

VILNIAUS UNIVERSITETO DOKTORANTŪROS STUDIJŲ DALYKO SANDAS

Scientific Area/eas, Field/ds of Science	Medical and Health Sciences (M 000): Medicine (M 001)			
Faculty, Institute, Department/Clinic	Faculty of Medicine Institute of Clinical Medicine Clinic of Gastroenterology, Nephrourology and Surgery			
Course unit title (ECTS credits, hours)	Minimally Invasive Surgery 8 credits (212 hours)			
Study method	Lectures	Seminars	Consultations	Individual studies
Number of ECTS credits	-	-	2	6
Method of the assessment (in 10 point system)	<p>Presentation and evaluation of the report: the report is presented on a topic, which is selected with the coordinating lecturers (the doctoral student must analyze, review and present the latest scientific publications related to the respective topic). Criteria for evaluating the report (minimum readable score - 5):</p> <p>(a) relevance, novelty and relevance of the material submitted (2 points);</p> <p>(b) general structure and scope of the report, clear presentation of the knowledge, reasoning, brevity and specificity (2 points);</p> <p>(c) Summary, presentation and justification of conclusions (1 point);</p> <p>d) raising problematic issues, presenting the application of the reviewed knowledge in the dissertation (3 points);</p> <p>e) organization of visual aids, ability to participate in a discussion, management of questions, oratory skills (2 points).</p>			
PURPOSE OF THE COURSE UNIT				
<p>To learn doctoral students with the main minimally invasive surgeries and interventions performed in abdominal surgery. To master the methods of performing minimally invasive interventions in abdominal surgery, their stages and modifications, to study their possible complications and treatment.</p>				
THE MAIN TOPICS OF COURSE UNIT				
<p><u>General part.</u> Historical development of minimally invasive surgery (MIS). MIS ergonomics. The significance of the surgical safety protocol and the basics of patient safety during surgery. The significance of teamwork and the basics of its organization during MIS operations.</p> <p><u>Basics of laparoscopy.</u> Patient preparation, contraindications, equipment and techniques; pneumoperitoneum and its formation; features and requirements of safe electrosurgery during laparoscopic surgery.</p> <p><u>Oesophageal and gastric MIS.</u> Minimally invasive operations in the treatment of esophageal and gastric pathology: indications and contraindications, selection and preparation of patients, surgical equipment and techniques; peculiarities of patient follow-up, treatment results.</p> <p><u>Bariatric and metabolic MIS.</u> Selection of patients for minimally invasive surgery, surgical technique, treatment results, reoperation.</p> <p><u>Abdominal wall hernia MIS.</u> Minimally invasive operations in the treatment of abdominal wall hernias: indications and contraindications, selection and preparation of patients, surgical equipment and techniques; peculiarities of patient follow-up, treatment results. Laparoscopic sewing and knitting technique.</p>				

Liver and pancreas MIS. Particularities of surgical anatomy determine the possibilities to perform minimally invasive procedures (biopsy, fenestration, resection, drainage) in patients with liver and pancreatic pathology. MIS in the treatment of liver and pancreatic pathology: indications and contraindications, selection and preparation of patients, technique of operations, treatment results.

Gallbladder and bile duct MIS: indications and contraindications, selection and preparation of patients, surgical equipment and techniques; Particularities of follow-up of patients after laparoscopic gallbladder surgery, treatment results. Particularities of surgical treatment of complicated bile duct pathology. Prognosis of concomitant gallstones before cholecystectomy and choice of treatment strategy, diagnostic and treatment algorithms combining different MIS methods.

Spleen MIS: examination and preparation of patients, indications and contraindications, surgical technique; treatment results.

Colorectal MIS. Minimally invasive operations in the treatment of colonic and rectal pathology: indications and contraindications, selection and preparation of patients, surgical equipment and techniques; particularities of patient follow-up, treatment results.

MIS for urgent surgical pathology. Laparoscopic operations in the treatment of acute appendicitis: indications and contraindications, selection and preparation of patients, equipment and techniques of operations, results of treatment. Laparoscopy in patients with peritonitis: indications and contraindications, preparation of patients, equipment and techniques of surgery, particularities of the postoperative period and results of treatment. Laparoscopic operations in the treatment of perforated gastroduodenal ulcer: indications and contraindications, selection and preparation of patients, equipment and techniques of operations, features of the postoperative period and treatment results.

