887, the Swiss surgeon Kappeler, at the Cantonal Hospital of Thurgovia, Munsterlingen, succeeded in performing a planned one stage side-to-side cholecystojejunostomy in a jaundiced patient with carcinoma of the pancreas...Kappeler believed that this was the first cholecystojejunostomy; he could not have known that a month before, on May 4, 1887, a Russian surgeon, Monastyrski (1847-1888), had performed the same operation in a 50-year-old woman ... The Swiss surgeon, Otto Kappeler, performed a one stage cholecystojejunostomy for obstructive jaundice due to carcinoma of the pancreas in June 1887. Erroneously believing it to be a historical first, he reported it twice.”<sup>14</sup> An American surgeon John Benjamin Murphy wrote: “The priority of the operation certainly belongs to Monastyrski, for he performed his operation about a month before Kappeler, but did not publish it until eleven months after the operation.”<sup>15</sup>

On May 4, 1887, Monastyrski performed the historical first cholecystojejunostomy.<sup>16</sup> Going for surgery, it was clear for him that the extent of surgery can vary depending on the cause of jaundice. He said: “If the cause of jaundice was gallstone, we would have to incise the gallbladder, drain the stagnant fluid from it, thoroughly disinfect its cavity and remove the stone from the common bile duct. But what to do if the flow of the bile is obstructed by a malignant tumor?”<sup>17</sup> The majority of the surgeons of that time expressed that in case of the compression of biliary ducts by a tumor there was nothing to operate. Monastyrski opposed that idea writing: “In my opinion, acting in this way is not worthy of the honorable title of physician. The ideal of our profession is cure and we have to relieve the sorrow of the patients where it is possible.”<sup>17</sup> Therefore, the operation was indicated. But only two methods were available at that time: percutaneous

puncture of the gallbladder and cholecystostomy. He denied puncture due to the risk of peritonitis and wrote: “You will do a puncture, and eventually peritonitis will develop, and all this will turn out to be a disservice.” If cholecystostomy was performed “...the risk of cholemia will be eliminated, nevertheless, the patient would waste away due to continuous loss of the bile and die.” So, when Monastyrski encountered pancreatic cancer intraoperatively, he took an intestinal loop 2 meters distal to the duodenum and formed a two row anastomosis.<sup>18</sup> The operation was successful, the patient survived, jaundice was significantly reduced; however, the patient died of the progression of the tumor after two months.<sup>18</sup>

In 1886, Monastyrski started to feel the symptoms of malignant disease of the right kidney. He continued to work until he became exhausted. In 1888, in a helpless state he went to Konigsberg to Jan Mikulicz-Radecki and insisted on the surgery which resulted in his death within several hours. A brilliant surgeon and professor Monastyrski Nestor Dmitrievich was untimely deceased. Today his remains lie in the Smolenskaya cemetery in Saint-Petersburg. The Department of Surgery which was founded by Monastyrski in the Clinical Institute of Grand Duchess Elena Pavlovna (today – North-Western State Medical Academy named after I.I. Mechnikov) was named after him.

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