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COMPLICATIONS OF COLOSTOMY;
FREQUENCY IN A TERTIARY CARE HOSPITAL

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ABSTRACT… Objective: To study the frequency and types of complications in colostomy patients. **Stuyd Design:** Prospective cross sectional study. **Setting:** Department at Surgery, Fauji Foundation Hospital Rawalpindi. **Period:** 1st December 2009 to 30th November 2011. **Material & methods:** A total of 104 consecutive patients who end up with colostomy due to any reason were included in the study. **Results:** It was noted that 52 patients had stoma due to malignancy and complications was noted in 40 patients. Same number of Patients operated for non-malignant disease i.e. 52. Complications noted in only 24 patients while 28 were without complications. **Conclusions:** The chances of complications in different type of stomas are much higher in case of malignancy. It is recommended that such operations are performed by senior surgeons in order to avoid post-operative morbidity and mortality.

Key words: Colostomy prolapse, loop colostomy, sigmoid colostomy, parastomal hernias.

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INTRODUCTION

Approximately 100,000 people in United Kingdom are living with a stoma at any one time[1]. The number of people with stoma has decreased over past 10 to 15 years with the advent of the stapling gun for the management of low anastomosis in the rectum[2]. Stomas inevitably cause problem that can lead to anxiety, distress and even depression for the patient[3]. Established stomas sometimes cause complications but they become evident at a later stage, as a result of weight gain or loss and effect of particular life style or occupation[2]. Despite advances in surgical techniques, the problems of creating a stoma continue and cause complications in at least 18% of patients[4]. Most patients do not accept colostomy and consider equivalent to loss of limb or an eye. The presence of stoma is considered a burden by the patient especially if the colostomy is badly sited or constructed[5]. J. C. Ruiz et al reported that stoma influenced life style in 53% of patients having colostomy. Restriction of sexual activity in 45%, effected employment in 44% and altered life style in 8%. On average, it took six to twelve months to adapt to stoma by the patient[6]. Persistently high morbidity and mortality rates associated with stoma creation and reversal are behind attempts to reduce their formation. Long-term complication rates of 58% in colostomies[6] and up to 76% in ileostomies have been reported[7]. It is also recognized that around 15% of temporary stomas created at the time of anterior resection become permanent[8]. There has been much recent work examining risk factors for mortality in colorectal cancer surgery[9] such as ASA grade and age, but whether the presence of a stoma affects mortality has not been previously examined[9].

Objectives

To study the frequency and types of complications in colostomy patients.

PATIENTS AND METHODS

After taking written consent from the patients or their relatives, this study was carried out in the Department at Surgery, Fauji Foundation Hospital Rawalpindi from 1st December 2009 to 30th November 2011. Ethical approval was taken from

Ethical Committee, Fauji Foundation Hospital. A total of 104 consecutive patients who end up with stoma due to any reason were included in the study. Data was collected on a specified proforma and analyzed on SPSS 17.

Study Design
Prospective, cross-sectional study.

Inclusion and exclusion criteria
All the patients whose operations were performed in the Fauji Foundation Hospital Rawalpindi were included in the study. Only those patients who either refused to give consent for the study or under the age of 12 were excluded from the study.

RESULTS
A total of 104 patients were included in this study. Male to female ratio is shown in table I.

Total	Males	Females	%age
104	28	76	1:2.7

Table-I.

Average age was 43.85 years. Age ranges from 20 to 72 years. The youngest was female of 20 years and oldest one was male of 72 years of age. Types of colostomies are shown in table-II. During the study period 62 (59.61%) patients developed stoma related complication. The incidence of complication was higher in end- colostomies.

Type	No.
Permanent end colostomy	52 (50%)
Hartman's procedure	12 (11.54%)
Sigmoid loop colostomy	38 (36.54%)
Transverse loop colostomy	2 (1.92%)
Total	104 (100%)

Table-II

Chi square test is applied to evaluate statistical relevance between complications and underlying disease. When patients operated for malignancy and the complications noted in them are subjected to Chi square test, it was noted that 52 patients had

Complications	No. of patients	%
Necrosis	5	4.80%
Bleeding	4	3.84%
Prolapse	6	5.76%
Retraction	7	6.73%
Stenosis	6	5.76%
Skin irritation / infection	16	15.38%
Local pain	11	10.57%
Diarrhea	4	3.84%
Disease recurrence	1	0.96%
Mortality	2	1.92%

Table-III.

stoma due to malignancy and complications was noted in 40 patients. Only in 12 patients, there was no complication. Same number of Patients operated for non-malignant disease i.e. 52. Complications noted in only 24 patients while 28 were without complications.

DISCUSSION
The female to male ratio of 2.7:1 is higher in study as compared to others[10]. This is due to entitlement of all females and limited ex-servicemen themselves in Fauji Foundation Hospital.

Colostomies are made as life-saving procedure in emergency, to protect distal anatomists, for palliation in critically ill patients, in perineal sepsis and for excision of carcinoma of lower third of rectum. Age itself, more than forty years is associated with increased morbidity as aged patients have difficulty in handling colostomy appliances[11]. Illiteracy, poverty, dependency, absences of stoma care services, non-availability of stoma appliances in remote under developed rural areas are additional factors increasing stomacomplications in our patients. The overall complications rated reported in international literature is from 18 to 81 percent[11,12,13,14,15,16]. In this study 59.61% stoma related complications are observed. Early complication rate is 28 percent1[12]. J.C. Riuz et al have found that irrigation effect

overall stoma problems; only 13 percent of patients practicing irrigation have stoma problems whereas 87 percent of those not using irrigation suffer stoma problems[14].

