# Explosive proctitis: potential treatments and pitfalls in the treatment of chronic radiation proctitis

## Introduction

Chronic radiation proctitis is a frequent and debilitating side effect of abdominopelvic radiotherapy. There is a paucity of good quality data systematically examining the therapeutic options in chronic radiation proctitis. This article highlights the novel use of an old drug, as well as an endoscopic pitfall in the management of chronic radiation proctitis.

## Discussion

Thalidomide potently inhibits vascular endothelial growth factor and neoangiogenesis, the central pathophysiological feature of chronic radiation proctitis. Others have used thalidomide with some success in chronic radiation proctitis (Craanen et al, 2006).

Argon plasma coagulation is an endoscopic thermocoagulation technique that has been widely used in the treatment of chronic radiation proctitis on account of its availability and safety profile because of its limited tissue penetration depth (Leiper and Morris, 2007).

Combustible gases within the colon may interact with oxygen and a heat source (e.g. argon plasma coagulation) thereby triggering an intracolonic gas explosion (*Figure 1*). The most commonly reported features at laparotomy after an intracolonic gas explosion are multiple perforations or laceration sites in the absence of abdominal contamination (Pichon et al, 2004; Josemanders et al, 2006; Townshend et al, 2007). Meticulous bowel cleansing may inhibit the formation of combustible gases within the colon therefore reducing the risk of intracolonic gas explosion (Ben Soussan et al, 2003).

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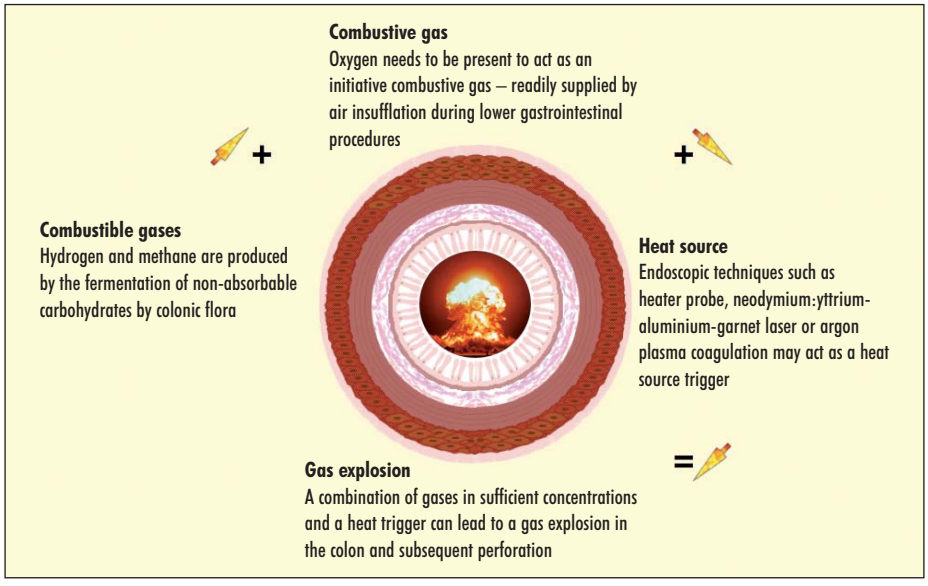
***Figure 1. Factors which have been implicated in intracolonic gas explosion.***




## Case Report

A 73-year-old man presented to the authors' clinic with profuse rectal bleeding, defaecatory urgency and symptomatic anaemia. He had been treated for prostatic adenocarcinoma 12 months previously, with neoadjuvant hormones and radiotherapy (total dose of 60 Gy). Chronic radiation proctitis was confirmed endoscopically and histologically in the absence of any other left-sided colonic pathology.

His initial medical management with sucralfate enemas and oral metronidazole failed. However, he withheld consent for further topical or endoscopic treatment despite continued symptomatic deterioration and transfusion dependency, presenting a therapeutic impasse.

Oral thalidomide (75 mg/day) was started and he made an excellent symptomatic response and became transfusion independent. However, 23 days after starting thalidomide peripheral neuropathy ensued, a well documented side effect (Mileshkin and Prince, 2006), which resolved rapidly following its discontinuation.

His symptoms and anaemia rapidly re-emerged and at this point he consented to endoscopic therapy with argon plasma coagulation. An unprepared flexible sigmoidoscopy, to the rectosigmoid junction, demonstrated features of chronic radiation proctitis and argon plasma coagulation was applied exclusively to the rectum. However, the patient developed sudden onset abdominal pain necessitating abandonment of the procedure. A chest radiograph showed free air under the right hemidiaphragm. An emergency laparotomy revealed multiple perforations and lacerations in the proximal descending colon without abdominal contamination. A Hartmann's procedure was performed. A direct perforation as a sequelae of the procedure is unlikely as multiple perforations and lacerations were evident proximal to the upper limit of the examination. Furthermore, no perforation was observed in the rectum or sigmoid where the argon plasma coagulation was applied. As bowel preparation was not administered before the flexible sigmoidoscopy and given the aforementioned findings at laparotomy, the likely cause of the perforation was an intracolonic gas explosion, a rare iatrogenic complication of using thermocoagulative endoscopic techniques within the colon.

The patient died 16 days postoperatively of multiorgan failure.

