Rectal perforation secondary to transanal haemorrhoidal dearterialisation

S Greensmith, B Ip, Z Vujovic

Ninewells Hospital and University of Dundee Medical School, Dundee, UK

ABSTRACT

Haemorrhoidal artery ligation has now been established as a treatment modality for symptomatic haemorrhoids. We report a case of a fit 44-year-old male who underwent the procedure as a day case, who subsequently developed pelvic sepsis due to rectal perforation. This case is the first report of a potentially life-threatening complication resulting from this procedure, which has a previously excellent safety profile.

KEYWORDS

Transanal haemorrhoidal artery dearterialisation – Haemorrhoids – Complications

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CORRESPONDENCE TO

Brian Ip, E: brianip@nhs.net

Introduction

The concept of haemorrhoidal artery ligation using Doppler ultrasound was first described by Morinaga *et al.* in 1995.¹ Its apparent high efficacy and excellent safety profile in early studies has led to widespread adoption in colorectal surgery.

Case history

A 44-year-old male was admitted for elective outpatient transanal haemorrhoidal dearterialisation (THD), a form of haemorrhoidal artery ligation (HAL), and mucopexy for symptomatic grade 3 haemorrhoids. He had no significant past medical history. The procedure was intended to be performed as a day case. During the operation, seven plication sutures were inserted corresponding to respective Doppler signals. Mucopexy with a running suture was performed, in accordance with the manufacturer's recommendation. There were no immediate intraoperative complications. In the recovery room, the patient reported a significant amount of pain. He required diamorphine, ketorolac, ketamine and spinal anaesthesia in recovery to control his pain and was subsequently admitted to the colorectal ward overnight for observation and management of his pain. At this point, the patient continued to struggle with pain. Patient-controlled analgesia with morphine was not effective, with a total of 76mg consumed in 28 hours. Subsequently, he was commenced on a ketamine infusion, receiving a total of 25mg of ketamine in 16 hours, and he was subsequently stepped up to diamorphine patient-controlled analgesia, receiving 53mg in 32 hours.

Two days postoperatively, the patient became septic, having spiked a temperature of 39.0°C at 8am, with a white cell count of 16.2. He required resuscitation with fluids and broad-spectrum antibiotic cover with amoxicillin, metronidazole and gentamicin. The decision was made by the patient's consultant colorectal surgeon to perform a repeat examination under general anaesthesia. The logic at the time was that some of the mucopexy sutures were too tight, leading to local mucosal ischaemia.

Examination under anaesthesia did not reveal any evidence of mucosal ischaemia. One plication suture was removed. Postoperatively, the patient reported less pain but he remained septic. On postoperative day 3, the patient was investigated with magnetic resonance imaging of his pelvis. This showed thickening and oedema of the rectosigmoid and anal canal, with signal change and ill-defined outline in the lower rectum at the nine o'clock position, with the impression of extraluminal gas locules, suspicious of localised perforation (Fig 1).

Given the absence of peritonitis, the decision was made to continue conservative treatment with intravenous antibiotics. A light diet was continued. From postoperative day 4, the patient showed improvement with intravenous antibiotics. At this point, his pain was under control with oral analgesia. After five days of intravenous antibiotics, he was changed to oral administration. He was successfully discharged on postoperative day 7 with oral analgesia, antibiotics and topical rectal diltiazem 2% ointment for six weeks. He is awaiting outpatient review but currently has no ongoing issues.

Figure 1 Coronal view showing free air in the para-rectal space above the levator plate.

Discussion

Prior to the introduction of HAL, established forms of surgical treatment for symptomatic grade III or IV haemorrhoids include surgical excision (haemorrhoidectomy) or stapled haemorrhoidopexy. The key advantage of HAL over other forms of treatment is the perception of reduced postoperative discomfort and bleeding. The addition of mucopexy in selected patients allows the prolapsing component to be treated at the same time. The original case series of 112 patients reported 96% resolution of pain and 95% resolution of bleeding.¹ A meta-analysis of four randomised control trials comparing THD with open haemorrhoidectomy showed a quicker return to normal activities in the THD group, with no difference in recurrence or reoperation rates.² There was no difference in postoperative bleeding, incontinence or urinary retention. Comparing THD with stapled haemorrhoidopexy in the treatment of third-degree haemorrhoids, median postoperative pain was significantly lower in the THD group, with equivalent morbidity and return to normal activities.³ In the treatment of smaller (grade II–III) haemorrhoids, the HubBle trial showed that HAL has a lower recurrence rate at 12 months (30%) compared with rubber-band ligation (49%).⁴ In this trial, pain at day 7 was higher in the HAL group but reached the same level as rubber-band ligation by day 21. Adverse events occurred in 7% within the HAL

group, including bleeding, urinary retention, sepsis, pain and vasovagal upset.

Digital and instrumental manipulation of the rectum is associated with between 0% and 9.5% of bacteraemia.⁵ *Escherichia coli* and *Bacteroides* are the predominant organisms following haemorrhoidectomy. Transient bacteraemia translating to life-threatening sepsis following surgical treatment of haemorrhoids is uncommon. The routine use of prophylactic antibiotics has yet to be proven, although special consideration should be given to immunocompromised patients. Stapled haemorrhoidopexy carries a higher risk, with case reports of large bowel obstruction, retroperitoneal sepsis, rectovaginal fistulae and rectal perforation. Proven retroperitoneal sepsis secondary to rectal perforation has yet to be reported in HAL.

This case has highlighted a serious complication of HAL performed by a colorectal surgeon trained to carry out this procedure. Pain out of proportion to what should be a local minimally invasive procedure with the combination of sepsis has alerted us to this potentially life-threatening diagnosis. This case alone will not affect the widespread use of HAL, nor existing antibiotic policies relating to this procedure. It should, however, alert clinicians that, as with all surgical treatment, it is not immune to serious complications.

References

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