A. RazzaqueShaikh reports stoma necrosis in 9.6 percent patients[5]. Incidence as high as 25 percent is reported by Chapman and others17.4.80 percent of our patients developed necrosis. Only one patient had complete necrosis and it proved fatal.

The incidence of bleeding is 1.9 percent as reported by A Razzaque Shaikh[5]. Others report incidence of 3 to 10 percent. In this study 3.84% of stomas had bleeding. Post-operative hemorrhage occurs in the first 48 hours after surgery and is rarely severe. It is different from the thin blood stained serous fluid in the bag, clots appearing at muco-cutaneous junction, or along the appliance ring. Minor trauma from ill-fitting colostomy appliances to exposed mucosa result in bleeding. Hemorrhage can be from de novo carcinoma or from recurrence of the disease. Postoperative frank bleeding can occur from a small mesenteric artery. All patients in study had minor bleeding and managed conservatively.

Prolapse reported in 1 to 15 percent of colostomies[5,11,17,18]. 5.76% of patients in this study are observed to have this complication. It is more common in loop colostomy (20% as compared to end colostomy 2%). It is frequent in transverse than sigmoid colostomy. The proximal limb is mostly prolapsed but some claim it to be more in the distal limb[5].

The incidence of retraction varies from 1 to 15 percent[5,18]. It usually occurs on the third or fourth postoperative day and is more common in end colostomy than loop colostomy[5]. 6.73% percent of patients in this study had retraction. Etiological factors include, tension on bowel, obesity, postoperative ileus and abdominal distension. Retraction can be prevented by adequate gut mobilization.

Stenosis is a common complication of end colostomy occurs in 2-10 percent of case[5,18]. In this study, stenosis is observed in 5.76% of patients. It occurred in one patient due to disease recurrence, malignancy at the stomal site, and in remaining five it was due to recurrent peristomal infections.

Skin irritation is reported from 9.6 to 76 percent[10,11,5,18]. In this study 15.38% of patients experienced skin problems. J.C. Ruiz et al have found that irrigation affects skin irritation. Only 24 percent of patients using irrigation suffer from skin irritation in contrast to 76 percent not using irritation[14]. Minor trauma caused by the adhesive wafer causes transient dermatitis in at least 50 percent of patients. Many skin problems can be avoided by preoperative correction of malnutrition and selecting appliances that do not require frequent changing. Underlying skin condition as icthyosis, psoriasis, eczema, etc, result in different pattern and require the help of an expert dermatologist[4].

10.57% of patients complained of pain at the stoma site in this study. Park JJ. Et al has reported pain associated with poor stoma location in 7%[12]. In our study, high incidence of pain in stoma patients is due to high incidence of skin irritation.

Diarrhea is observed in 3.84% of patients in this study. There is no reported incidence of diarrhea is present in literature for colostomies. Diarrhea is common due to infective causes in our country. All cases were managed symptomatically with antibiotics and oral dehydration salts.

The mortality rate of 2 to 1.92 percent is reported by various studies[5,15,19]. In this study, total 1.87% mortality (total 2 patients) is observed. Half of these patients died of stoma complication and half due to other cause.

There are some other worth mentioning complications of stomas which were fortunately absent from our study group like fistula, parastomal hernias and obstruction.

Fistulae occurs in 1-10 percent of colostomies[4,18]. None of the patients in the study developed fistula.

A RazzaqueShaikh has reported similar results[5]. Etiology includes non-absorbable suture transfixing the bowel lumen[20], infection, foreign body reaction and hematoma surrounding the colostomy is a predisposing factor[5]. Hernia is the most common stoma complication. It is more common in ileostomies. The reported incidence ranges from 3 to 30 percent[5,18,21]. Londono-Schimmer EE. et al has found that cumulative risk of para colostomy hernia rose to 37 percent at ten years[18]. Stelzner S, et al reports that surgical intervention is required in 20 percent of cases with Para colostomy hernia[22]. Some authors claim it to be common after end colostomies[21]. Herniation is a late complication. No colostomy or Para colostomy hernias are observed in this study.

The reported incidence of obstruction in colostomies is from 1.9 to 5 percent[5,18]. None of the patients in study reported with obstruction. It was due to routine closure of lateral paracolic gutter in end colostomies. Causes reported included adhesive of bowel to primary disease site, herniation into lateral paracolic gutter, fecal impaction secondary to stenosis developing at skin or fascial levels, ischemic stricture of colon near stoma[23].

CONCLUSIONS AND RECOMMENDATIONS

Complications are more common in patient with carcinoma. Morbidity is high in elderly patients. Majority of postoperative deaths occurs in immediate prospective period. Formation of a colostomy should not be taken lightly, it demands sound surgical expertise and should be constructed by a senior member of a surgical team. It is also observed that there is no stoma care staff or clinics available for the proper training and guidance of stoma patients, even at tertiary care facilities. It is also strongly recommended that there should be stoma clinics which provide an opportunity to the patients to discuss the related problems among themselves.

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