## Conclusions

Therapeutic strategies in chronic radiation proctitis are generally invasive with a limited evidence base but thalidomide is a new option for treatment. To negate the risk of intracolonic gas explosion, the authors advocate that complete bowel cleansing be undertaken, with oral electrolyte solutions, before contemplating the intracolonic use of thermocoagulative techniques. BJHM

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Ben Soussan E, Mathieu N, Roque I et al (2003) Bowel explosion with colonic perforation during argon plasma coagulation for hemorrhagic radiation-induced proctitis. *Gastrointest Endosc* **57:** 412–13

Craanen ME, van Triest B, Verheijen RH et al (2006) Thalidomide in refractory haemorrhagic radiation induced proctitis. *Gut* **55:** 1371–2

Josemanders DF, Spillenaar Bilgen EJ, van Sorge AA et al (2006) Colonic explosion during endoscopic polypectomy: avoidable complication or bad luck? *Endoscopy* **38:** 943–4

Leiper K, Morris AI (2007) Treatment of radiation proctitis. *Clin Oncol (R Coll Radiol)* **19:** 724–9

Mileshkin L, Prince HM (2006) The troublesome toxicity of peripheral neuropathy with thalidomide. *Leuk Lymphoma* **47:** 2276–9

Pichon N, Maisonnette F, Cessot F et al (2004) Colonic perforations after gas explosion induced by argon plasma coagulation. *Endoscopy* **36:** 573

Townshend AP, Goddard WP, Cid JA (2007) Bowel perforation requiring emergency laparotomy and a Hartmann's procedure after a gas explosion induced by argon plasma coagulation. *Endoscopy* **39** (Suppl 1): E1 [Epub Feb 7 2007]



# Endobronchial carcinoid: an unusual cause of wheezing and chest pain

A 30-year-old woman presented to the accident and emergency department with left-sided chest pain which she had had for the past few days. She also complained of wheezing for the past 3 months for which she had seen her GP who had provisionally diagnosed asthma. Also, she had recently travelled by air for about 12 hours. On clinical examination, there was reduced air entry on the left side.

A chest X-ray (*Figure 1*) was performed which showed reduced volume and vascularity in the left lung. Subsequently, a ventilation–perfusion lung scan was performed (*Figure 2*). This showed near total absence of ventilation and perfusion in the left lung on initial views and some gas trapping and minimal perfusion on delayed views.

A contrast-enhanced computed tomography scan (*Figure 3*) showed an intensely enhancing endobronchial mass in the left main bronchus and suggested the diagnosis of endobronchial carcinoid. This diagnosis was confirmed by bronchoscopy (no biopsy) (*Figure 4*) and surgical resection. BJHM

***Figure 1. Chest X-ray shows some volume loss in the left lung. Also, there is reduced vascularity on the left lung compared to right.***

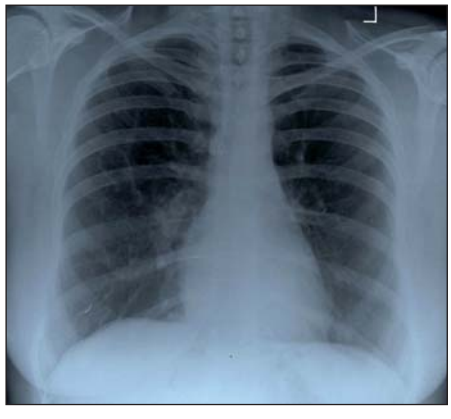


***Figure 2. Krypton ventilation scan with anterior and posterior views show global reduction in both ventilation and perfusion. This marked reduction in perfusion arises from bronchial obstruction resulting in hypoxic pulmonary vasoconstriction.***

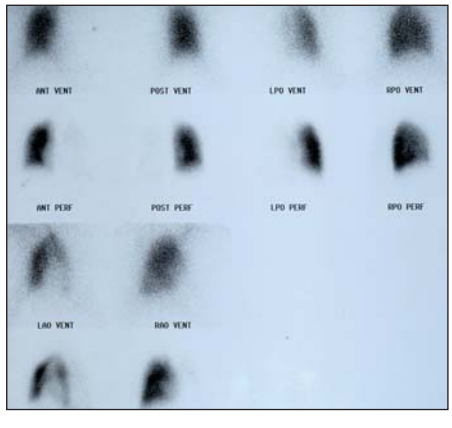



***Figure 3. Contrast-enhanced computed tomography scan shows intensely enhancing mass in the left main bronchus. Note the decreased attenuation and vascularity in the left lung compared to the right.***

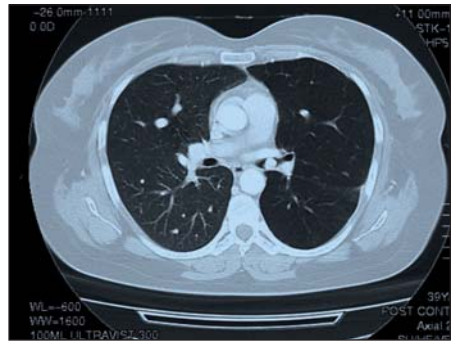
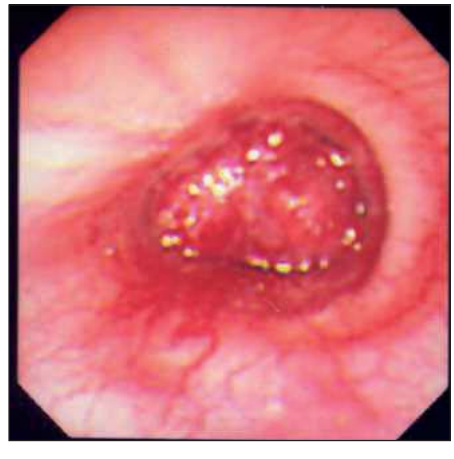


***Figure 4. Bronchoscopy shows the vascular nature of the mass.***



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