

Case Report

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Spontaneous closure of transverse loop colostomy: A case report

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Abstract

Colostomy is an artificial colo-cutaneous fistula which can be temporary or permanent, depending on the purpose for which it was created. The indications for colostomy include protection of a distal intestinal anastomosis, control of sepsis in open injury to the colon or rectum, to facilitate the operative treatment of a high anal fistula and to relieve a benign or malignant acute large bowel obstruction. There is no consensus on when to close a colostomy but it is done when the purpose for which it was created has been achieved. Although retraction of stoma is a known complication of colostomy, its spontaneous closure afterwards is a rare occurrence. Here, we present the case of a 22-year old man who sustained gunshot injury to the transverse colon. He had exploratory laparotomy, wedge resection and anastomosis of the mid-transverse colon and a temporary protective transverse loop colostomy. The colostomy closed spontaneously. The retraction of a stoma can lead to its spontaneous closure and the long term complications like incisional hernia and adhesive intestinal obstruction should be looked for during follow-up appointments.

Keywords: Colostomy; Closure; Loop; Spontaneous; Close follow-up.

Introduction

A colostomy or colonic stoma is an artificial surgical opening made in the colon to divert flatus and faeces to the anterior abdominal wall where they can be collected in an external appliance [1,2]. Depending on the disease and the purpose for which the diversion has been made, a colostomy may be temporary or permanent [1,3]. Although retraction is a known complication of colostomy, its spontaneous closure without surgical intervention is a rare occurrence [2]. We present a case of spontaneous closure of transverse loop colostomy.

Case presentation

A 22-year old man who was shot by an unknown assailant in the right flank while harvesting honey at night, presented to our Accident and Emergency unit with complaints of dull right sided abdominal pains and distension and generalised weakness, 7 hours after sustaining the gunshot injury. His pre-morbid condition was not contributory. On examination, he was conscious, in painful distress and pale. He had tachycardia with a pulse rate of 110 beats/min and a blood pressure of 100/60 mmHg. The abdomen was distended and moved with respiration. There

was a 3 cm entry wound in the right flank but no exit wound. There was generalised abdominal tenderness with guarding and bowel sounds were hypoactive. A diagnosis of generalised peritonitis secondary to penetrating gunshot injury to the abdomen was made. Computerized Tomogram (CT) of the abdomen showed features of hemoperitoneum and bowel injury. He was resuscitated and during an emergency exploratory laparotomy at 10 hours from time of injury, we found 2 litres of hemoperitoneum, a 2 cm x 4 cm ragged injury of the mid-transverse colon (at its anti-mesenteric border) with intact mesocolon. There was moderate degree of faecal peritoneal contamination. He had wedge resection of the devitalised transverse colon and an end-to-end anastomosis was done in 2 layers with absorbable interrupted sutures and a temporary proximal transverse loop colostomy was fashioned. He had 3 units of whole blood transfused intra-operatively and the immediate postoperative recovery was uneventful. The stoma became active on the 2nd postoperative day.

However, on the 4th postoperative day, he developed deep Surgical Site Infection (SSI) which was managed conservatively with drainage and local daily dressings with EUSOL. There was retraction of the stoma on the 5th postoperative day even though it was active. The abdominal wound healed with poor scarring and patient was discharged home on the 14th postoperative day after educating him on stoma care. A day before his 6-week postoperative appointment, he reported that the stoma had completely closed and there was no discharge from the site. There was no abdominal pain or distension and patient passed stool per rectum without difficulty. Further examination showed a completely healed and epithelised stoma site and an ugly midline abdominal scar (Figure 1). The patient has been followed-up at the outpatient clinic for 6 months and he has no complaint.



Figure 1: Shows healed colostomy site.

Discussion

Colostomy is a colo-cutaneous fistula which can be temporary or permanent, depending on the purpose for which it was created [4]. Some of the indications for creating a colostomy include protection of a distal intestinal anastomosis (defunctioning or diverting colostomy), control of sepsis in open injury to the colon or rectum, to facilitate the operative treatment of a high anal fistula, recto-vaginal fistula, recto-vesical fistula, anal incontinence, to relieve a benign or malignant acute large bowel obstruction and to dysfunction an obstructing low rectal cancer prior to long course of chemo-radiation [1].

