Enterocutaneous fistula: a rare complication following total abdominal hysterectomy

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Abstract

Postoperative enterocutaneous fistula can occur after any gastrointestinal surgery. It is however uncommon following gynaecologic procedures. Although adjacent organ fistulae such as the rectovaginal and vesico-vaginal fistulae could be seen after hysterectomy, enterocutaneous fistulae are rarely encountered. We report a case of enterocutaneous fistula on twenty second post-operative day following total abdominal hysterectomy with bilateral salphingo-oopherectomy with partial omentectomy. The patient was managed conservatively which resulted in spontaneous closure of the fistula.

Keywords: Enterocutaneous fistula, post-operative, total abdominal hysterectomy.

INTRODUCTION

A fistula is defined as an abnormal connection between two epithelialised surfaces. An enterocutaneous fistula (ECF) is defined as an abnormal connection between the gastrointestinal (GI) tract and skin[1]. ECF is a potentially catastrophic postoperative complication. The most distressing situation to patients, their relatives and surgeons is development of enterocutaneous fistula and faecal fistula postoperatively[2]. Post-operative enterocutaneous fistula is more common than spontaneous variety. Spontaneously, it occurs in association with diverticulitis, inflammatory bowel disease, intraabdominal malignancy and appendicitis[3]. The postoperative causes of fistula include anastomosis leakage, inadvertent enterotomy, local sepsis, distal obstruction, presence of foreign body like mesh, dehiscence and complex wound problem[4]. Reported mortality rate in ECF ranges between zero and 33 percent[4].

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In gynaecological surgery, although adjacent organ fistulae such as rectovaginal and vesico-vaginal fistulae could be seen after hysterectomy, enterocutaneous fistulae are rarely encountered[3].

CASE REPORT

A 46-year-old female underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy (TAH with BSO) with partial omentectomy on 2013 January 16 for right ovarian cyst at Kathmandu Medical College Teaching Hospital. She had past history of cholecystectomy and right ovarian cystectomy done 17 years back. Surgery was performed on second day of admission after necessary preoperative evaluation which was unremarkable. Laparotomy was performed with a Pfannensteil incision. Intraoperatively, right ovary was found to be enlarged (8×5×4 cm) with presence of multiloculated cysts containing serous fluid. Marked omental adhesion was present which was cleared with adhesiolysis along with partial omentectomy. TAH with BSO was done and the abdomen was closed in layers. Her post-operative period was uneventful No discharge from the wound site was noted throughout the post-operative period. She was discharged after removing sutures on day seven. She was however readmitted on twenty second post-operative day with a provisional diagnosis of wound infection as she had purulent discharge from the wound site. The discharge

was noticed to be faeculent on the second day which on careful examination turned out to be a low output enterocutaneous fistula. Abdominal ultrasonography (USG) did not show any intraabdominal collection. She was managed conservatively with intravenous (IV) fluids and antibiotics (Ampicillin plus Cloxacillin). A colostomy bag was kept to collect the drainage from the fistula. Amount of discharge from the fistula was 100 ml on second day of admission which gradually reduced to 10 ml on fifth day and hence she was discharged after six days with colostomy bag in situ. Alternate day dressing was done during the follow up period. Colostomy bag was removed on day fourteen when the discharge was eventually nil Wound healed completely after one month of diagnosis.

DISCUSSION

The commonest etiological factor for formation of enterocutaneous fistula is abdominal surgery[6]. However, it is a rare complication after gynaecologic procedures. Predisposing factors for post-operative fistula are local, regional and general. Local factors are tension on bowel ends, bowel injury caused by cauterization or a passing suture, poor local vasculature (devitalisation) of margins, specific diseases at cut ends, local infection, etc. Regional factors are abscesses, distal bowel obstruction and acute necrotizing pancreatitis. General co-morbidities, which predispose to fistula formation are acute catabolic illness (like acute necrotizing pancreatitis), severe malnutrition (with serum albumin less than two gm%), marked diabetes mellitus, morbid obesity, prolonged steroid therapy etc[3,6]. Definite cause of fistula formation could not be identifiable in the present case. However, on retrospective analysis, possibility of unrecognized injury to the bowel (while passing suture) incurred during extensive adhesiolysis could have resulted in formation of ECF. Obesity (body mass index of 32 kg/m^2) could have become a contributory factor as well.

Based on the volume of the output in 24 hours, ECF is classified as low output (<200 ml), moderate output (200 to 500 ml) and high output (>500 ml)[6]. High output fistulae (greater than 500 ml per day) are more likely to originate from the small bowel. Low output fistulas (less than 200 ml per day) are more likely to be colonic in origin and are known to have a better prognosis[10]. The present case being a low output fistula indicates good prognosis.

