

**Michał Pędziwiatr<sup>1,2</sup> (presenting author)**, Kamil Astapczyk<sup>3</sup>, Maciej Bobowicz<sup>4</sup>, Mateusz Burdzel<sup>5</sup>, Karolina Chruściel<sup>6</sup>, Rafał Cygan<sup>7</sup>, Wojciech Czubek<sup>8</sup>, Natalia Dowgiałło-Wnukiewicz<sup>9</sup>, Jakub Droś<sup>10</sup>, Paula Franczak<sup>11</sup>, Waław Hołowko<sup>12</sup>, Artur Kacprzyk<sup>10</sup>, Wojciech Konrad Karcz<sup>13</sup>, Jakub Kenig<sup>14</sup>, Paweł Konrad<sup>5</sup>, Arkadiusz Kopiejć<sup>15</sup>, Adam Kot<sup>15</sup>, Karolina Krakowska<sup>7</sup>, Maciej Kukla<sup>16</sup>, Agnieszka Leszko<sup>7</sup>, Leszek Łozowski<sup>6</sup>, Piotr Major<sup>1,2</sup>, Wojciech Makarewicz<sup>4,15</sup>, Paulina Malinowska-Torbicz<sup>5</sup>, Maciej Matyja<sup>1</sup>, Maciej Michalik<sup>9</sup>, Piotr Myśliwiec<sup>3</sup>, Adam Niekurzak<sup>17</sup>, Damian Nowiński<sup>3</sup>, Radomir Ostaszewski<sup>18</sup>, Małgorzata Pabis<sup>7</sup>, Małgorzata Polańska-Płachta<sup>5</sup>, Tomasz Stefura<sup>10</sup>, Anna Stępień<sup>19</sup>, Paweł Szabat<sup>20</sup>, Rafał Śmiechowski<sup>4</sup>, Sebastian Tomaszewski<sup>21</sup>, Viktor von Ehrlich-Treuenstätt<sup>13</sup>, Maciej Walędziak<sup>22</sup>, Maciej Wasilczuk<sup>8</sup>, Mateusz Wierdak<sup>1</sup>, Anna Wojdyła<sup>9</sup>, Jan Wojciech Wroński<sup>16</sup>, Michał Wysocki<sup>1,2</sup>, Leszek Zwolakiewicz<sup>23,24</sup>

1. Jagiellonian University Medical College, 2nd Department of General Surgery, 21 Kopernika St., 31-501 Kraków, Poland
2. Center for Research, Training and Innovation in Surgery (CERTAIN Surgery), 21 Kopernika St., 31-501 Kraków, Poland
3. Medical University of Białystok, 1st Department of General and Endocrinological Surgery, M. Skłodowskiej-Curie 24a, 15-276 Białystok, Poland
4. Department of Surgical Oncology, Medical University of Gdansk, 17 Smoluchowskiego Str., 80-211 Gdansk, Poland
5. Medical University of Warsaw, Second Faculty of Medicine, 2nd Department of General, Vascular and Oncological Surgery, 19/25 Stępińska St., 00-739 Warsaw, Poland
6. SPZOZ in Węgrów, Department of General Surgery, 201 Kościuszki St., 07-100 Węgrów, Poland
7. Żeromski's General Hospital, Department of General, Oncological and Minimal Invasive Surgery, 66 Na Skarpie, 31-913 Kraków, Poland
8. Regional Hospital named J. Śniadecki, Department of General, Minimally invasive and Oncology Surgery, 26 Skłodowska-Curie St., 15-278 Białystok, Poland
9. University of Warmia and Mazury in Olsztyn, Poland, Department of General, Minimally Invasive and Elderly Surgery, 44 Niepodległości Str., 10-045 Olsztyn, Poland
10. Jagiellonian University Medical College, Students' Scientific Society of 2nd Department of General Surgery, 21 Kopernika St., 31-501 Kraków, Poland
11. Ceynowa Hospital, Department of General and Oncological Surgery, 10 Jagalskiego Street, 84-200 Wejherowo, Poland
12. Medical University of Warsaw, Department of General, Transplant and Liver Surgery, Banacha 1a St., 02-097 Warszawa, Poland
13. Ludwig Maximilian University, Clinic of General-, Visceral- and Transplantation Surgery, 15 Marchionini St., 81377 Munich, Germany
14. Department of General, Oncologic and Geriatric Surgery, Jagiellonian University Medical College, 35-37 Pradnicka Str., 31-202 Krakow, Poland
15. Department of General Surgery and Surgical Oncology, Specialist Hospital in Kościerzyna, 36 Piechowskiego Str., 83-400 Kościerzyna, Poland
16. The Regional Subcarpathian John Paul II Hospital in Krosno, Department of General, Oncological and Vascular Surgery, ul. Korczyńska 57, 38-400 Krosno, Poland
17. Clinical Department of General Surgery with Oncology, Gabriel Narutowicz Memorial City Specialty Hospital, 35-37 Pradnicka Str., 31-202 Krakow, Poland
18. Municipal Hospital in Hajnówka, Department of General and Laparoscopic Surgery, 9 Dowgirda St., 17-200 Hajnówka, Poland
19. Multispeciality Hospital in Nowa Sól, Department of General Surgery, Chałubińskiego 7 St., 67-100 Nowa Sól, Poland
20. Leczna Hospital, Department of General and Minimally Invasive Surgery, 52 Krasnystawska st., 21-010 Leczna, Poland
21. Dr Louis Błazek Memorial Hospital, Department of General Surgery, Oncological Surgery and Chemotherapy, 97 Poznańska St., 88-100 Inowrocław, Poland
22. Military Institute of Medicine, Department of General, Oncological, Metabolic and Thoracic Surgery, Szaserów 128 St., 00-141 Warsaw, Poland
23. Faculty of Health Sciences, Powiślańska School in Kwidzyn, ul. 11 Listopada 29, 82-500 Kwidzyn, Poland
24. Emergency Department, Specialist Hospital in Kościerzyna, ul. Piechowskiego 36, 83-400 Kościerzyna, Poland

