

Pseudoaneurysm of inferior epigastric artery complicating ileostomy construction

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ABSTRACT

Pseudoaneurysm of the inferior epigastric artery complicating ileostomy construction is described in a 25-year-old woman. She underwent total abdominal perineal proctocolectomy with a permanent ileostomy constructed through the right rectus muscle. 15 days later, she abruptly developed significant bleeding through the ileostomy that recurred two more times. Endoscopy performed through the ileostomy stoma revealed a small ulcer 8 cm from the stomal opening. The distal segment of ileum containing the bleeding site was resected, and on-table examination of the lesion revealed an underlying tear in the inferior epigastric artery wall. The patient recovered after the operation.

Keywords: ileostomy complication, inferior epigastric artery pseudoaneurysm, surgical complication

Singapore Med J 2006; 47(10):910-912

INTRODUCTION

Pseudoaneurysm of inferior epigastric artery may result from a tear in the vessel wall and may be iatrogenic. The few reported cases are the result of trauma caused by surgery⁽¹⁻⁵⁾, abdominal paracentesis⁽⁶⁻⁸⁾ and continuous ambulatory peritoneal dialysis (CAPD) catheter placement^(9,10). We report a patient with pseudoaneurysm of the inferior epigastric artery who presented with massive gastrointestinal bleeding through an ileostomy.

CASE REPORT

A 25-year-old woman underwent total abdominal perineal proctocolectomy with a permanent ileostomy 18 days before admission. She had a longstanding history of ulcerative colitis (more than ten years) that had become refractory to medication during the previous few months. At the time of operation,

she was severely emaciated (weight 31 kg, height 157 cm), and was steroid dependent. She had presented with a severe attack of pancolitis presenting with massive bloody diarrhoea unresponsive to treatment. Chronic involvement of perineal area by disease made the patient unsuitable for an ileal pouch-anal anastomosis procedure. Therefore, a permanent ileostomy with a 5-cm everted stoma was constructed through the right rectus abdominis muscle below the level of umbilicus. No reservoir was made. After an uneventful postoperative course, the patient was discharged five days after the operation.

On the 15th postoperative day, she abruptly developed significant bleeding through the ileostomy. Blood was fresh and bright red. After about a "medium bowl" volume of bleeding, as described by the patient, it gradually decreased and stopped. She sought local medical aid, but a second bleeding episode occurred within 48 hours, leading to a pre-shock state. On the 18th postoperative day, she was readmitted, and endoscopy performed through the ileostomy stoma revealed a small ulcer 8 cm from the stomal opening. It was covered with a fresh gelatinous clot that moved with the patient's arterial pulsation. Otherwise, the bowel appeared normal up to about 100 cm retrograde. The endoscopist was reluctant to coagulate the lesion and suggested surgical intervention.

While the choice of complementary technique was being decided upon, the patient bled again. She was taken to the operating theatre right away. Since the location of the lesion corresponded to the site where ileum passed through rectus muscle, the origin of bleeding was strongly considered to be from the inferior epigastric artery. The stoma was taken down, and a bleeding site was readily visualised at inferior and medial aspect of the opening in rectus muscle. Careful examination revealed a tear in the wall of the inferior epigastric artery. The vessel was ligated above and below the injured site. The distal segment of ileum containing bleeding site was resected and a new stoma was constructed.

