

COMPARATIVE CHARACTERISTICS OF PRIMARY STOMA FORMATION AND INTESTINAL ANASTOMOSIS IN CHILDREN

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Aim of the Study. To compare baseline clinical characteristics and immediate treatment outcomes in children undergoing primary stoma formation or primary intestinal anastomosis.

Materials and Methods. A retrospective comparative study included 195 children with urgent abdominal pathology requiring intestinal resection. Primary stoma formation was performed in 94 patients, and primary intestinal anastomosis in 101 patients. Sex, age, admission route, severity of the clinical condition, underlying diagnoses, laboratory parameters, duration of antibiotic therapy, number of hospitalizations, and postoperative outcomes were compared. Complication severity was graded according to the Clavien–Dindo classification. The chi-square test, Fisher’s exact test, and Mann–Whitney U test were applied. Differences were considered

statistically significant at $p < 0.05$. To minimize misinterpretation, the findings were evaluated in view of differences in the indications for the procedures. Readmission following stoma formation was considered a component of staged treatment rather than a separate complication. Postoperative antibiotic therapy was assessed in duration categories of 3–5, 5–10, and more than 10 days. The clinical mechanisms of severe adverse events were assessed separately, because an identical Clavien–Dindo grade could encompass different complications.

Results. The groups did not differ significantly in sex, age, or total length of hospital stay. However, patients undergoing primary stoma formation had a less favorable baseline clinical profile. They were more frequently admitted by transfer or ambulance ($p = 0.015$ – 0.022) and were more often in severe condition ($p < 0.001$). In this group, hemoglobin was lower (110.95 ± 2.26 vs. 118.50 ± 1.67 g/L; $p = 0.009$), as was albumin (33.7 ± 0.8 vs. 37.8 ± 0.7 g/L; $p < 0.001$). Leukocyte counts were higher (10.41 ± 0.55 vs. $8.13 \pm 0.43 \times 10^9$ /L; $p < 0.001$), as were C-reactive protein levels (80.5 ± 5.8 vs. 60.8 ± 4.7 mg/L; $p < 0.001$).

Congenital gastrointestinal malformations predominated in the anastomosis group (53.5% vs. 18.1%; $p < 0.001$). Adhesive intestinal obstruction and necrotizing enterocolitis occurred more frequently in the primary stoma formation group ($p = 0.048$ and $p = 0.003$, respectively). The more severe inflammatory and nutritional profile of patients with stomas was associated with a longer duration of antibiotic therapy ($p < 0.001$) and a greater number of hospitalizations (1.27 ± 0.05 vs. 1.10 ± 0.04 ; $p < 0.001$). The postoperative course was uncomplicated in 155 children (79.5%). The proportion of patients without complications was comparable between the groups: 79.8% after stoma formation and 79.2% after anastomosis. The distribution of outcomes according to the Clavien–Dindo classification also did not differ significantly ($p = 0.478$).

Nevertheless, the pattern of complications differed. Anastomotic leakage was the leading complication after anastomosis, whereas a more heterogeneous spectrum of surgical events was observed after stoma formation. Mortality was 9.6% and 5.9%, respectively. A short course of antibiotics (3–5 days) was more frequently administered after primary anastomosis, whereas longer regimens predominated in the stoma formation group. This pattern was consistent with the greater baseline severity of inflammation. Total hospital stay did not differ substantially between the groups, although the number of hospitalizations was higher after stoma formation because of planned stoma closure. The absence of statistically significant differences in Clavien–Dindo grades despite different clinical patterns of complications demonstrates the limitations of comparing composite severity categories alone. Anastomotic leakage required urgent reoperation, whereas some events after stoma formation were associated with the underlying disease and nutritional-inflammatory risk.

Conclusion. Comparable overall rates and severity of postoperative complications were observed despite differences in baseline clinical risk. Primary stoma formation was used predominantly in patients with more severe conditions, a pronounced inflammatory response, and nutritional impairment. Comparing the procedures without accounting for confounding by indication does not establish the superiority of either strategy. The choice of surgical technique should be based on an individualized assessment of intestinal viability, contamination, and the child’s physiological reserve. Comparative evaluation of surgical approaches should preferably be stratified by diagnosis, severity of peritonitis, and intestinal viability. Prospective research should include standardized indications for each method of completing surgery.