The diagnosis of an ECF is usually made by visualizing the drainage of succus from the operative incision or from a drain site[1]. This usually occurs between postoperative days five and ten[7]. Alternatively, the fistula may arise with an overt wound infection. In that case, upon opening the surgical wound, enteric contents are found[1]. Besides clinical examination, various modalities are available for the diagnosis of ECF. A fistulogram performed with water-soluble contrast material is usually considered to be the gold standard. Ultrasonography can demonstrate involved bowel, abscess cavities, and areas of possible stenosis. Computed tomography (CT) scan can identify undrained abscess. Intraabdominal abscesses are associated with fistula in 44% of the time[5]. Presence of faeculent discharge and elaborate clinical examination was sufficient to make a diagnosis in our case.

Most of the fistulae close spontaneously with conservative management. The spontaneous closure rates depend on various factors and ranges from 17% to 75%[10]. Serum levels of short turnover proteins such as albumin, retinol binding protein and serum transferrin are predictors of spontaneous closure of fistula.

Stabilization of patient, skin protection, treatment of sepsis, and nutrition play important role in management of fistula. Attention should first be paid to restoration of intravascular volume because, in general, patients are in hypovolaemic state because of fluid loss from the fistula[1]. The introduction of total parenteral nutrition (TPN) by Dudrick et al in 1968 revolutionized the treatment of patients with ECF[8]. Nutritional supplementation should begin as soon as the patient's volume and electrolyte status is stabilized. The control of any septic focus should begin with proper antibiotics and drainage of the focus. High volume effluent or stasis on the skin can cause excoriation within three hours. To protect the skin, an ostomy appliance may be attached to the skin[1].

Drugs like somatostatin and octreotide have also been used. Somatostatin is a tetradecapeptide found throughout the body, which inhibits multiple gastrointestinal (GI) hormones, and in turn decreases GI secretions that ultimately decreases fistula output. Octreotide is a synthetic analogue of somatostatin that has a longer half-life and thus offers more convenient dosing[4].

Despite improvement in management with the use of parenteral nutrition, newer antibiotics, somatostatin analogue and better imaging techniques and surgical treatment, mortality is still around 10%[4]. Mortality is five times greater for high-output fistulae than low-output fistulae[9]. Immediate surgical correction of the fistula is not a treatment priority. The initial surgical treatment if indicated should be restricted to treatment of intra-abdominal abscess, haemorrhage and sepsis. Surgical closure is recommended for most fistulae that persist beyond 30 days[4].

CONCLUSION

Enterocutaneous fistula is a rare complication following gynaecologic surgery which could arise due to bowel injury. Operating surgeons should therefore be very vigilant while passing suture and handling bowel. Conservative approach followed by definite surgical intervention is the treatment modality of ECF.

REFERENCES

1. Galie KL, Whitlow CB. Postoperative enterocutaneous fistula: When to reoperate and how to succeed. Clin Colon Rectal Surg. 2006 Nov;19(4):237–46.
2. Shehri MY. Gastropleural associated with hepatic hydatid cyst. Report of a case and review of literature. Emirates Med J. 1994;12:154-6.
3. Boztosun A, Topuz Ö, Dündar B, Müderris IA. Rare complication after hysterectomy: A chronic colo-cutaneous fistula. Cumhuriyet Med J. 2011;33:478-82.
4. Rasheed A. Enterocutaneous fistula. Indep Rev. 2012 Apr-Jun;14(4-6):192-8.
5. Lee JK, Stein SL. Radiographic and endoscopic diagnosis and treatment of enterocutaneous fistulas. Clin Colon Rectal Surg. 2010;23:149–60.
6. Belekar D, Verma R. A fecal fistula - still a social stigma. Int J Surg. 2008;19(2).
7. Cameron J. Current Surgical Therapy. 7th ed. St. Louis, MO:Mosby;2001:156–61p.
8. Makhdoom ZA, Komar MJ, Stiell CD. Nutrition and enterocutaneous fistulas. J Clin Gastroenterol. 2000;31:195–204.
9. Campos AC, Andrade DF, Campos GM, Matias JE, Coelho JC. A multivariate model to determine prognostic factors in gastrointestinal fistulas. J Am Coll Surg. 1999;188:483–90.
10. Pritts TA, Fischer DR, Fischer JE. Management of postoperative enterocutaneous fistula. In: Holzheimer RG, Mannick JA, editors. Surgical Treatment: Evidence-based and problem-oriented. W. Zuckschwerdt Verlag Munchen; 2001.
11. Haffejee AA, Angorn IB, Baker LW. Nutritional support in high-output fistulas of the alimentary tract. S Afr Med J.1980;57:227-31.