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Albumin is not a significant factor in our Novel technique of ileostomy closure

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ABSTRACT

Introduction: Hypoalbuminemia is a predictor of delayed recovery of bowel function and is strongly associated with post operative complications like anastromotic leak. The aim of our study is to access the effect of albumin in our novel technique of ileostomy closure with additional buttressing with natural muscle flap.

Methodology: Prospective analysis of 100 patients undergoing ileostomy closure by our novel technique between 2015 to 2021 at department of general surgery, Gajra Raja medical college, Gwalior. Exclusion criteria included patient with ileostomy closure other than loop ileostomy and those who did not given consent

Result: A total of 100 patient were evaluated, 90 out of 100 patients who underwent novel technique were having low albumin level (<3.5 gm/dl). No patients with low albumin level who underwent novel technique developed anastomosis leak.

Conclusion: Inspite of low albumin in novel technique, there was no anastomotic leak in our technique of additional buttressing with muscle flap.

INTRODUCTION

Serum albumin is powerful nutritional marker in surgical patient and hypo-albuminemia is a well known is factor for wound healing failure.(1) The Condition of albumin deficiency is known to prolong the inflammatory phase, reduced the number of fibroblast and inhibit collage biosynthesis , inhibit the neo- angiogensis.(2).

Malnutrition is a common problem seen in patients admitted for ileostomy closure that adversely effect surgical outcomes. Hypoalbuminemia is a predictor of delayed recovery of bowel function and is strongly associated with post operative complications like anastromotic leak.(3)

So the aim of our study is to access the effect of albumin in our novel technique of ileostomy closure with additional buttressing with natural muscle flap.

MATERIAL AND METHOD

Patients and data collection

After obtaining approval institutional ethical committee, we carried out a prospective analysis of 100 patients undergoing ileostomy closure by our novel technique between 2015 to 2021 at department of general surgery, Gajra Raja medical College, Gwalior. Exclusion criteria included patient with ileostomy closure other than loop ileostomy and those who did not given consent

In our Novel technique of ileostomy closure, Peristomal skin incision with 5 mm margin form stroma will be made and peristomal skin will be separated, mobilization of stoma, Then closure will be done in two layers, first will be full thickness closure of gut followed by approximation of muscle flap over first layer closure

RESULT

A total of 100 patient were evaluated, 90 out of 100 patients who underwent novel technique were having low albumin level (<3.5 gm/dl). No patients with low albumin level who underwent novel technique developed anastomosis leak. As low albumin level is a significant risk factor for anastomosis leak, inspite of that no patient developed anastomosis leak who underwent novel technique of ileostomy closure.

Table 1: Showing comparison between Albumin level with Anastomosis leak in Novel technique.

Albumin(mg%)	Novel	
		Anastomosis Leak
1-1.5	10	-
1.5-2.0	16	-
2.1-2.5	20	-
2.6-3.0	34	-
3.1-3.5	10	-
3.6-4.0	6	-
4.1-4.5	4	-
	100	

DISCUSSION

Hypoalbuminemia is seen in most of the patients admitted for ileostomy closure(4)(5)(6). Hypoalbuminemia was considered as one of the significant risk factor for anastomotic leak. In our Novel technique of ileostomy closure,closure was done in two layers, first with full thickness closure of gut followed by approximation of muscle flap over first layer closure. This double layer of ileostomy closure provide extra strength to anastomosis which result in no anatomotic leak in our novel technique of additional buttressing with natural muscle flap when compared to conventional technique.

In a study conducted by Anandan PK et al, 30% (n=6) patients with low albumin level developed anastomotic leak following stoma closure.

In a study conducted by Debra L Richardson et al, 6.8% (n=12) patients developed anastomotic leak with 21% (n=6) patients with low albumin level (<3.0 g/dl) developed anastomotic leak while 3.4% (n=2) patients with albumin level > 3.0 g/dl developed anastomosis levels.

In a study conducted by BC Morse et al, 36% (n=14) patients with low albumin level who underwent stoma closure developed anastomosis leak.

CONCLUSION

Low albumin is itself a risk factor for anastomotic leak. Inspite of low albumin in novel technique, there was no anastomotic leak in our technique of additional buttressing with muscle flap.

CONFLICT OF INTEREST: None

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ETHICAL APPROVAL: This study was approved by Institutional Ethics Committee, JIWAJI UNIVERSITY GWALIOR.

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