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Evaluation of surgical techniques for treating gastroschisis

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Introduction & Aim: The significant risk of morbidity and mortality in association with gastroschisis requires a critical assessment of treatment methods. The aim of this study was to evaluate the efficiency of surgical treatment of gastroschisis.

Materials & Methods: We conducted a retrospective cohort study at the Institute for Maternal and Child Healthcare “Dr Vukan Cupic” in Serbia, from 2002-2016, where-in we compared the outcomes of two techniques for managing gastroschisis: Primary fascial closure and the use of a silastic silo.

Results: This study included 54 patients: 21 in the Silastic Cohort (GSiC) and 33 in the Surgical Cohort (GSC). There was no statistically significant difference regarding the demographic characteristics, the use of Total Parenteral Nutrition (TPN), the incidence of sepsis, the number of re-interventions and the duration of hospitalization. Furthermore, there was no difference in the rate of complications of the ileus, compartment syndrome, or death. A statistically significant difference was observed in the silastic cohort for a shorter duration of use of mechanical ventilation ($p=0.004$). Necrotizing Enterocolitis (NEC) was observed more frequently in the silastic cohort (relative risk: 1.31; 95% Confidence Interval (CI): 1.03-1.52; $p=0.006$). The absolute risk of incidence of complications and lethal outcomes did not exceed 20% of cases (within a 95% CI) in surgically treated children.

Conclusion: The two techniques used in gastroschisis management are equally efficient, but differ in their incidence of complications. NEC is the leading cause of morbidity and mortality in the silastic cohort.

Discussion: Evaluation of the necessity of the initial incision of the fascial ring and specific technical complications using a silastic silo, result in bowel vascular insufficiency and the development of NEC. This indicates the importance of carefully identifying patients for certain types of operational techniques, depending on the pathological substrate.

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