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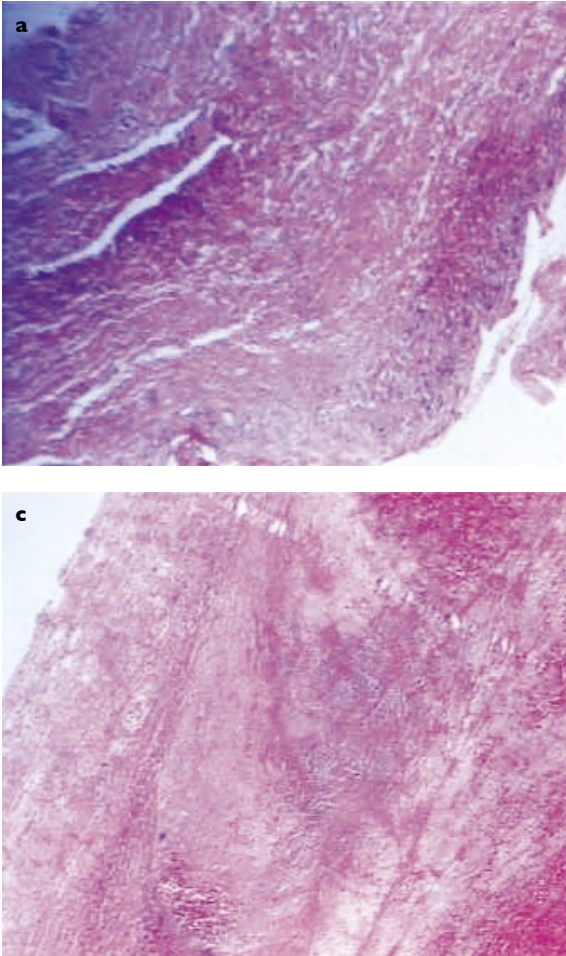


Fig. 1 Photomicrographs of the aneurysmal wall show an organised thrombus fistulising into the small bowel (Haematoxylin & eosin, (a, b) $\times 200$, (c) $\times 100$).

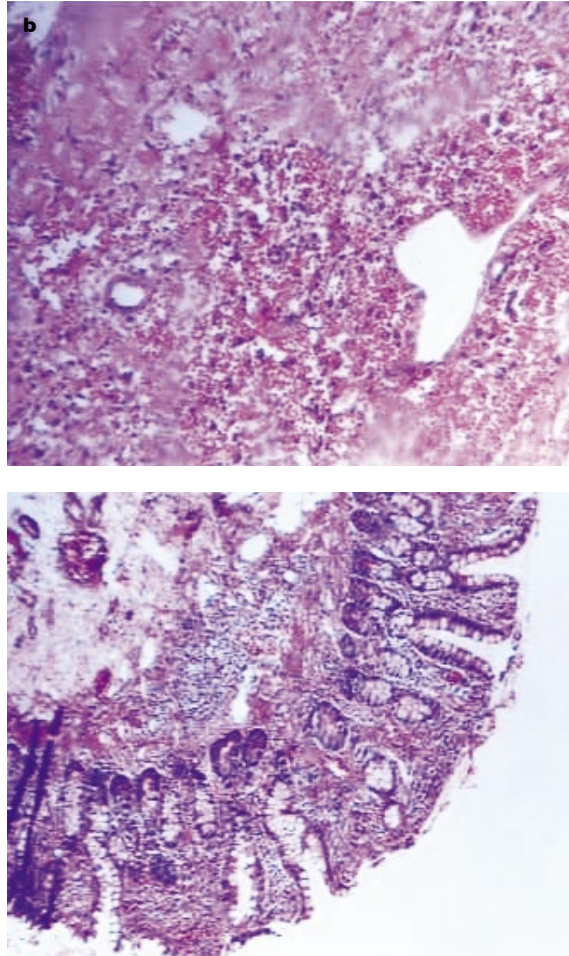


Fig. 2 Photomicrograph of the small bowel wall shows serositis and vascular congestion at the site of the fistula tract (Haematoxylin & eosin, $\times 100$).

Pathological examination showed a small cavity, measuring 2-3 mm in diameter, within the gut wall eroding the overlying mucosa. The cavity contained only blood clots (Figs. 1-2). Postoperative course was uneventful, with no recurrence of bleeding. The patient was discharged four days postoperation. At regular follow-up visits up to six months later, no further bleeding was reported.

DISCUSSION

To our knowledge, less than ten cases of inferior epigastric artery pseudoaneurysm have been previously reported. Trivial trauma to the artery may result in a fatal outcome⁽⁶⁾. We believe that in our case, the bleeding was definitely due to iatrogenic trauma to the artery during construction of ileostomy. Since the patient had a previous experience of bleeding from the intestinal tract, the first bleeding episode was taken as recurrence or residual disease. However, it was out of proportion to her previous attacks caused by inflammatory bowel disease (IBD). Repeated

attacks led to a critical situation. Presumably, the bleeding led to a significant decrease in circulating volume and drop in blood pressure, such that the homeostatic mechanism could stop bleeding.

