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Differentiated Approach in Inguinal Hernia Repair

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Relevance of the Topic. The surgical treatment of inguinal hernias has evolved significantly with the introduction of various prosthetic techniques and minimally invasive approaches. However, the optimal choice of hernioplasty method remains a subject of debate, as it must be tailored to individual patient characteristics, including age, hernia type, recurrence risk, comorbidities, and physical activity level. A differentiated approach allows for the selection of the most appropriate surgical technique—whether open or laparoscopic (TAPP, TEP)—and the most suitable type of mesh implant, thereby improving functional outcomes, reducing complications, and minimizing recurrence. In this context, studying the effectiveness of personalized strategies in hernia repair is highly relevant for enhancing the quality and safety of surgical care.

Materials and Methods. The study was conducted on 103 patients diagnosed with inguinal hernias who underwent surgical treatment between 2021 and 2024. The patients were divided into two groups based on the applied approach: the main group (n=54) received a differentiated treatment strategy, where the choice of prosthetic hernioplasty technique (open or laparoscopic: TAPP/TEP) and type of mesh was individually selected according to patient-specific factors such as hernia characteristics, age, and comorbidities. The comparison group (n=49) underwent a standardized surgical procedure without individualization. Preoperative evaluation, intraoperative parameters, and postoperative outcomes—including pain (VAS scale), complication rate, recovery time, and recurrence—were systematically recorded and analyzed. Follow-up was conducted over a 6-month period.

Results and Discussion. The comparative analysis showed that the differentiated approach in the main group led to significantly improved clinical outcomes. Patients who received individualized hernioplasty techniques reported lower postoperative pain levels (mean VAS 2.4 vs. 4.1 in the comparison group), as well as a reduction in early complications, which occurred in 9.3% of the main group versus 18.4% in the standardized treatment group. Additionally, the average recovery period and time to return to normal activity were notably shorter in the main group. Importantly, no cases of hernia recurrence were observed during the 6-month follow-up in patients treated with a tailored approach, whereas two recurrences were recorded in the comparison group. These findings underscore the effectiveness and clinical benefit of a differentiated strategy in selecting the optimal method of prosthetic hernioplasty for inguinal hernias.

Conclusion. The study demonstrates that a differentiated approach to the selection of prosthetic hernioplasty techniques for inguinal hernias significantly enhances treatment outcomes. By

considering individual patient characteristics and tailoring the surgical method accordingly, it is possible to reduce postoperative pain, minimize complications, shorten recovery time, and prevent hernia recurrence. These results highlight the importance of personalized surgical planning as a key factor in improving the safety and effectiveness of inguinal hernia repair.