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Analysis of Risk Factors of Intestinal Stoma Related Complications

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I. BACKGROUND

Stoma is a Greek word meaning 'mouth' or 'opening'. Stoma surgery results in a small opening on the surface of the abdomen being surgically created in order to divert the flow of faces and/or urine. Stoma creation can be mentally and physically affecting the patient. The related complications due to the procedure can also have a bearing on the outcome of the stoma after the surgery and also on the financial status of the patient. There is also a social change these patients have to accept as a part of the stoma in view of need for constant change of the bag, the foul odor that comes from it and also the difficulty in hiding the bag. There also the additional burden of reoperation for stoma closure or for stoma complications which also puts a financial, physical and psychological strength of the patients.

Risk factors: Manyrisk factors that predispose a patient to develop complications including patient-, operation and disease-specific issues. Commonly reported patients specific parameters include age, gender, body mass index (BMI), nutritional status, corticosteroid use. Operation specific risk factors include emergency versus elective surgery. Intraoperative factors like surgeons' expertise, type of approach (Laparoscopic or open) placement of bridge.

Research problem

1. There are not many studies about intestinal stoma related complications in the past.
2. The data vary and are often conflicting in the identification of the risk factors.
3. There is chance that the patients in whom the stoma is created will be lost to follow up.

Research Questions: What are the risk factors of intestinal stoma related complications and their effects on prognosis of the disease.

Hypothesis:

The intestinal stoma l complications are related to risk factors like Obesity, Underlying diseases (indications), Age, Surgeon's expertise, Type of approach and placement of bridge.

OBJECTIVE:

Primary Objective: To find out the complications following intestinal stoma creation of surgeries of small gut and large gut.

Secondary Objective: To find whether emergency intestinal stoma or elective intestinal stoma creation is related to intestinal stoma complications.

II. METHODOLOGY:

Place of Study: VIMSAR, Burla

Study Setting: Patients admitted in wards of Department of General Surgery, VIMSAR, Burla.

Period of Study: November 2020 to October 2022

Study design: Observational Study

Study Population: All patients who have undergone intestinal stoma creation following laparotomy at VIMSAR, Burla.

Data collection period: April 2021 to March 2022

Sample Size: 150

Sampling: Purposive sampling technique will be used for recruiting study participants.Selection Criteria:

Screening: All cases where intestinal stoma was created during abdominal surgery will be screened for complications and their Risk factors by:

1. Thorough clinical evaluation
2. Radiological and Biochemical evaluations
3. Functioning of intestinal stoma

Inclusion Criteria: All intestinal stoma with complications: -

Early complications - Intestinal stoma l congestion, Gangrene, Retraction, parastomal abscess, peristomal irritation

Late complications - Stomal prolapse, stomal stenosis and parastomal hernia

Exclusion Criteria:

1. The patient who will refuse for follow up
2. Critically ill patients with multiorgan dysfunction
3. Patient with severe sepsis

Study variables

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1. Demographic variables – Age, Gender
2. Blood parameters – Hb, TPC, Hematocrit, TLC, DC
3. Other parameters – PR, BP, RR, Urine output

Excepted outcome:
The frequency of intestinal stoma related complications, their association with above this factor and their effect on prognosis of the disease.
Data collection method- interviewing and observation of cases during study period (April 2021 to March 2022)
Conflict of interest- Nil
Ethical approval- Approved

III. RESULTS-

During the period starting from November 2020 to October 2022, a total of 150 patients were admitted under the Dept of General Surgery of VIMSAR, Burla with stoma. This included both elective and emergency cases who had undergone stoma surgery. The variables to be analysed for these patients after being collected showed 33 individuals who had developed complications following the surgery. Thus, the total number of patients calculated to having any complications following stoma surgery in the study population was found to be 22%. All the surgery done were open surgery and hence no comparison between open and laparoscopic approach to the surgery can be made in the study.

The breakdown of different complications seen in the patients analysed are given in the table below-

Complications	Cases
Abscess	02
Gangrene	08
Mucocutaneous separations	O6
Stomal retractions	07
Stomal prolapse	09
Parastomal hernia	01
Total	33

Parameters		Complications		p-value
		Early complications	Late complications	
Age (in years)	>/=60	10	15	p-0.899765
	<60	3	5	
Gender	Male	11	14	p-0.338426
	Female	02	06	
Initial diagnosis	Malignancy	04	10	p-0.274748
	Non malignancy	09	10	
Setting of surgery	Elective	05	09	p-0.71038
	Emergency	08	11	
Comorbidities	Yes	06	07	p-0.521692
	No	07	13	
Albumin	Low	07	14	p-0.345895
	Normal	06	06	
Hemoglobin	Low	06	08	p-0.726713
	Normal	07	12	
Type of stoma (anatomy)	Ileostomy	07	10	p-0.828975
	Colostomy	06	10	
Type of stoma (surgical)	End	07	15	p-0.138128
	Loop	06	05	
BMI	Low	03	06	p-0.7636
	Normal	06	10	
	High	04	04	

Table no 02- Comparing the various factors with early and late complications

IV. CONCLUSIONS

In the study conducted the various parameters which could potentially be a cause of stoma complications were assessed and described above. The analysis of the same did not reveal any relevant finding. None of the parameter in the study showed any association with the formations of stoma complications following stoma surgery. There was no significant association of these parameter with regards to the early and late stoma complications either.

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