LAPAROSKOPSKA IN ROBOTSKA RADIKALNA KIRURGIJA: STANDARD ALI IZJEMA?

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Objective: To present a comprehensive, evidence-based algorithm for selecting the type of surgical approach in radical surgical resections based on established oncologic principles while maximizing the benefits of minimally invasive surgery (MIS).
Background: The selection of surgical approach in radical resections has undergone significant evolution and should be decided on a case-by-case basis. While open surgery is being mostly replaced with MIS approaches even in complex pelvic disease in colorectal surgery, certain studies in gynecological oncology demonstrate inferior survival outcomes for minimally invasive approaches. Even though MIS offers established benefits including reduced postoperative pain, shorter hospital stays, faster recovery, and improved quality of life, these advantages must therefore be carefully weighed against oncologic safety and long-term survival outcomes.
Methods: A structured decision-making framework was developed focusing on three main domains - tumor characteristics, patient characteristics and surgeon experience. As tumor characteristics are very organ specific, we primarily focus on patient characteristics, surgeon experience and the potential pitfalls in patient selection.
Results: The proposed algorithm establishes clear hierarchical decision points in the following manner:
Absolute contraindications include hemodynamic instability or high likelihood of having cardiovascular or pulmonary complications during insufflation, dense adhesions, suspected peritoneal carcinomatosis and lack of intraabdominal space. Disease-specific evaluations are extremely important and will vary depending on the organ system. Technical factors including surgeon experience (minimum 50 MIS oncologic cases), patient BMI considerations, and low conversion rates (<5%) are integrated as critical decision modifiers.
Clinical Implementation: The algorithm can serve as a framework for decision making and also outcome tracking. Planned conversion criteria are established to maintain surgical safety, with decision points at 30 minutes operative time and 500ml blood loss thresholds. The framework emphasizes that oncologic outcomes must never be compromised for surgical approach preferences, establishing patient safety and cancer cure as paramount considerations.
Conclusions: This systematic algorithm provides surgeons who perform radical resections with an evidence-based framework for surgical approach selection that balances the benefits of minimally invasive techniques with oncologic safety requirements. Implementation of this algorithm requires ongoing assessment of surgeon capabilities, institutional resources, and patient-specific factors while maintaining flexibility for complex clinical scenarios. Future refinements will incorporate emerging evidence from ongoing trials and technological advances in minimally invasive surgical platforms. This framework ultimately serves to optimize patient outcomes by ensuring appropriate case selection for minimally invasive approaches while maintaining the highest standards of oncologic care.

Key Words: Robotic assisted surgery, laparoscopy, surgery, algorithm