Unfortunately, early rebleeding after admission, presumably as the result of rapid volume correction and rise in blood pressure, left no time for imaging studies. Since she was in a critical condition, we could not have avoided re-operation. Coil embolisation^(4,8) of the bleeding arterial branch would have been the preferred approach. In the case of pseudoaneurysm, ultrasonographically-guided compression⁽¹¹⁾ would have been the first choice of management. Percutaneous thrombin injection⁽¹²⁾ may also be considered as the second choice of treatment, as it is less successful than embolisation, but is also less invasive. Finally, some cases of spontaneous thrombosis of traumatic pseudoaneurysms have been reported^(13,14). But in our case, re-bleeding left no place for less invasive forms of management and surgery was required. Absence of other pathological

conditions in the ileum and distal jejunum (e.g. backwash ileitis, presence of IBD, Meckel diverticulum), together with the appearance of the lesion and its anatomical site, suggested the inferior epigastric artery as the origin of bleeding.

In conclusion, the inferior epigastric artery passes behind the rectus muscle with a little anatomical variation. As a result of its position, it may be easily traumatised during any procedure involving the muscle. We would like to highlight the risk of injuring the inferior epigastric artery during stoma construction. Surgeons should take the possibility into consideration and avoid this complication with meticulous surgical technique.

REFERENCES

1. Ello FV, Nunn DB. False aneurysm of the inferior epigastric artery as a complication of abdominal retention sutures. *Surgery* 1973; 74:460-1.
2. Segev Y, Orron D, Alon R, Graif M. Pseudoaneurysm of the inferior epigastric artery mimicking abdominal wall hematoma. *J Ultrasound Med* 1994; 13:483-4.
3. Verbist J, Stillaert F, Dujardin P, Dewaele G. Pseudoaneurysm of the inferior epigastric artery. *Acta Chir Belg* 1997; 97:196-8.
4. Gage TS, Sussman SK, Conard FU 3rd, Hull D, Bartus SA. Pseudoaneurysm of the inferior epigastric artery: diagnosis and percutaneous treatment. *AJR Am J Roentgenol* 1990; 155:529-30.
5. Ferrer JV, Soriano P, Zazpe C, et al. Pseudoaneurysm of the inferior epigastric artery. Pathogenesis, diagnosis and treatment. *Arch Surg* 1996; 131:102-3.
6. Todd AW. Inadvertent puncture of the inferior epigastric artery during needle biopsy with fatal outcome. *Clin Radiol* 2001; 56:989-90.
7. Murthy SV, Hussain ST, Gupta S, Thulkar S, Seenu V. Pseudoaneurysm of inferior epigastric artery following abdominal paracentesis. *Indian J Gastroenterol* 2002; 21:197-8.
8. Lam EY, McLafferty RB, Taylor LM Jr, et al. Inferior epigastric artery pseudoaneurysm: a complication of paracentesis. *J Vasc Surg* 1998; 28:566-9.
9. Messana JM, Block GA, Swartz RD. Injury to the inferior epigastric artery complicating percutaneous peritoneal dialysis catheter insertion. *Perit Dial Int* 2001; 21:313-5.
10. Werner M, Bernheim J, Witz M, et al. Pseudoaneurysm of the inferior epigastric artery — a rare complication of Tenckhoff catheter removal. *Nephrol Dial Transplant* 1999; 14:1297-9.
11. Takase K, Kazama T, Abe K, et al. Pseudoaneurysm of the inferior epigastric artery successfully treated by ultrasound-guided compression. *Cardiovasc Intervent Radiol* 2004; 27:520-2.
12. Shabani AG, Baxter GM. Inferior epigastric artery pseudoaneurysm: ultrasound diagnosis and treatment with percutaneous thrombin. *Br J Radiol* 2002; 75:689-91.
13. Soudack M, Epelman M, Gaitini D. Spontaneous thrombosis of hepatic posttraumatic pseudoaneurysms: sonographic and computed tomographic features. *J Ultrasound Med* 2003; 22:99-103.
14. Cronan JJ. Post-catheterization pseudoaneurysms: an evaluation of ultrasound diagnosis and treatment. Literature review and personal experience. *J Intervent Radiol* 1996; 11:85-8.

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