THE MAGIC GLUE TO SURGEONS’ RESCUE- A CASE REPORT
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ABSTRACT

BACKGROUND

Enterocutaneous fistula is a dreaded complication of postoperative bowel surgeries. Most complex and challenging complication encountered in surgery,¹ the management of enterocutaneous fistula is varied and depends on the nature of fistula. Here, we discuss the management of a low output enterocutaneous fistula using a fibrin glue injection.

KEYWORDS

Enterocutaneous Fistulas, Fibrin Glue, Glue Sealing.

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BACKGROUND

Enterocutaneous fistulas are a dreaded complication of any postoperative bowel surgery. They have a high morbidity and have a mortality rate of 3-22%. The most common type is postoperative of which small bowel fistulas are the commonest 70-90%. The management of enterocutaneous fistula is varied and depends on the nature of fistula. Low output fistulas (<200 mL/day) can be managed conservatively. Here, we discuss the management of enterocutaneous fistula following resection and anastomosis for gangrene bowel using fibrin glue injection.

CASE REPORT

A 42-year-old male presented to the casualty with complaints of diffuse abdominal pain, abdominal distension and vomiting for the past 3 days. He also had history of constipation. However, he did not have any history of bleeding per rectum. He also did not have any history of loss of weight or appetite.

He had undergone CABG in 2010, but was on irregular medications (anticoagulants/antiplatelets). He did not have any other comorbidities. He is a known alcoholic and smoker for duration of 20 years.

On physical examination, he had a distended abdomen with diffuse tenderness around the umbilical and paraurinal region. His DRE was normal. Hence, a working diagnosis of acute intestinal obstruction. On further evaluation with a contrast-enhanced CT was suggestive of small bowel obstruction with likely transition point at the distal jejunal and proximal ileum. He underwent emergency laparotomy with a resection and anastomosis at jejunoileal junction.

He developed a burst abdomen on postop day 5 and then later by day 14 he developed a high output enterocutaneous fistula, which was managed conservatively, and by day 28, it was converted into a low output fistula with a daily discharge of 20-30 mL. The patient by this time was on normal diet and was recovering well. A repeat CT scan was done, which showed single tubular tract of 3 cm in length less than 3 mm in diameter communicating with the adjacent bowel loop.

Hence, the patient was planned for a fibrin glue injection under fluoroscopic guidance. Done under LA, an infant feeding tube was inserted into the fistula, contrast injected and under fluoroscope, the size and length (>2 cm) of the tract was identified and measured with the infant feeding tube. Communication with the bowel was made out. To allow the adhesion of the fibrin glue patch, fistulous tract was curetted. Fibrin glue injection was done and allowed to set for 60 seconds. No intra or immediate post procedure complications and the patient was restarted on normal diet.

Figure 1. Intraop Showing Gangrene
DISCUSSION

The causes for enterocutaneous fistulas are varied, postoperative enterocutaneous fistulas are the most common (75%-85%). The morbidity and mortality are around 3-22%. They also have associated nutritional deficits, septic complications and concomitant diseases that can appear during prolonged hospitalisation. The fistulas that do not close with conservative medical treatment require surgery.2,3 Spontaneous fistula closure rates vary from 15% to 71%.2 However, this also can result in long-term discomfort.4 Surgery in a hostile abdomen is difficult and success rates are low.5

Fibrin sealant: Two-component sealant made from pooled human plasma. It has a sealer protein and thrombin mimic. The final stage of the blood coagulation cascade6-8 widely applied clinically as a biological adhesive system for tissue adhesion or haemostasis. It has advantages such as biocompatibility, biodegradation and haemostasis. Efficacy of fibrin varies depending on a number of features such as output volume of the fistula, the location of the fistula and a fistulous tract long enough (greater than 2 cm) to allow fixation of the patch.9 The fibrin patch is replaced by collagen by 2-4 weeks leading to cessation of drainage and promotion of closure of the fistula9-10 with avoidance of inflammatory processes finally results in improved healing.11

Application of fibrin glue in those patients can be offered to those who do not experience spontaneous closure, to reduce the time needed to complete the resolution of the fistula and to minimise the rate of complications related to the secretions of the fistulas. Radiological visualisation of the fistulous tract requires less technical support, drastically reduces the duration of hospital stay, morbidities related to drainage from fistula and surgery is finally avoided can be recommended for low output, longer tract enterocutaneous fistula.

CONCLUSION

Our patient was on anticoagulation, had repeated major surgeries. It avoided surgery and complication of anaesthesia. The procedure can be done as an OPD procedure. He did not have any discomfort. Here, we discuss the application of fibrin glue injection in accelerating the closure of a low output fistula. Fibrin glue is a good option in low output enterocutaneous fistulas provided the fistula tract is longer than 2 cm. If a communication to the bowel is made out, an endoscopic-guided fibrin glue injection can be done. Follow up shows good results and no associated morbidities of the procedure. Studies are underway to study different types of glue sealant on enterocutaneous fistulas and their effects.12

REFERENCES


