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Original Research Article

A prospective study of feasibility and short term outcome of stoma reversal under local anaesthesia

Ashok Kumar*, Yogesh Kumar, Vineet Singh, Arvind Kumar[1]

Department of General Surgery, B. R. D. Medical College, Gorakhpur, Uttar Pradesh, India

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***Correspondence:**
Dr. Ashok Kumar,
E-mail: matnandan@gmail.com

ABSTRACT

Background: Stoma fashioning (ileostomy and colostomy) are very important and established procedures for deviation of bowel contents to procure the distal anostomosis. It is a very common procedure in cases of bowel obstruction, perforation, inflammatory bowel disease and large bowel disorders like Ca colon and Ca rectum, colonic fistulas, trauma to colon and rectum. Stoma reversal is a routine procedure but is usually performed using general or regional anaesthesia but large number of patient list for stoma reversal under general or regional anaesthesia, led to unnecessary delay in stoma reversal due to paucity of anaesthesia. Local anaesthesia has thus proved useful to handle a large load of stoma reversal, so we investigated feasibility of performing stoma reversal using local anaesthetic agent.
Methods: Total 54 patients underwent for stoma reversal under local anaesthesia, admitted to Department of General Surgery, Nehru Hospital, B. R. D. Medical College, Gorakhpur, Uttar Pradesh, India.
Results: Reversal of stoma could be comfortably done under safe dose of local anaesthesia, most of the patients remain comfortable intraoperatively, 4 out of 54 patients had systemic complications like vomiting and bradycardia and 2 had associated bowel injury. only 2 patients had minor anostomotic leak and 1 had developed fecal fistula while rest had normal intact anostomosis. Only 2 patients had reported moderate pain and 1 had mild pain according to visual analog scale and in 42 out of 54 patients had normal wound healing while 5 had minor erythema, 6 had seroma formation and 1 had complain of pus discharge.
Conclusions: Reversal of STOMA can be performed safely and comfortably under local anaesthesia. Post op short term outcome and complications are comparable to that done under general or regional anaesthesia.

Keywords: Colostomy, Closure, Complications, Ileostomy, Local anaesthesia, Stoma

INTRODUCTION

Stoma fashioning is a day back procedure, as first documented ileostomy was done by Amitesarove D, a rural doctor of Miranda state, venezuela.[1] the list of ileostomy and colostomy indication is very large comprising mainly bowel obstruction, bowel perforation, inflammatory bowel diseases and large bowel disorders, colonic cancers, colorectal trauma, colonic fistulas etc. in most of the patients ileostomy reversal is done after variable time under general or regional anaesthesia. Stoma closure is currently a routine procedure with low mortality rate (0.5-1.0%) and morbidity rate of 10-50% Dolan P and Caldwell FT.[2] At our centre we have started using an alternative method of using local anaesthesia to overcome large number of patient load pending for reversal under general or regional anaesthesia, local anaesthesia has several advantages over general or regional anaesthesia, as its affects a limited area of the body, there is little interference with the function of other organs, it doesn't affect the respiratory function of the patients, there is minimal postoperative nausea and

vomiting, the handling of intravenous fluids during surgery is made simpler, the immediate post-anaesthesia period is pain free. It is well tolerated by high risk patients Winnie A, Zsigmond E.[3]

The aims of this study were to evaluate the feasibility of performing stoma reversal operation using local anaesthetic agents, to determine patient tolerance and safety of performing stoma reversal under local anaesthesia and to evaluate the short-term outcome of stoma reversal under local anaesthesia.

METHODS

The present study was undertaken on the patients who were admitted in surgery department of Nehru Hospital, B. R. D. Medical College, Gorakhpur, Uttar Pradesh, India, having either loop ileostomy, double barrel ileostomy or loop colostomy and planned for stoma reversal under local anaesthesia. Period of study was between November 2014 to December 2015.

RESULTS

Total 54 patients were studied, 46 patients had loop ileostomy (85.15%), 5 had loop colostomy (9.2%) and 3 had double barrel ileostomy (5.5%) (Table 1).

Table 1: Case distribution according to type of stoma.

Stoma type	Patients	Percentage
Loop ileostomy	46	85.1%
Double barrel ileostomy	3	5.5%
Loop colostomy	5	9.2%

In present study, maximum of the patients 23 (42.5%) required 20-21 ml of i.e. 426-447 mg of lignocaine for the procedure which is under maximum safe dose of lignocaine (Table 2).

