

A CASE OF CONSERVATIVE MANAGEMENT OF AN ENTEROCUTANEOUS FISTULA DUE TO JEJUNAL DIVERTICULOSIS WITH PARTIAL SMV THROMBOSIS

General surgery

Dr. Anand M*	Second year Resident doctor, Department of General Surgery, B.J.M.C and Civil Hospital, Ahmedabad. *Corresponding Author
Dr. Rajnish R. Patel	Professor & Head of unit, Department of General Surgery, B.J.M.C and Civil Hospital, Ahmedabad.
Dr. Hitendra K. Desai	Assistant Professor, Department of General Surgery, B.J.M.C and Civil Hospital, Ahmedabad.
Dr. Rajesh K. Patel	Assistant Professor, Department of General Surgery, B.J.M.C and Civil Hospital, Ahmedabad.
Dr. Deep N. Patel	Second year Resident doctor, Department of General Surgery, B.J.M.C and Civil Hospital, Ahmedabad.
Dr. Haresh Memariya	Second year Resident doctor, Department of General Surgery, B.J.M.C and Civil Hospital, Ahmedabad.
Dr. T Srinivas	Second year Resident doctor, Department of General Surgery, B.J.M.C and Civil Hospital, Ahmedabad.
Dr. Suneel Patil	First year Resident doctor, Department of General Surgery, B.J.M.C and Civil Hospital, Ahmedabad.

KEYWORDS

INTRODUCTION

An enterocutaneous fistula (ECF) is an aberrant connection between intra-abdominal gastrointestinal tract and the skin. While great majority are iatrogenic, between 15-25% occur spontaneously. Common causes of spontaneous fistula are congenital, infections, inflammation, tumour, radiation and ischemia. Mortality associated with ECF has decreased from 40-60% to 15-20% largely attributed to advances in fluid, electrolyte, acid-base balance knowledge, administration of blood products, critical care, antibiotic regimen and nutritional management – both enteral and parenteral.

CASE STUDY

A 78 year old male patient presented to surgical OPD with complaints of abdominal pain, bloating, constipation, with one episode of low grade fever. On clinical examination, patient was vitally stable with no signs on abdominal examination. Patient was managed on OPD basis with conservative approach for colitis. On follow up after 4 days, patient had worsened. He had increasing abdominal pain, distention, redness on left side of abdomen and high grade fever with chills. Patient was febrile, with tachycardia, and noted to have developed an abdominal wall abscess with overlying pus point in left lumbar region with palpable bowel loop underneath. Patient was admitted and investigated. Patient was anaemic (Hb. 8.3), with septicemia (TC-19000) with pre renal AKI (S. Creatinine-3.4). USG was suggestive of subcutaneous edema with pockets of fluid collection with air within is noted in anterior abdominal wall over left lumbar region with NCCT showing communication with the underlying small bowel loop. Patient was conservatively managed with IV hydration, IV antibiotics, anti-inflammatory medication and Nil per oral status. The abscess ruptured spontaneously draining 5cc pus and air. Patient improved clinically with improvement in white cell count and renal profile. On day 3 of rupture, there was stool output noted from the site. CECT was done once Serum creatinine normalized which revealed #10*10*7mm sized peripherally enhancing extramural air collection adjacent to involved jejunal loops, # Partial thrombosis noted in one of the tributaries of Superior Mesenteric Vein with multiple small diverticuli arising from mesenteric border of jejunal loops in left lumbar region and # p/o perforation of jejunal loops with secondary abscess formation in abdominal wall. On day 5, patient was started on plain liquids orally with supportive parenteral nutrition. Stoma bag was applied at the site of fecal output. Patient was discharged on high protein diet with stoma bag in situ which had less than 50cc output on day 11. Patient was kept on regular follow up and had spontaneous closure of the enterocutaneous fistula on day 28.

CASE DISCUSSION

An enterocutaneous fistula (ECF) is an aberrant connection between intra-abdominal gastrointestinal tract and the skin. Causes attributed are mainly iatrogenic, spontaneous fistula do occur in 15-25% cases. Spontaneous causes enlisted include congenital, infections like tuberculosis and actinomycosis, inflammatory conditions like appendicitis, diverticulitis, hollow viscus perforation or intra abdominal abscess, post irradiation or neoplastic. They are classified as low, moderate or high based out fistula output, each of which vary in their management. An initial conservative approach is employed but surgical intervention is needed in cases with persistent high output and those not resolving with conservative approach.

ECF care commonly described with the acronym 'SNAP' which stands for management of Skin and Sepsis, Nutrition, definition of fistula Anatomy and proposing a Procedure to address the fistula.

