

#03

SUCCESS STORY

by intrasense®



Meeting with Doctor Shirokov

Vishnevskiy Institute of Surgery equips its radiology
and surgery departments with Myrian®

Doctor Vadim Shirokov is a radiologist at the Vishnevskiy Institute of Surgery in Moscow (Russia), also known as Central Military Clinical Hospital #3. The center's specialties include liver, pancreas, chest, lung, esophagus and blood vessels surgery, military care and research. One of the largest hospitals in Moscow, it has a capacity of 350 beds and performs 3,500 surgeries every year, most of them using high technology such as robotic assistance. Its radiology department is equipped with two 64 and 256-slice CT scanners and two MRI scanners of 1.5T and 3T.



Doctor Vadim Shirokov is a radiologist at the Vishnevskiy Institute of Surgery in Moscow.



We really appreciate the ease-of-use of the solution. I would definitely recommend Myrian® platform and Myrian® XP-Liver to any liver radiologists and surgeons.

Needs

All the image-based operations used to be done manually, which was very time-consuming and not always as reliable as expected. The center being a research institute, it also participated in research programs which was increasing the number of images to be visualized and analyzed and the need for quantification.

With such a high number of exams to manage, the center needed to equip both its surgery and radiology departments with a solution facilitating, automating and accelerating images visualization, processing and interpretation. Indeed, one of the center's objectives was to enable surgeons to perform 3D reconstruction and virtual hepatectomy themselves, thus allowing radiologists to focus on other activities or on more complex exams. A major part of the activities being dedicated to hepatic pathologies, it was absolutely fundamental to be equipped with the best-in-class solution for liver hepatic volume measurement and liver surgery planning.

Why Myrian®?

After benchmarking available solutions on the market, Doctor Shirokov, along with Professor Grigoriy Karmazanovsky, head of radiology at Vishnevskiy Institute of Surgery, selected Myrian® by Intrasure. Indeed, not only does Intrasure provide Myrian®, the most advanced solution for visualization and post-processing of medical images in Russian, but it also offers Myrian® XP-Liver, the worldwide leading application for liver measurement and virtual liver surgery. Its ergonomics, ease-of-use, vendor-neutrality and multimodality have also been key decisive criteria. In order to confirm Myrian® capability to fulfill the center's needs, a team of radiologists and a team of surgeons worked simultaneously on virtual hepatectomy. Outcomes of their virtual hepatic resections were compared. They showed that both team had been able to use similarly Intrasure's solution and came to the same results and conclusions.

Solution

It has been more than two years that Vishnevskiy Institute of Surgery has been using Myrian®. Today, the site is equipped with Myrian® Expert VL platform, its clinical module Myrian® XP-Liver and its added-value technological options Myrian® XL-4DNavigator and Myrian® XL-Registration:

- Myrian® Expert VL is a state-of-the-art multimodality solution for volume visualization and measurement, diagnosis and follow-up of lesions, cancers and chronic diseases. Selected by the best specialists for routine diagnosis, surgical planning, oncology and research, it offers the ultimate, state-of-the-art Intrasure technology and expertise and is a gateway to the powerful modules of Myrian®.
- Myrian® XP-Liver is the most advanced solution available on the market for automatic liver volume measurements and hepatic surgery planning. It enables the user to isolate the entire hepatic vascular systems, including portal and hepatic veins, healthy parenchyma



Vishnevskiy Institute of Surgery is one of the largest hospitals in Moscow.

and lesions, in only a couple of seconds.

- Myrian® XL-4DNavigator is used to navigate within a 3D and 4D examination, facilitating visualization of contrast uptake in tissues, in particular during acquisitions.
- Myrian® XL-Registration, an algorithm module for automatic on-the-fly registration of 3D CT scan or MRI images, applicable to both hard tissues and soft tissues (elastic mode registration).

Benefits

Thanks to Myrian® ergonomics, radiologists and surgeons have all become experts in liver measurement, virtual hepatectomy and atypical hepatic resections simulation and planning in only two to three days, contrary to other vendors' solutions. Both teams can now benefit from the automatic segmentation of the hepatic vascular systems, of the remaining healthy liver and of the lesions. These can be easily defined and followed-up, which is key to determine a diagnosis, and establish surgery scenarios in order to improve hepatectomy planning.

This is totally matching the center's needs and expectations and ensuring optimal quality of care.

The use of Intrasense solution has generated dramatic time savings for the processing of the most complex cases. Most importantly, Myrian® has facilitated and accelerated discussions and decision-making processes during multidisciplinary meetings.

The center has been using Myrian® in research programs too. As further evidence of its satisfaction and of the solution's reliability, the Vishnevskiy Institute published scientific articles based on Myrian® technology during the European Society of Gastrointestinal and Abdominal Radiology and the Russian Congress of Radiology^{1 2}.

1 *Who has to make a virtual planning before surgery of focal liver lesions?*, V.S. Shirokov, G.G. Karmazanovsky, V.D. Fedorov, M.G. Efanov, E.V. Kondratiev, V.A. Vishnevskiy; Vishnevskiy A.V. Institute of Surgery, Moscow, June 2010

2 *Problems of the diagnostics of perivascular epithelial cell tumors*, P.I. Davydenko, G.G. Karmazanovsky, V.S. Shirokov, O.V. Paklina, V.A. Vishnevskiy, Vishnevskiy A.V. Institute of Surgery, Moscow, 2013



Thanks to Myrian® features and capabilities, such as automatic segmentation of the hepatic systems and liver surgery simulation, we can get a comprehensive and reliable view of the case in a couple of clicks. This considerably helps us in choosing the best therapy and treatment for the patient.



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