Table 2: Patients distribution according to the amount of local anaesthetic used during operation.

Local anaesthetic 2% lignocaine (ml)	(mg)	Patients	Percentage
16-17	341-362	7	12.9%
18-19	383-405	15	27.7%
20-21	426-447	23	42.5%
22-23	469-490	9	16.6%

Table 3: Intraoperative systemic/ surgical complication.

Intra op complication	Patients	Percentages
Ass. Bowel injury	2	3.7%
Nausea/vomiting	3	5.5%
Bradycardia	1	1.8%

Out of 54 patients, 4 had systemic events (3 had vomiting and 1 had bradycardia) and 2 had surgical complication in the form of associated bowel injury during mobilization of bowel (Table 3).

Pain severity was assessed by asking the patient to grade maximum pain experienced during operation on analog pain scale. Majority of patients, 38 out of 54 patients (70.3%) had pain grade of 1 or 2 which is no or minimal pain (Figure 1).

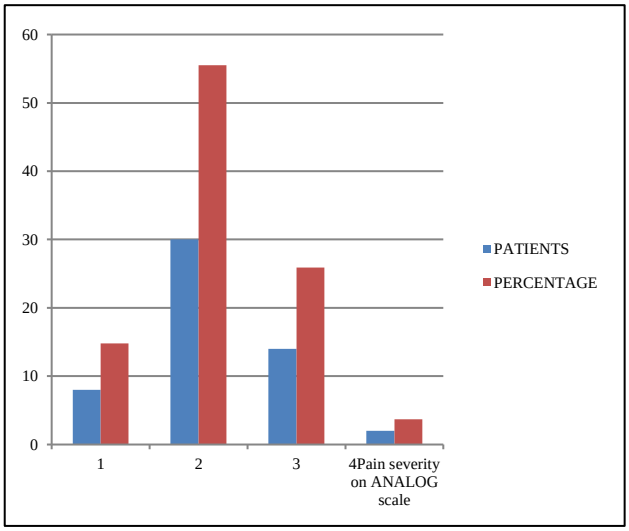

Figure 1: Pain severity on analog pain scale.

Maximum patients 28 out of 54 (51.8%) had appearance of bowel sounds in post-operative period within 24-48 hours (Table 4).

Table 4: Appearance of bowel sounds in post-operative period.

Bowel sound (POD)	Patients	Percentage
First 24 hours	15	27.7%
24-48 hours	28	51.8%
48-72 hours	10	18.5%
>72 hours	1	1.8%

Most of the patients had no post-operative complication but 5 patients had minor erythema (9.2%), 6 patients (11.1%) had seroma formation and 1 patient (1.8%) had pus discharge from wound (Table 5).

Table 5: Wound condition in post-operative period.

Wound condition	Patients	Percentage
Erythema	5	9.2%
Seroma	6	11.1%
Pus discharge	1	1.8%
Healthy	42	77.7%

Out of 54 patients, 9 had post-operative complications thus a morbidity rate of 16.6%. Out of 9 patients, 6 had

seroma formation, 1 had pus discharge from wound that later formed fecal fistula and 2 patients had suspected minor leak that was managed conservatively (Figure 2).

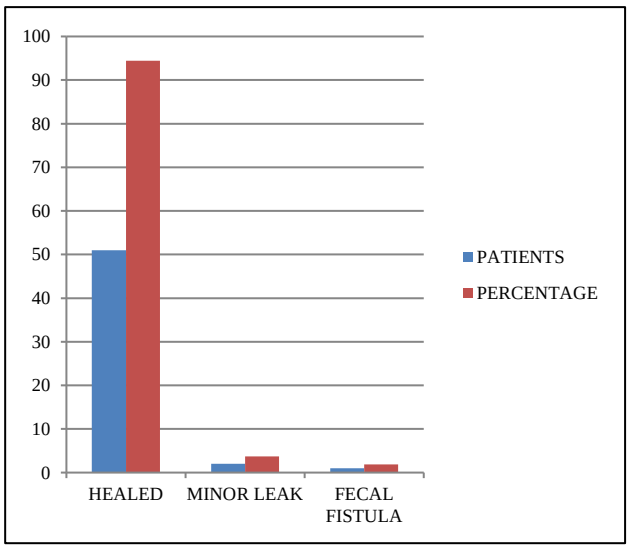

Figure 2: Final outcome of bowel anastomosis.

