← Back To Topic

Youssef F, Arbash G, Puligandla PS, Baird RJ. Loop Versus Divided Colostomy For The Management Of Anorectal Malformations: A Systematic Review And Meta-Analysis. Journal Of Pediatric Surgery 2017;52(5):783-90

Anorectal malformations (ARM) represent a spectrum of complex congenital deformities which often necessitate surgical intervention, for which the optimal method of stool diversion through colostomy has not yet been established. Youssef and colleagues undertook a systematic review and meta-analysis to compare loop versus divided colostomy in the management of pediatric patients with congenital anorectal malformations. A total of 26 studies (1 RCT, 2 prospective, and 23 retrospective) were included, comprising 3866 patients (2241 having undergone loop colostomy and 1994 divided colostomy procedures).

The results of the systematic review and meta-analysis are as follows:

- Pooled data of 2137 patients from 8 studies demonstrated that divided colostomy resulted in less stoma prolapse (odds ratio (OR) 2.39, 95% CI 1.01 to 5.64, P = 0.05). The authors acknowledge that no definition of stoma prolapse was provided in any studies.

- Urinary tract infections were assessed across 977 patients from 5 studies and there was no difference between groups (OR 2.55, 95% CI 0.76 to 8.58, P = 0.13), although heterogeneity was high.

- Skin excoriation was not significantly different between loop and divided colostomy patients from 3 studies and 344 patients (OR 1.28, 95% CI 0.68 to 2.38, P = 0.44)

- Stoma retraction was assessed across 3 studies with available data (386 patients) showing no difference between patients with loop and divided colostomies (OR 0.94, 95% CI 0.36 to 2.42, P = 0.90).

- The incidence rates of parastomal hernia were not significantly different between patients with loop or divided colostomy (523 included patients from 4 studies; OR 0.99, 95% CI 0.22 to 4.48, P = 0.99).

- A total of 394 patients were included in analyses of rates of wound infection across 3 studies and demonstrated comparable rates (OR 0.35, 95% CI 0.10 to 1.20, P = 0.10).

- Comparable rates of stoma stricture was found across 3 studies and 394 patients (OR 0.53, 95% CI 0.12 to 2.36, P = 0.40).

- No significant difference was found in the rates of stoma necrosis from two included studies (results were not pooled).

Taken together these results outline the considerable morbidity associated with colostomy procedures in patients with anorectal malformations. A significant difference in the rate of stoma prolapse favored the use of divided colostomy compared to loop colostomy, with comparable rates of other examined complications seen in meta-analyses. Distinct advantages of loop colostomy render the optimal practice choice difficult, as rapid creation and reversal of loop colostomy through a small incision rather than the laparotomy required by divided colostomy can have clear advantages for patients. Given that stoma prolapse does not necessarily require operative intervention, but does bring with it considerable caregiver and health professional distress, a thorough overview of the procedures and technical prowess required for their implementation must be considered.

Conclusions: A lower rate of stoma prolapse was found in patient undergoing divided colostomy compared to loop colostomy, with no differences found for other outcomes. Further data will be required to elucidate other factors that may further differentiate these procedures and clarify the optimal treatment for patients with anorectal malformations.

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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