Management principles –

1. STABILISATION: Resuscitation in terms of fluid, electrolyte, acid base balance and anemia correction. Ongoing nutritional assessment and support is necessary. Depending on the fistula anatomy, decision is taken to give enteral or parenteral nutrition. It is better to give portion (20%) of nutrition through enteral route to maintain mucosal barrier, enterohepatic circulation, immunological integrity. Low output fistula requires 30-35kcal/kg/day, protein 1-2gm/kg/day. High output fistula requires 1.5-2 times normal calorie intake, with protein intake of 1.5-2.5gm/kg/day.

Parenteral nutrition may be required in patients with Proximal small bowel, gastric or duodenal ECF, High output fistula, in the initial period of ECF, when patient is kept NPO or in patients with persistent paralytic ileus and not well established fistula tracts. Enteral nutrition is advocated in distal fistula, as an adjunct to parenteral nutrition, as feeding jejunostomy or in fistuloclysis. Fistula drainage and skin care is an important aspect of management of ECF. Protection using zinc oxide, aluminium paste, stoma adhesive paste, application of stoma bag or fistula manager reduces surrounding skin excoriation, pain and improves overall patient outcome. Stoma bag or fistula manager effluent can be used in fistuloclysis. Negative pressure therapy (VAC) works well to control drainage and protects skin. VAC apparatus minimises size of abdominal wound, simplifies management by decreasing frequency of dressing and promotes healing of fistula.

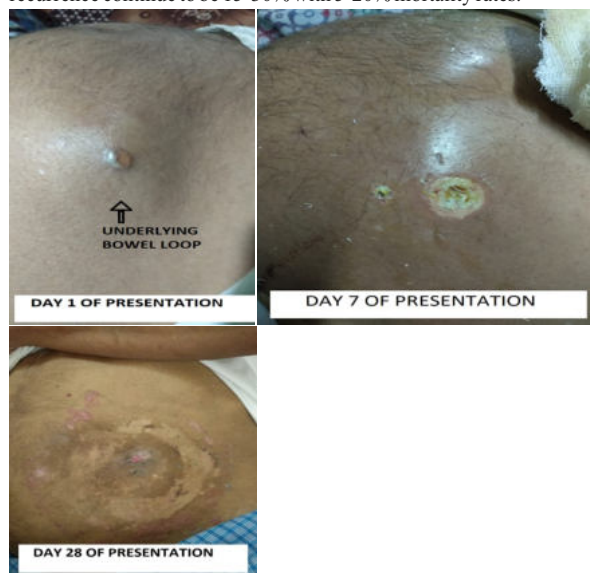
2. INVESTIGATION: to identify the etiology and anatomy of the

fistula. Fistulogram, Contrast Enhanced Computed Tomography (CECT) or Endoscopy are used to define the anatomy.

3. **DECISION** on when to intervene surgically if needed: Patients general condition and definition of fistula are main factors for spontaneous closure of ECF. Oropharyngeal, duodenal stump, lateral duodenal, pancreaticobiliary or jejunal ECF is more likely to close over a Gastric or ileal ECF. Distal obstruction, abscess, active inflammation or bowel discontinuity are factors preventing spontaneous closure. Patients developing an ECF after appendicitis or diverticulitis is expected to close spontaneously over an ECF developing secondary to Crohn's disease, malignancy, radiation or foreign body. Decreasing fistula output on conservative management is likely to close spontaneously but a steady or increasing output is an indication for intervention.

4. **DEFINITIVE THERAPY** which may require fistula repair with complex abdominal wall repair, adhesiolysis, resection of bowel with anastomosis or stoma formation or feeding jejunostomy. Large abdominal defects may require fascial relaxation, component separation technique, coverage with vascularised flap or use of prosthetic material.

Rehabilitation, emotional and psychological support to both the patient and caregiver plays a vital role as ECF takes a load on the patient's endurance and patience. Despite all the above, rates of recurrence continue to be 15-30% with 5-20% mortality rates.



REFERENCES

1. Shackelford's Surgery of the Alimentary Tract. Eighth edition
2. Bailey and Love: Short practice of surgery. 27th edition.
3. Dumas RP, Moore SA, Sims CA, Enterocutaneous fistula: Evidence based Management. *Cin Surg*. 2017; 2; 1435
4. Irena GR, Genevieve BM, Enterocutaneous fistula: Proven strategies and updates
5. Suk Hwan Lee, Korean J Radiol. 2012 Jan-Feb; 13(Suppl 1): S17-S20.
6. Manal B, Suzana S, and Ismail S, Malays J Med Sci. 2015 Jul-Aug; 22(4): 6-16. PMID: PMC4683844