DISCUSSION

In present study, all of the cases had been done in addition to sedative, it also allayed patients anxiety and fear.

In present study, 30 mg pentazocine iv 50 mg promethazine iv has been given 10 min before surgery for sedation while Cantele H et al used midazolam 0.15 mg/kg iv and Mepiridine 1 mg/kg iv, 15 minutes before surgery.[4] Abreu R et al has used 2.5 mg midazolam iv and 20 mg mepiridine iv, 10 minutes before surgery.[5] In all studies sedation was found sufficient and patients didn't have any intra op problem.

In present study lignocaine 2% with adrenaline (1:200000) diluted with equal amount of distilled water. All the patients had received the amount within maximum safe dose limit, while Abreu R et al used lignocaine 2% with bupivacaine 0.5% while Cantele H et al used lignocaine 1% in his study, Haggmans MJ et al also used lignocaine and prilocaine in association with adrenaline for loop ileostomy closure.[4-6]

In all these studies, they have found local anaesthesia safe and compatible with no complication arising intra or post op due to local anaesthetic agent perse.

In present study, 3 out of 54 patients complaining of nausea and vomiting while in Abreu R et al reported 1 out of 21 patients had nausea and vomiting while in Haagmans MJ et al reported 4 out of 15 patient had nausea and vomiting which was relieved by metaclopramide.[5,6]

In present study 1 patient had interop bradycardia which was managed by iv atropine. 2 patient had intra op surgical complication as bowel injury which was managed accordingly and 1 later had an anostomotic leak which was managed conservatively.

The severity of pain was determined by obtaining score on an analog pain scale graduated from 0 (no pain) to 10 (worst pain), in present study 96.3% patients had pain score of ≤3 which was minimal pain. Abreu R et al also reported high efficacy of local anaesthesia as 81.9% patient had score of ≤3.[5] Contele H et al had evaluated tolerance of the procedure as excellent by 64.4%, good by 32% and average by 14.2%.[4]

Most of the patients had early return of bowel sound, 51.8% within 24-48 hours and in 27.7 % within 24 hours. This was attributed to minimum bowel handling, early ambulation and lesser post op ileus than general regional anaesthesia.

9 out of 54 patients (16.6%) had some kind of morbidity in post op period viz. 6 patients had seroma formation, 1 had pus discharge which later become fecal fistula and 2 patient had minor anostomotic leak which was managed conservatively, while Contele H et al had reported morbidity rate of 42.8% (3 had anostomotic dehiscence, 2 had abdominal wall infection, and 1 had intestinal obstruction).[4] Haggsman MJ et al found morbidity rate of 20% while Abreu R et al reported complication rate of 9.4%.[5]

The morbidity rate was higher in conventional stoma closure under regional or general anaesthesia ranging from 10-50% also. 1% mortality was also noticed.

So, the results of our study shows, that use of local anaesthesia with sedation in stoma reversal is feasible and highly efficacious with post op morbidity rates comparable to conventional anaesthesia, local anaesthesia offers safe and effective alternative to general or regional anaesthesia for closure of intestinal stomas.

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REFERENCES

1. Amitesarove O. Construccion de una colostomia.la union medica. Caracas; 1881.
2. Dolan PA, Caldwell FT, Thompson CH, Westbrook KC. Problems of colostomy closure. Am J Surg. 1979;137(2):188-91.
3. Winnie A, Zsigmond E. In: Editorial Panamericana. Hernia, 3rd edition, Editorial Panamericana, Buenos Aires; 1992:475-503.

4. Cantele H, Mendez A, Leyba J. Colostomy closure using local anaesthesia. Surg Today. 2001;31:678-80.
5. Abreu RAA, Speranzini MB, Fernandes LC, Martos D. feasibility analysis of loop colostomy closure in patientsunder local anaesthesia. Acta Sir Bras. 2006;21(5):270-4.
6. Haagmans MJ, Brinkert W, Bliechrodt RB, Von Goor H, Bremers AJ. Short term outcome of loop ileostomy closure under local anaesthesia: results of a feasibility study. Dis Colon Rect. 2004;47:1930-3.

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