



Evidence-Based Resource

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Youssef F, Gorgy A, Arbash G, Puligandla PS, Baird RJ. Flap Versus Fascial Closure For Gastroschisis: A Systematic Review And Meta-Analysis. Journal Of Pediatric Surgery 2016;51:718-25

The authors performed a systematic review and meta-analysis of the literature investigating flap versus fascial closure (either immediate or post-silo reduction) for infants with gastroschisis. A total of twelve studies were included in the analysis, published between 2008 and 2015.

From the perspective of the examined short term outcomes, flap closure was equivalent or superior to fascial closure in infants with gastroschisis for the majority of endpoints examined:

- Mortality rates were not significantly different between flap and fascial closure across 9 studies with 919 patients (odds ratio (OR) 1.04, 95% CI 0.45 to 2.41, P = 0.92).
- Length of hospital stay was not significantly different between 835 patients treated with flap or fascial closure from 6 studies (mean difference (MD) -2.44, 95% CI -10.51 to 5.63, P = 0.55).
- For feeding parameters, time on total parenteral nutrition across 5 studies with a total of 755 patients revealed 4 day shorter course in patients treated with flap closure on average, which bordered on statistical significance (MD -3.97, 95% CI -8.14 to 0.19, P = 0.06). No difference was seen when assessing the amount of days spent NPO from 3 studies with 583 patients (MD -1.28, 95% CI -3.28 to 0.72, P = 0.21).
- Across 4 studies and 698 included patients, patients treated with flap closure spent an average of 2.6 days fewer on mechanical ventilation compared to patients treated with fascial closure – a clinically significant result, with a trend towards statistical significance (MD -2.60, 95% CI -5.33 to 0.13, P = 0.06).
- Across 3 studies and 758 patients, meta-analysis favored flap closure as being associated with fewer surgical site infections (OR 0.40, 95% CI 0.22 to 0.74, P = 0.003), and when subgrouped further to include only those patients undergoing flap or fascial closure after silo reduction (460 patients), this result maintained statistical significance in favor of flap closure (OR 0.44, 95% CI 0.24 to 0.82, P = 0.01).
- Umbilical hernias were found to occur more frequently in patients who underwent flap closure (OR 4.85, 95% CI 1.23 to 19.08, P = 0.02); however, operative intervention was required more frequently in patients who had operative fascial versus flap closure (41% and 19% respectively, P = 0.001).
- No significant difference was found between patients treated with flap or fascial closure in terms of resource utilization, however only one study reported data to this effect.

Conclusions: Taken together, these results suggest potential benefits to the increased use of bedside flap closure for infants with gastroschisis as this technique appears to be equivalent or superior to fascial closure and may obviate the need for operating room time and for general anesthesia and its potential adverse neurocognitive outcomes for infants.

Quality Assessment – AMSTAR

	Item Description	Score
1	Was an 'a priori' design provided?	Yes = 1
2	Was there duplicate study selection and data extraction?	Yes = 1
3	Was a comprehensive literature search performed?	Yes = 1
4	Was the status of publication (i.e. grey literature) used as an inclusion criterion?	Yes = 1
5	Was a list of studies (included and excluded) provided?	No = 0
6	Were the characteristics of the included studies provided?	Yes = 1
7	Was the scientific quality of the included studies assessed and documented?	Yes = 1
8	Was the quality of the included studies used appropriately in formulating conclusions?	Yes = 1
9	Were the methods used to combine the findings of studies appropriate?	Yes = 1
10	Was the likelihood of publication bias assessed?	Yes = 1
11	Was the conflict of interest included?	No = 0
Total		9/11

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