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Original Research Article

Study of outcome of patient with faecal fistula

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ABSTRACT

Background: Approximately 80% gastrointestinal fistulas occur following surgery. Due to the high morbidity and mortality associated with gastrointestinal fistula, effective treatment is important. Therefore, this study was conducted to study the outcome of management of patients of gastrointestinal fistula.
Methods: 30 Patients developing the condition following surgery were included. All patients were treated either conservatively or operatively by various means and varying period of time. Treatment was focused on the correction of dehydration, controlling sepsis, management of electrolyte imbalance.
Results: Younger patients had better fistula healing rate (85%) than older (70%). A high rate of spontaneous healing was observed (85%) in patients who were managed conservatively. Patients with low output fistula had better fistula closure rate as compared to high output fistula. Ileum was the most common site for fistula formation, account for 43.33% of all fistulas. Spontaneous healing rate was better in fistula involving large bowel and duodenal fistula. Patients having both anemia and hypoproteinemia had poor healing rate (72.73%) as compared to those having only anemia and hypoproteinemia.
Conclusions: Conservative management with emphasis on improvement of nutrition, control of sepsis, management of fluid and electrolyte balance and control of fistula output supersedes than operative management. Operative intervention must be done in selected cases after improvement of nutritional status and control of infection.

Keywords: Enterocutaneous fistula, Electrolyte balance, Hypoproteinemia, Spontaneous healing

INTRODUCTION

A fistula is defined as an abnormal communications between two epithelialized surfaces. Gastrointestinal fistulas are usually very serious complications and are associated with high morbidity and mortality rates. They cause abnormal diversions of gastrointestinal contents, digestive juices, water, electrolytes and nutrients from one hollow viscous to another or to the skin, thus causing a wide variety of pathophysiological effects. Although gastrointestinal fistula can occur spontaneously in inflammatory bowel diseases, diverticular disease of the colon, cancer or radiation enteritis, most gastrointestinal fistula (approximately 80%) occurs following surgery.

Due to the morbidity and mortality associated with gastrointestinal fistula, effective therapy is important. However, successful treatment of gastrointestinal fistula is a continuing challenge. Fistulas in the majority of patients are complex to treat and multiple therapies are required. The first major study on ECF from Massachusetts general hospital in1960 by Edmunds, Williams and Welch reported 44% mortality rate.[1] Comparing early series prior to 1989 with later ones mortality rates fell from 17% to 5%.2 Recent advances in nutritional support, interventional radiology and wound management have greatly improved options for treatment of ECF. Introduction of parenteral nutrition and intensive care in the 1970s decreased mortality rates but patients remain in hospital for weeks or even months before their

fistula finally close. Therefore, a treatment that could shorten fistula closure time would be highly beneficial and also causes considerable reduction in hospital cost.

We come across this condition as a complication of routinely performed surgeries and outcome of management would depend upon the site of communication with the gastrointestinal tract as well as the general condition of the patient. Therefore, this study was conducted to study the outcome of management of gastrointestinal fistula and factors influencing it.

METHODS

This prospective study of 30 patients with gastrointestinal fistulas treated during time from May 2011 to October 2013 in civil hospital, Ahmedabad and who developed the condition following surgery in the hospital as well as those operated elsewhere and transferred to the hospital were included. Patients with esophageal, biliary, pancreatic, perianal, internal fistula, and those who developed fistula spontaneously were excluded.

Data was recorded in predesigned performa. Details like anatomical location of fistula, causes of fistula formation, fistula output and outcome of management were recorded. A fistula output of 500 ml/day was taken as the cutoff between high and low output fistulas. In the study all patients were treated either conservatively or operatively by various means and varying period of time. Treatment was focused on the correction of dehydration, controlling sepsis, management of electrolyte imbalance by appropriate fluid resuscitation and provision and maintenance of nutrition. Routine blood investigation including haemogram, serum electrolyte, serum protein in addition to body habitus measurement were conducted to access the nutritional and hemodynamic status of the patients as well as to know the response to treatment. Corrective intervention was instituted whenever required.

RESULTS

A total of 30 patients were included in the study, of which 18 were males (60%) and 12 were females (40%). In the present study it was found that younger patients (<40 years) had better fistula healing rate (85%) than older (>40 years) (70%). Patients with elective surgery (100%) had better fistula healing rate than emergency surgery (71.43%). Patients who were managed with conservative means had better healing rate (85%) than patients managed operatively (70%) (Table 1). Among the etiological factors studied in re-explored patient group disruption of primary closure (30%), disruptions of live omentopexy (40%) were common causes and comprise 70% of total patients. Anastomosis leak (10%), stricterplasty site leak (10%) and stomy retraction (10%) were other causes of fistula in re-explored patients. Patients with high output fistula had a lesser fistula closure rate (66.67%) as compared to low output fistula(100%) (Table 2). Spontaneous healing rate was better in fistula involving large bowel (100%) and duodenal fistula (100%) as compare to stomach (25%), jejunum (50%) and ileum (92.31%) (Table 3).

