

Place and Implication the Intraoperative Ultrasound in the Surgery of the Liver

P. I. Rykhtik¹, E. N. Ryabova¹, D. V. Safonov²,
D. M. Kuchin¹, V. E. Zagainov^{1,2}, S. V. Romanov¹

¹ Privolzhsky Regional Medical Center Federal Medical-Biological Agency of Russia

² Nizhny Novgorod State Medical Academy, Ministry of Healthcare of Russia

Abstract

Modern surgical technics and anesthesia care allow us to do radical operations from the patients with mass lesion of the liver. Quite often during the operative exploration of the liver there is a needs of the changing the volume of the operation. It evaluates the current possibilities intraoperative ultrasound investigation and its effect on the choice of the volume resection of the liver. We analyzed results of the 898 resection of the liver with the patients who were examined and operated in a specialized hepatology center. During intraoperative ultrasound investigation studied volume, localization and size space-occupying process, there was evaluation involvement in neoplastic process vessels of the liver. Also there was implementation of marking hepatic vein for resection of the liver. We studied incidence conversion of the plan operation after results intraoperative ultrasound investigation – 17,8 %.

Key words: Intraoperative Ultrasound Investigation, Conservative Resection of the Liver, Hemihepatectomy, Liver Lesion.

References

1. *Vetsheva N. N., Stepanova Ju. A., Zhavoronkova O. I.* Possibilityes intraoperative ultrasound examination in abdominal surgery. Med. visualization. 2012. No. 4. P. 134–136 (in Russian).
2. *Danzanova T. Ju., Sinjukova G. T., Lepjedatu P. I. et al.* Experience using intraoperative ultrasound examination in diagnostics of the neoplasms of the liver. Diagnostic and interventional radiology. 2014. V. 8. No. 3. P. 29–37 (in Russian).
3. *Zagainov V. E., Kukosh V. M., Sudakov M. A. et al.* The estimation of liver surgery results in colorectal metastases in the Privolzhskiy District Medical Centre of Federal Medico-Biologic Agency of Russia (Nizhniy Novgorod) according to International register LiverMetSurvey. Modern technologies in the medicine. 2012. No. 1. P. 61–69 (in Russian).
4. *Patjutko Ju. I., Sagajdak I. V., Kotel'nikov A. G. et al.* Hepatic resection: modern technologies in the case of tumor lesion // Annals surgical hepatology. 2010. V. 15. No. 2. P. 9–17 (in Russian).
5. *Rykhtik P. I., Safonov D. V., Zagainov V. E., Atduev V. A.* Ultrasound study of the liver and kidneys after different types of resection. Bull. radiology and radiation. 2012. No. 5. P. 26–33 (in Russian).
6. *Rykhtik P. I., Safonov D. V., Zagainov V. E., Romanov S. V.* Effect intraoperative ultrasound investigation on the conversion the volume resection of the liver. plan operation after. Internat. Nevsky radiol. meeting: abstracts. Sant-Peterburg. 2013. P. 57 (in Russian).

7. *Ryabova E. N., Rykhtik P. I., Shkalova L. V. et al.* Noninvasive assessment volume of active parenchyma of the liver at the patients with liver cirrhosis and portal hypertension as a factor of prognosis outcomes after operation portosystemic shunting. *Radiology – Practice*. 2012. No. 3. P. 77–82 (in Russian).
 8. *Donadon M., Torzilli G.* Intraoperative ultrasound of the liver. *Am. J. Roentgenol.* 2012. V. 198. No. 4. P. 398.
 9. *Frankel T. L., Gian R. K., Jarnagin W. R.* Preoperative imaging for hepatic resection of colorectal cancer metastasis. *J. Gastrointest. Oncol.* 2012. V. 3. No. 1. P. 11–18.
 10. *Ferrero A., Langella S., Giuliani F.* Intraoperative liver ultrasound still affects surgical strategy for patients with colorectal metastases in the modern era. *World J. Surg.* 2013. V. 37. No. 11. P. 2655–2663.
 11. *Kruskal J. B., Kane R. A.* Intraoperative US of the liver: techniques and clinical applications. *Radiographics*. 2006. V. 26. No. 4. P. 1067–1084.
 12. *Marcal L. P., Patnana M., Bhosale P., Bedi D. G.* Intraoperative abdominal ultrasound in oncologic imaging. *World J. Radiol.* 2013. V. 5. No. 3. P. 51–60.
 13. *Robinson P.* Hepatocellular carcinoma: development and early detection. *Cancer Imaging*. 2008. V. 4. P. 128–131.
-

Authors

Rykhtik Pavel Ivanovich, Ph. D. Med., Head of Department of Radiation Diagnostics, Privolzhsky Regional Medical Center FMBA of Russia, Nizhny Novgorod.

Address: 14, ul. Il'inskaya, Nizhny Novgorod, 603109, Russia.
Phone number: 8 (8312) 421-69-74. E-mail: rykhtik@gmail.com

Ryabova Elena Nikolaevna, Ph. D. Med, Physician of Department of Radiation Diagnostics Privolzhsky Regional Medical Center FMBA of Russia, Nizhny Novgorod.

Address: 25-3, ul. Zalomova, Nizhny Novgorod, 603109, Russia.
Phone number: +7 (951) 919-78-25. E-mail: ryabova_elen_2011@mail.ru

Safonov Dmitrij Vladimirovich, M. D. Med., Professor of Radiology Department of Faculty of Professional Developments of Doctors of Nizhny Novgorod State Medical Academy, Ministry of Healthcare of Russia.

Address: 10/1, pl. Minin, Nizhny Novgorod, 603005.
Phone number: +7 (910) 795-59-25. E-mail: safonovdv@inbox.ru

Kuchin Denis Michailovich, Physician of Department of Oncology Privolzhsky Regional Medical Center FMBA of Russia, Nizhny Novgorod.

Address: 14, ul. Il'inskaya, Nizhny Novgorod, 603109, Russia.
Phone number: +7 (905) 194-59-16. E-mail: pomc.kuchin@gmail.com

Zagainov Vladimir Evgenievich, M. D. Med., Chief of Surgery Clinic Privolzhsky Regional Medical Center FMBA of Russia, Nizhny Novgorod, Head of Chair of Surgical Diseases of Nizhny Novgorod State Medical Academy.

Address: 10/1, pl. Minin, Nizhny Novgorod, 603005, Russia.
Phone number: 8 (831) 421-69-73. E-mail: zagainov@gmail.com

Romanov Sergei Vladimirovich, Ph. D. Med., Chief of Privolzhsky Regional Medical Center FMBA of Russia, Nizhny Novgorod.

Address: 14, ul. Il'inskaya, Nizhny Novgorod, 603109, Russia.
Phone number: 8 (831) 421-82-82. E-mail: pomc@bk.ru