



## ANALYSIS OF ENTERO-CUTANEOUS FISTULAS CONSERVATIVE MANAGEMENT

## General Surgery

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## ABSTRACT

Entero-cutaneous fistula is an abnormal communication between the GI tract and skin. With historical wound care measures, 90% of spontaneous closure occurred in the first month after sepsis resolution, with an additional 10% closing in the second month, and none closing spontaneously after 2 months. Spontaneous closure occurred in 8 patients(80%) and surgical closure was done in 2 patients (20%). Surgery accounts for majority of cause for ECF. *SO PREVENTION IS BETTER THEN TO ATTEMPT CURE* . ECF remains a complex problem that is optimally management using a careful approach.

## KEYWORDS

MLL - Morel-Lavallee Lesion

## 1.INTRODUCTION:

Enterocutaneous fistula is an abnormal communication between the GI tract and skin. In spite of immense advancement in post-operative care, Enterocutaneous fistulas (ECF) remain one of challenges because of their anatomical abnormalities, metabolic derangement and associated extensive sepsis. There are several ways in which ECF has been classified, including by output, etiology, and source.<sup>1, 2, 3</sup> Most often, a high-output ECF is characterized as one with >500 mL/24 hours, low output <200 mL/24 hours, and a moderate output fistula between 200 and 500 mL/24 hours. Mortality remains high due to the frequent complications of sepsis and malnutrition. Regardless of the etiology the ultimate goals in treating patients with enterocutaneous fistula, and re-establishment of bowel continuity, to achieve oral nutrition and the closure of the fistula. This article reviews treatment, with emphasis on the provision and optimal route of nutritional support. Closure rates without operative intervention in the era of advanced wound care and parenteral nutrition (PN) vary considerably in reports 19 to 92%,<sup>4, 5</sup> with most studies demonstrating closure rates in the 20 to 30% range.<sup>5, 6, 7, 8</sup> With historical wound care measures, 90% of spontaneous closure occurred in the first month after sepsis resolution, with an additional 10% closing in the second month, and none closing spontaneously after 2 months<sup>9</sup>. Aim of the study was to audit the results of conservative approach in patients with entero-cutaneous fistula thereby reducing the morbidity and mortality associated with Surgery.

## 2.PATIENTS &amp; METHODOD:

10 CASES of Entero-cutaneous fistula were managed conservatively admitted in surgical ward. Only patients with Entero-cutaneous fistulae in the small intestine were included in the study.

## METHODS:

All patients have been treated according to the SOWATS guideline<sup>10</sup>  
The following treatment guidelines were followed:

**1. SEPSIS CONTROL:** Leading cause of death in patients with entero- cutaneous fistula.IV Antibiotics according to culture reports.Radiological Drainage of abscess.Control other infection foci-IV line,urinary tract infection,pulmonary infection.

**2. Optimization of Nutritional Status:**Rehydration(Fluid replacement)isotonic fluid(NS/RL).Electrolyte supplementation.(Hypokalemia & metabolic acidosis is quite common)Parenteral nutrition(TPN) to meet calorie requirements(high output fistulas).Allow 500ml/day clear liquids orally.Enteral Nutrition is Preferred over Parenteral Nutrition.Nutrition via the Enteral route helps in maintaining the intestinal mucosal barrier, stimulating hepatic protein synthesis.Twice the daily requirement of vitamins, trace elements, zinc and upto 10 times the daily requirement of Vitamin C should be provided.

**3.WOUND CARE:**Gauzes for low output fistula.Drainage of excessive entero-cutaneous fluid with sump catheter.Stoma for drainage (Stoma adhesive bags).Skin care by - Zinc oxide cream , Aluminium paint. Vaccum assisted closure devices.

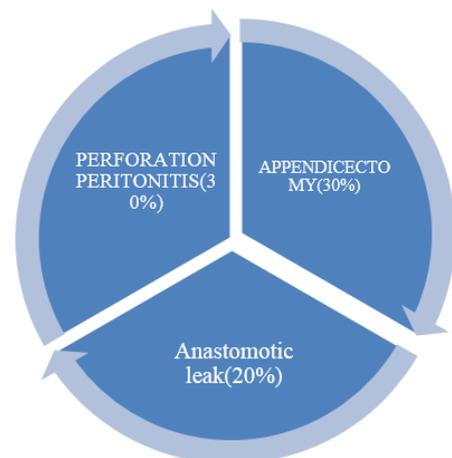
**4. ANATOMY OF ENTERO-CUTANEOUS FISTULA:** Pre-operatively Fistulography or CT scan -length of intestine & localization of origin of ECF , Stenosis , obstruction & fluid collection.Fluroscopic contrast studies.Bio-chemical analysis of Entero-cutaneous fistula( Bilirubin & amylase).Activated charcoal or Indigo carmine by mouth can help in diagnosing ECF.