## **Risk factors for postoperative morbidity after laparoscopic appendectomy – results from large multicentre cohort study.**

Appendicitis remains the most common indication for abdominal emergency surgery. Despite constant improvements in perioperative care and increasing popularity of laparoscopy, a certain percentage of patients develop complications after appendectomy.

Our aim was to identify potential risk factors for postoperative complications after laparoscopic appendectomy (LA).

18 surgical units in Poland and Germany submitted data of patients undergoing LA to the online web-based database created by Polish Videosurgery Society of the Association of Polish Surgeons. It comprised 31 elements related to pre-, intra- and postoperative period. Surgical outcomes were compared among the groups according to occurrence of postoperative complications. Univariate and multivariate logistic regression models were used to identify potential risk factors of complications.

4617 patients were included in the analysis, of whom 216 (4.68%) developed at least one complication. Mortality in the entire cohort was low (3 cases, 0.06%). Out of complicated cases 85 (39.3%) required surgical reintervention. In univariate logistic regression analysis following risk factors were identified: male sex (OR 1.35, 95% CI: 1.02-1.78), age >50 years (OR 2.62, 95% CI: 1.98-3.48), higher ASA class (OR 1.90 with every class, 95% CI 1.51-2.38), diabetes (OR 4.50, 95% CI: 2.80-7.22), time from onset of symptoms to LA >48h (OR 1.72, 95% CI: 1.28-2.31), WBC >20,000/mm<sup>3</sup> (OR 2.20, 95% CI: 1.52-3.19), CRP >100 mg/l (OR 3.88, 95% CI: 2.83-5.31), complicated appendicitis i.e. perforated/gangrenous or with periappendiceal abscess (OR 3.40, 95% CI: 2.58-4.48), intraoperative adverse events (OR 4.59, 95% CI: 2.70-7.80) and conversion (OR 6.27, 95% CI: 4.49-8.75).

In multivariate model only diabetes mellitus (OR 1.30, 95% CI: 1.49-6.70), CRP >100 mg/l (OR 1.78, 95% CI 1.09-2.91) complicated appendicitis (OR 1.73, 95% CI: 1.06-2.83), intraoperative adverse events (OR 3.51, 95% CI: 1.49-8.28) and conversion (OR 3.34, 95% CI: 1.93-5.76) were statistically significant.

When a subgroup of severe complications (Clavien-Dindo III-V) was distinguished, only complicated appendicitis (OR 3.63, 95% CI: 1.74-7.61) and intraoperative adverse events (OR 4.09, 95% CI: 1.32-12.65) remained significant.

This analysis shows that complication and mortality rates after laparoscopic appendectomy are relatively low. The strongest independent risk factors for postoperative morbidity include complicated appendicitis, intraoperative adverse events and conversion to open surgery.

**Kategoria:** K1. Laparoscopia w nagłych stanach chirurgicznych / Laparoscopy in emergency surgical conditions

**Osoba prezentująca:** dr hab. Michał Pędziwiatr