The temporary proximal transverse loop colostomy done for our patient was in order to protect the anastomosis which was done without bowel preparation and also because it was an emergency. The entry point of the bullet was in the posterior right flank and mobilizing the proximal transverse colon was technically difficult because of its short length from the hepatic flexure. In order to reduce tension on the anastomosis, provide sufficient length to properly situate the stoma and the long steep subcostal angle of the patient, the hepatic flexure of the colon had to be taken down. The stoma was then situated in the right lumbar region instead of around the right hypochondrium in order to take it away from the midline incision.

Other complications of colostomy include bleeding, prolapse, faecal impaction, colostomy diarrhoea, skin excoriation, ischemia, stenosis, parastomal hernia, fistulation and mental depression [1,4]. Our patient had partial retraction of the stoma from the 5th postoperative day and since he was passing flatus and faeces per rectum, we decided to watch and monitor the progress. When the patient was discharged home on the 14th postoperative day, the partially retracted stoma was still active and could still properly fit into the collecting colostomy bag.

Retraction of colostomy occurs when there is excessive tension on the mesenteric border of the bowel as a result of poor mobilisation of the proximal limb or oedema of the bowel and mesentery due to peritoneal inflammation [2,3]. This may lead to intra-peritoneal leakage and abscess formation requiring re-exploration and drainage [5,6]. Retraction also occurs as a result of complications like ischemia and necrosis of the mucocutaneous edge or poor approximation of the mucosa to the skin leading to its separation from the skin or lack of maturation due to poor nutrition of the patient. Late retraction is attributed to increased thickness of the anterior abdominal wall following weight gain [7,8]. Colostomy retraction may be treated by re-attaching the stoma to the skin of the anterior abdominal or recreation via a laparotomy with passage of stoma rod through the mesentery. If it's a temporary colostomy, reversal may be done earlier [9].

There is no consensus on when to close a colostomy but this should be done when the purpose for which it was created has been achieved. It is usual to perform a contrast examination (distal colostogram) to check that there is no distal obstruction or continuing problems such as leakage or stenosis at the site of anastomosis before closure of colostomy [1]. Colostomy closure is most easily and safely accomplished if the stoma is mature, typically after it has been established and effective for at least 2 months [1]. We had planned to re-admit our patient for proper preoperative bowel preparation and closure of the stoma after

2 months of its maturity but fortunately the stoma continued to retract and the effluents also progressively reduced in rate and quantity until it closed spontaneously at 6 weeks without surgical intervention or complications (Figure 1). Spontaneous closure of colostomy following retraction has also been reported to occur between 6 and 8 weeks, similar to what happened with our patient [2,8].

Our patient was a young healthy man, in good pre-morbid condition who gained 4 kg weight in 6 weeks and this may have contributed to the retraction of his stoma. He was passing normal stool regularly per rectum without discomfort which suggests that there was no distal obstruction or evidence of an anastomotic leakage until the stoma gradually and completely closed. So, we did not have the need for a distal colostogram as suggested by some authors [1].

The incidence of incisional hernia after surgical closure of colostomy is as high as 30% and the risk is even higher with spontaneous closure since the defect in the muscle persists [10]. Moreover, daily activities, straining and weight gain can widen the muscular defect thus leading to incisional hernia. Therefore, the risk of developing an incisional hernia and adhesive intestinal obstruction in the future is high in our patient since the deep fascia and the abdominal wall through which the stoma was exteriorised were not closed during its spontaneous closure. These are reasons for a long term follow-up.

Conclusion

Spontaneous closure of loop colostomy is rare and its mechanisms are poorly understood. This case highlights a sustained, slowly retracted stoma and its eventual closure without surgical intervention. In the absence of factors such as a distal obstruction and the presence of a foreign body mitigating the spontaneous closure of a fistula, there was the need to allow retraction of the loop to progress but to meticulously watch out for signs of intra-abdominal sepsis which would have required surgical intervention. This conservative approach has saved the patient from another surgery and its attendant complications, for closure of stoma. In such a patient, the potential for incisional hernia and adhesive intestinal obstruction should be borne in mind and so, should be scheduled for close follow-up appointments.

Declarations

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Consent: Written consent was obtained from the patient to publish the clinical image and this case report

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