Table 1: Comparison of outcome between patients with different parameter.

Parameters		n (%)	Healed
Age	<40	20 (66.67)	17 (85.00)
	>40	10 (33.33)	7 (70.00)
surgery	Emergency	21 (70)	15 (71.43)
	Elective	9 (30)	9 (100)
Management	Conservative	20 (66.67)	17 (85.00)
	Operative	10 (33.33)	7 (70.00)

Table 2: Relation of fistula output to outcome of fistula management.

Fistula output (ml/day)	n (%)	Healed
Low (<200)	8 (26.7)	8 (100)
Moderate (200-500)	16 (53.33)	12 (75)
High (>500)	6 (20)	4 (66.67)
Total	30 (100)	24 (80)

Table 3: Outcome of fistula management at different sites.

Site of fistula	n (%)	Healed
Stomach	4 (13.33)	1 (25)
Duodenum	3 (10)	3 (100)
Jejunum	4 (13.33)	2 (50)
Ileum	13 (43.33)	12 (92.31)
Large Bowel	6 (20)	6 (100)

Table 4: Relation of nutrition to outcome of fistula management.

Nutritional Status	n (%)	Healed
Anemia	5 (16.67)	4 (80)
Hypoproteinemia	6 (20)	5 (83.33)
Both anemia + hypoproteinemia	11 (36.67)	8 (72.73)
Normal patient	8 (26.67)	7 (87.50)

In this study, patients with hemoglobin <12 gm% in males and <10 gm% in females were considered anemic. Patients with serum protein <6.5 gm were considered to have hypoproteinemia. Patients having both anemia and hypoproteinemia had poor healing rate (72.73%) as compared to those having only anemia (80%) and hypoproteinemia (83.33%) (Table 4).

DISCUSSION

Closure of a fistula either spontaneously or surgically is the ultimate goal of management of fistula. Chapman, Foran and Dunphy reported their experience with 56 cases of ECF from 1953 to1963 and they organized

management in priorities of treatment that evolved over time into the current phases of care of the fistula patient followed today.[3] In our study definitive surgical procedure was required in 10 patients, out of which 70% had their fistula successfully healed. A similar finding was reported by Megan et al and Ruben et al in their study.[2,4] The timing of definitive surgical closure of the fistula is a controversial subject. Most studies prefer delayed surgical closure after the occurrence of fistula to allow for resolution of inflammation within the peritoneal cavity, improvement of the patient's nutritional status and for the control of local infection. The rate of spontaneous closure in our study was higher than in study done by Ruben et al.[4] Reber et al reported higher rates of spontaneous closure in fistula resulted from surgical causes than in fistula resulted from non-surgical causes.[5]

Measurements of fistula output can be helpful in predicting outcome. In our study, spontaneous closure was greater in low output fistula (100%) than in high output fistula (66.67%). Fistula output was found to be a significantly independent predictor of spontaneous closure and mortality (p-value <0.001) in a study done by Chalya et al.[6] Other studies reported that mortality rate was higher in high fistula output patients as compared to patients having low fistula output.[1,6] Patients with high fistula output have a higher incidence of fistula associated complications such as electrolyte imbalance, sepsis and skin excoriation. They also have lower incidence of spontaneous closure. In our study, it was found that ileum was the most frequent site for fistula formation, account for 43.33% of all fistulas. A similar finding was reported by other studies.[7,8] Serum albumin is definitely an important predictor for healing of fistula and mortality. Study done by Gibbs et al conform that hypoalbuminemic patients fail to recover well after restorative surgery and concluded that albumin levels therefore provide a good measure to assess a patient's health status and outcome of management of fistula and surgical intervention should ideally be performed when levels are normal.[9] Study done by Ruben at el shows those patients who were having an albumin level below 25 gm/l and underwent operation show continued signs of inflammation despite all endeavors to treat infection.[4] Some studies found higher mortality rate among patients having low albumin level.[7,10] In our study patients having both anemia and hypoproteinemia had poor healing rate as compared to those having only anemia and hypoproteinemia. Prakash et al found statistically significant association between albumin level and healing of fistula and they also found no statistically significant association between anemia and healing of fistula.[7]

CONCLUSION

In a fecal fistula patient, conservative management with emphasis on improvement of nutrition, control of sepsis and control of fistula output supersedes than operative management. But it requires patience of surgeons, patients and their relatives. Operative intervention must be done in very highly selected cases. It should be done after upliftment of nutritional status and control of infection. This study has very small database and it requires larger database to arrive at final diagnosis.

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