**5. TIMING OF SURGERY:** Patients are eligible for surgery when septic foci are adequately treated and subjective criteria for a good clinical and nutritional condition are met. These criteria include the patient's becoming mobile, feeling well, taking an interest in his/her surroundings, and becoming impatient to proceed with the restorative surgery. The absence of signs of sepsis is defined by increasing albumin and hemoglobin and decreasing leukocyte and thrombocyte counts, C-reactive protein and erythrocyte sedimentation rate levels. The minimal period between the development of the fistula and the restorative surgical approach is 6 weeks.

**6. SURGICAL STRATEGY:** One stage procedure.Careful adhesiolysis,Wedge excision or intestinal resection,Limit number of anastomosis to minimum.Cover suture with healthy viable tissue.

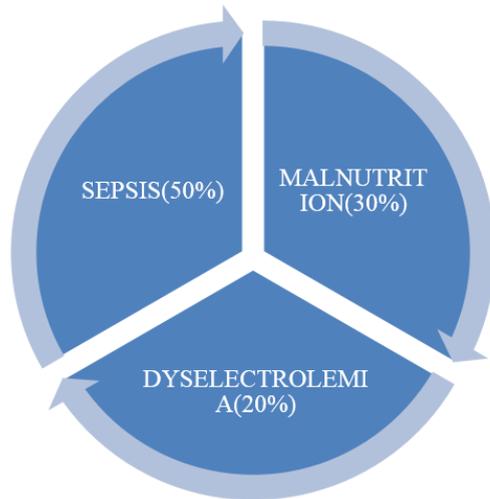
## 3.RESULT:

Among 10 ECF patients, 8 Cases (80%) were postoperative and 2 cases (20%) were spontaneous(1 case following intra-abdominal sepsis & othe following trauma respectively) . Among the postoperative ECF, following appendicectomy 3 cases (30%), Perforation peritonitis 3 cases (30%) and anastomotic leaks 2 cases (20%) were predominant causes.



**FIG1.**Post-operative causes of Entero-cutaneous fistula.

Malnutrition (30%), Sepsis (50%) and Dyselectrolytemia (20%) were commonest adverse factors.



**FIG2:** Adverse effect following Entero-cutaneous fistula.

Of the total cases 6 cases(60%) were low output fistula & 2 cases(20%), were medium output fistula & 2 cases(20%) were high output.

It was seen that conservative management resulted in Spontaneous closure in 8 patients. These results were seen in those favorable group of patients who had low output fistula & moderate output fistula. Surgical intervention was performed after a median period of 6 weeks(range 30-45 days) from the occurrence of the fistula. Among surgical ECF, 2 cases (20%) had resection-anastomosis because of bowel defect >1cm and tract <2cm. Post surgical intervention one died due to anastomotic leak.

#### 4. DISCUSSION:

This study shows that adherence to a strict treatment guideline of SOWATS regime for patients with small bowel ECFs results in good results, with a relatively decreased morbidity & mortality of surgery.

Closure rates were better in patients < 60yrs group than in patients above 60yrs.

Fistula closure was accomplished in 8 patients with conservative management, giving an overall success rate of 80%. Spontaneous closure occurred in 8 patients(80%) and surgical closure was done in 2 patients (20%). The median time between fistula development and spontaneous closure was 15 days(10-30)

Definitive repair of the ECF should be planned if no spontaneous closure occurs by 12 weeks after sepsis control, nutritional optimization, and establishing wound care. Timeline to definitive repair is not firmly established. Fazio et al demonstrated that mortality doubles if an operation is attempted between 10 and 42 days after initial procedure resulting in ECF formation. 11 12

#### 5. CONCLUSION:

- Surgery accounts for majority of cause for ECF. SO PREVENTION IS BETTER THEN TO ATTEMPT CURE.
- Most of these fistulas heal spontaneously within 6 weeks. If closure is not accomplished after this time (fail conservative treatment) Surgery is indicated.
- Malnutrition is common and adequate nutritional provision is essential, for high-output fistulas.
- ECF remains a complex problem that is optimally management using a careful approach. The main lesson to be learned from this study is that adherence to a standardized guideline can result in good patient outcome.

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