Standards of diagnosis and treatment in abdominal surgery. The advantages and disadvantages of minimally invasive treatment of surgical pathology of abdominal organs. Minimally invasive surgery as a day surgery procedure: indications and patient selection. Perspectives of laparoscopic operations: single trocar surgery; natural orifice endoscopic surgery, robotic surgery.

Endoscopic surgery. Endoscopic procedures of bile ducts (endoscopic sphincterotomy, lithotomy, stenting). Polypectomy, internal drainage of cavities (pseudocystogastro and duodenostomy). Endoscopic methods of hemostasis.

Innovative methods of MIS. Natural orifice surgery: transvaginal cholecystectomy, transvaginal hysterectomy, peroral endoscopic myotomy (POEM), transanal endoscopic microsurgery (TEM), transanal total mesorectal excision (TaTME). Indications and contraindications, patient preparation, equipment and results. Hybrid surgeries (laparoscopic and endoscopic techniques) are the result of collaboration between surgeons and endoscopists. Single trocar surgery: indications and contraindications, patient preparation, equipment and results. Robotic surgery: indications and contraindications, patient preparation, equipment and results.

RECOMMENDED LITERATURE SOURCES

1. Brunicaudi F.C. et al. Schwartz's Principles of Surgery, 10 Edition 2015; The McGraw-Hill Education
<http://accessmedicine.mhmedical.com/book.aspx?bookid=980>
2. Marco G. Patti, Amer H. Zureikat, Alessandro Fichera, Francisco Schlottmann. Techniques in Minimally Invasive Surgery. Springer Nature Switzerland AG 2021; p.501. <https://doi.org/10.1007/978-3-030-67940-8>
3. Recent Concepts in Minimal Access Surgery. Volume 1. Editors: Deborshi Sharma, Priya Hazrah. Springer, Singapore 2022. p.485. <https://doi.org/10.1007/978-981-16-5473-2>

4. Deepa Magge, Amer Zureikat, Melissa Hogg, Herbert J. Zeh III. Minimally Invasive Approaches to Pancreatic Surgery. Surg Oncol Clin N Am 25 (2016) 273–286.
5. Doherty G.M. Current diagnosis & treatment: surgery 14 edition 2015; The McGraw-Hill Education
<http://accessmedicine.mhmedical.com/book.aspx?bookid=1202>
6. Gustavo G. Fernandez Ranvier, Daniel Shouhed, William B. Inabnet III. Minimally Invasive Techniques for Resection of Pancreatic Neuroendocrine Tumors. Surg Oncol Clin N Am 25 (2016) 195–215.
7. Lee M. Ocuin, Allan Tsung. Minimally Invasive Hepatic Surgery. Surg Clin N Am 96 (2016) 299–313.
8. Robotic-Assisted Minimally Invasive Surgery. Editors Shawn Tsuda, Omar Yusef Kudsi. Springer Nature Switzerland AG 2019. P.346. <https://doi.org/10.1007/978-3-319-96866-7>.
9. Laparoscopic Surgery. Editors: Giusto Pignata, Umberto Bracale, Fabrizio Lazzara. Springer International Publishing Switzerland 2016. P. 97.
<https://doi.org/10.1007/978-3-319-24427-3>
10. Surgical Principles of Minimally Invasive Procedures. Editors H. Jaap Bonjer. Springer International Publishing Switzerland 2017. P. 292.
<https://doi.org/10.1007/978-3-319-43196-3>.
11. Stauffer JA., Asbun HJ. Minimally Invasive Pancreatic Surgery. Seminars in Oncology, Vol 42, No 1, February 2015, pp 123-133.

CONSULTING LECTURERS

1. Coordinating lecturer: Kęstutis Strupas (Prof. Habil. Dr.).
2. Gintaras Simutis (Prof. Dr.).
3. Valdemaras Jotautas (Assoc. Prof. Dr.).

APPROVED:

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:
29th of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė