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LOOP ILEOSTOMY;
COMPLICATIONS IN CASES OF ENTERIC PERFORATION

DR. MUHAMMAD SHER-UZ-ZAMAN
FCPS (Surgery)
Assistant Professor Surgery
Quaid-e-Azam Medical College,
Bahawalpur

DR. FAWAD HAMEED
FCPS (Surgery)
Registrar Surgical Unit-I
B.V Hospital, Bahawalpur

DR. SHEIKH ATIQ-UR-REHMAN
FCPS (Surgery), MRCS(Eng)
Senior Registrar Surgical Unit-I
B.V Hospital, Bahawalpur

Dr. Younis Khan
FCPS (Surgery)
Senior Registrar Surgical Unit-I
B.V Hospital, Bahawalpur

ABSTRACT... Enteric perforation is a disastrous complication of untreated or poorly treated typhoid fever and unless treated by surgical method, it results in considerable morbidity and mortality. The purpose of this study to describe complications of ileostomy in patients of enteric perforation. **Place & Duration of study:** The study was conducted was in surgical units B-V hospital, Bahawalpur from 1st July 2008 to 30th June 2009. **Material & Method:** This was a descriptive case series study. 100 patients of both genders suffering from typhoid fever with perforation who underwent ileostomy were included the study. All the data was collected on pre-designed proforma. **Results:** Most of the patients were young with male to female ratio 1.6:1. Ileostomy was done in all the patients after cleaning the peritoneal cavity. Ileostomy was associated with diarrhea 20%, peristomal skin problems 22%. Other complications were bleeding in 3%,prolapsed in 5%, retraction in 4%, parastomal hernia in 5%, wound infection in 8%, intestinal obstruction in 5% patients, incisional hernia & psychological symptoms in 2% patients and stoma stenosis in one patient in our study. Two patients expired due the complication of ileostomy. **Conclusions:** Although ileostomy is not the most favored way of treatment of enteric perforation and it is associated with a number of complications and management problems, it is still a good option and life saving procedure in our setup where patients present very late with gross peritoneal contamination.

Key words: Typhoid fever, ileostomy, peritonitis.

INTRODUCTION

Ileostomy is a social trauma to the patient due to faecal waste and its smell, thus demanding quality management which is possible if highest degree of technical ability and compassion are displayed. More over one should adapt those surgical techniques that have proved consistently reliable and rewarding, Ileostomy is not very uncommon in cases of enteric perforation now a day, so learning proper surgical technique, its care & looking after its complications is very important both for the surgeon as well as for the patient[1,2].

Typhoid fever is very common in Pakistan especially in backward areas where contaminated water and other sources of infections are in abundance[2,3]. Although enteric fever has largely disappeared from the developed countries, it still remains endemic and serious mailto: dratiq2002@yahoo.com health problem in many parts of the world, including Pakistan[3]. Also this disease is routinely treated by quacks, which prolong the duration of disease and finally they end up in complications. One of the ominous and not very uncommon complications is enteric perforation. Perforation of a typhoid ulcer usually occurs during the third week and is occasionally the first sign of the disease[2,3,4]. The highest morbidity is seen in patients who require emergency operation, where the stoma is unplanned.[5,6].

The presence of ileostomy entails a daily obligatory loss of 500-600 of fluid containing 40-50meq sodium, thus there is chronic salt losing state, peri-stomal irritation is perhaps the commonest complication of loop ileostomy (20-30%)[5,8].

In addition to acute maceration and inflammation of the skin, pseudoepitheliomatous hyperplasia may arise at the mucocutaneous border of stomas subjected to chronic mal-fitting appliances. Other complications after loop ileostomy are bleeding, Ischemia, obstruction, prolapse, retraction, stenosis, parastomal hernia, fistula, residual abscess, wound infection and incisional hernia[9,10,13,15,16].

The surgical interventions available for perforation are primary closure, resection and anastomosis, loop

ileostomy or drain insertion[11,12,14,18]. To choose a surgical procedure is no more a personnel choice as we follow the New Scoring system for the management of enteric perforations[7,22,23].

The purpose of this is to describe complications of leostomy in cases of enteric perforation due to typhoid fever.

MATERIAL AND METHODS

It was a descriptive case series study, which was conducted in surgical units of Bahawal Victoria Hospital Bahawalpur. A total of 100 patients will be included in the study. Duration of study was from 1st July 2008 to 30th June 2009. Sampling technique was purposive non-probability type. All patients of any age and sex under going ileostomy due to typhoid fever presenting with enteric perforation were included in the study. Patients who under went ileostomy due to other diseases or Patients suffering from typhoid but expired during or in the immediate first 24 hours postoperative period will be excluded from study.

The detailed data of all the patients suffering from typhoid fever presenting with enteric perforation will be collected on Proforma. All the variables regarding the history of fever, treatment before hospitalization, probable date of perforation and the delay after the perforation will be noted. The clinical variables like anaemia, hydration, jaundice, temperature, blood pressure, pulse and respiration rate will be noted and his score will be calculated to find his group so that treatment plan should be evaluated for that particular patient(Table no: I & II).

The operative findings will be noted in terms number of perforations, contamination and detail of surgical procedure will be recorded. All these patients will be followed up in immediate postoperative periods and all the complications will be noted. After the discharge each patient will be followed up as out patient and record of the complication will be kept up to 6-8 weeks till the time of ileostomy closure.

Statistical Procedure: The data will be entered into SPSS version 10.

Table-I. New scoring system for the decision of management

Criteria	Points Awarded		
	1	2	3
History of perforation	1 day	2-5 days	>5 days
Pulse	90-100/min	100-120/min	>120/min
BP (mmHg)	>90/60	70-90/40-60	<70/40
Respiration Rate (per min)	30-40	41-50	>50
Temperature (F^0)	99-101	101-104	>104
Dehydration	Mild	Moderate	Sever
Hamoglobin (g%)	9-12	5-9	<5
Resuscitation period (hrs)	<3	3-6	>6
No. of perforations	1-2	>2	C.P
Faecal contamination	Minimal	Moderate	Sever

Table-II. Management protocol of enteric perforation:

Group	Score	Surgical procedure
I	0-10	Primary closure
II	10-25	Ileostomy
III	>25	Tube drainage of peritoneal cavity followed by ileostomy when score become <25

RESULT

This study was conducted in surgical units Bahawal Victoria Hospital Bahawalpur. 100 patients of both genders (62 male & 38 female) were included in study. Male to female ratio was 1.6:1.0. All patients were young ranging from 11 years to 65 years of age with median age of 31 years. Sixty-five percent patients had come from rural areas of Bahawalpur and nearby districts. Rest of the patients was from urban areas.

Most of the patients were from poor socioeconomic

background. Most patients were admitted through emergency department and some were referred from medical units. Mean hospital stay was 29 days with range from 24 to 41 days. Patients were evaluated with history, clinical examination and relevant investigations.

Most of the patients reached the hospital with delay of 4 to 7 days. The most common symptom was fever with constitutional symptoms. Axillary temperature ranged from 99.8^{O} F to 104^{O} F. In our study signs & symptoms of peritonitis were present in all patients. Free air under the right dome of diaphragm was seen in 58% patients. Widal test was done in all the patients at two occasions at intervals of 7 to 10 days.

All the patients enrolled in the study fell in category 2 (score 10-25). So they were operated for ileostomy in the emergency after resuscitation. Abdomen was opened through midline incision. Abdominal cavity was thoroughly washed with normal saline and source of leakage searched. There was single perforation in 84% of the patients and multiple perforations in 16% patients. There was gross contamination of the peritoneal cavity all patients. Due to this reason ileostomy was done in all the patients and abdomen was closed after placing drain. The patients were managed in the ward and observed for any immediate complications. Antibiotics were given intravenously in all the patients. When patients started oral intake, oral antibiotics were started.

Among complications of ileostomy during hospital stay, Ileostomy diarrhoea with associated dermatological problems topped the list. Peristomal skin problems ranged from mild peri-stomal irritation to gross excoriation and bleeding. Poor sitting of the stoma also played a part in skin problems. 22% patients had peristomal skin excoriation and ileostomy diarrhoea. Diarrhoea also led to fluid and electrolytes disturbances in 6% patients. The diarrhea was severe enough that they had to be given intravenous fluids and potassium. Patients were followed up in Out Patient Department. In our study 3% patients had bleeding form the ileostomy, Prolapse of ileostomy in 5% patients and retraction of ileostomy in 4% patients, parastomal hernia in 5% patients, transient oedema of the stoma which may be associated with obstructive symptoms in 5% patients. 2% patients developed incisional hernia.

Eight percent patients had postoperative wound infection. These were managed by antibiotics and general care. 2% patients developed psychological symptoms. They were treated by the psychiatrist. No case of necrosis, fistula and stenosis of stoma was observed in our study. Two patients expired due to complication of ileostomy.

Table-III. Complications of ileostomy

Complications	Males (62)	Females (38)	Total (100)
Skin excoriation	12	10	22
Bleeding from stoma	2	1	3
Ileostomy flux	14	6	20
Retraction	2	2	4
Prolapse	3	2	5
Parastomal Hernia	1	2	3
Incisional Hernia	1	1	2
Intestinal obstruction	2	3	5
Wound infection	5	3	8
Stoma stenosis	1	-	1
Psychological symptoms	1	1	2

DISCUSSION

Typhoid fever is a common infectious disease caused by gram negative enterobacteriace, Salmonella typhi and paratyphi and is associated with a number of complications. The exact incidence of typhoid fever is not known in our country but it is thought that typhoid fever is very common in Pakistan especially in rural areas where contaminated water and other sources of infections are in abundance[1,3]. Also this disease is routinely treated by quacks, which prolong the duration of disease and finally they end up in complications. Community based studies show higher levels of typhoid fever than public health figures suggest. Annual incidence rates of 198 per 100,000 in Vietnam and 980 per 100,000 in India have been reported while best global estimates suggest that

there are at least 16 million new cases of typhoid fever with 600,000 deaths. The situation is no better in Pakistan and epidemics of multi-drug resistant typhoid fever have been reported from various part of the country[1,2,3,5, 22,23].

In this study, carried out at Department of Surgery Bahawal Victoria Hospital Bahawalpur, most of the patients were young and in their productive years. Eighty percent patients were 20-40 years age group. According to literature, most of the patients who present to hospital with typhoid fever are children or young adults[4,5]. Male to female ratio was 1.6:1.0. Most patients were from poor socioeconomic class and were illiterate[6,17]. Most of these patients had already been maltreated by quacks or poorly trained doctors which depict the lack of health care facilities or even the ignorance on the part of patients and their families.

Fever and abdominal pain were the most common symptoms[7,8]. Plain radiograph of the abdomen22 in erect posture showed gas under the right dome of diaphragm in 58% patients. The reason for smaller number of patients with gas under diaphragm may be the late presentation allowing the reabsorption of gas from the peritoneal cavity. In most of the patients there was single perforation located in terminal 30 cm; same are the findings from other studies[11,17]. Although primary closure of the perforation is preferred surgical management reported by many authors[13,14] or resection & anastomosis[18]. We choose primary ileostomy[5,7,9,17] for a number of reasons including delayed presentation, gross contamination of peritoneal cavity, friable gut and risk of leakage of primary repair due to poor healing of wound.

Skin excoriation was the most common complication among patients with ileostomy. 22% patients had this complication as compared with 10-14% in literature. In few studies, the link between higher body mass index and retraction, skin excoriation and overflow is found. This is probably due to improper location or construction of stoma and post-operative care or maintenance. There is also link between skin excoriation and overflow. It is usually difficult to maintain a good seal around the stoma and leakage of bile-salt containing gut content may result in peri-stomal irritation and excoriation. It is reported that this can be prevented by use of appliances consisting of flange or bag designed to fit closely and firmly to the skin around the stoma, with the help of latex mixture, karaya gum, stoma-adhesive or other pastes[10,13,15].

Diarrhoea was the next frequent complaint among the patients. 20% patients had diarrhoea and many of them had repeated episodes and had fluid and electrolytes i. imbalance in 6% which had to be managed by intravenous fluids. Many authors have found this complication among patients with ileostomies[5,6,9]. In our study 3% patients developed bleeding from the stoma which is similar to the literature, which was managed by ligating the bleeding vessel[10,16].

In our study 4% patients with ileostomy had retraction of stoma. The exact cause of retraction in our study may be due to the fact that most of the times; ileostomy was performed by junior resident. Lack of proper technique can play a part in such complication. Some research workers have found that there is a relation between higher body mass index and retraction. Thickened mesentery making mobilization more difficult and with a well-developed panniculus in obese patients traction is exerted on the bowel wall, which may be the main cause of retraction[19,20]. But in this study most of the patients were thin, lean and wasted. In our study, 5% patients had prolapse of the stoma. This is similar to other studies where 3.5% patients had prolapse[10]. Stoma prolapse is one of the late complications of ileostomy and is diagnosed if the stoma increases in size after maturation requiring change in appliance or surgical treatment. As our patients had lax abdominal wall, it was managed conservatively other treatment options are local resection and reformation of the stoma[13,23].

True parastomal hernia has a peritoneal sac with enlarged fascial defect while the pseudo hernia is the diffuse bulge without enlarged for temporary fascial defect, about 90% are true hernias[6,10]. Parastomal hernia in our study was in 3% patients. 2% patients had incisional hernia This was probably due to too large opening in the abdominal wall and stoma site lateral to rectus muscle[15,20]. Stoma stenosis is rare occurrence with

ileostomies[16]. One patient in our study suffered from stenosis of stoma. The probable causes include poor sighting of stoma, compromise i.e. ischaemia and inadequate opening in skin or abdominal wall. This is managed by gentle dilatation with the gloved index finger, use of stool softeners like glycerin suppositories and good peristomal care. The modern technique of designing an ileostomy with an everting spout and muco-cutaneous suturing have virtually abolished the previously common complication of stoma stenosis[19,20].

In addition, a loop ileostomy has an adverse effect on the quality of life, which is further enhanced if stoma related complications occur[16,21]. Two patients developed the psycholigcal symptoms. They stopped speaking & eating any thing. Their symptoms settled after taking treatment from the psychiatrist. Two patients expired due to complications of ileostomy in our study.

Ileostomy is not very much favored in literature as the primary mode of treatment for entric perforation typhoid fever[12,14,18]. The literature is full of complications and management problems of ileostomy[10,13,20,23]. It is only a temporary measure and extra cost of management is not more than cost of life. It is a safe and quicker procedure which can be done in small hospital and by less trained surgical staff[6,7,9,15,17].

CONCLUSIONS

This study showed that typhoid perforation is still very common after all those peaks of health education, recent advances and improved care at basic health "units in Pakistan. Majority of the patients still report late to tertiary care units. Surgeons are left with no better option than a stoma. Stoma itself is a big issue and major burden to the health of already diseased patients. And then, a vicious cycle of multiple complications encircles patient. There is a need to break this cycle by adopting simple and effective measures at early stages of complications.

All those complications mentioned in our study are not meant to threaten the concerned but, to convey a message of awareness, Ileostomy is a life saving and damage control surgical procedure. And above all, the last resort for majority of the patients discussed in our study.

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Correspondence Address:
Dr. Sheikh Atiq-ur-Rehman
FCPS (Surgery)
Senior Registrar Surgical Unit-I
B.V Hospital, Bahawalpur
dratiq2002@yahoo.com

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