Glutaraldehyde colitis: a rare cause of bleeding per rectum

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ABSTRACT

Endoscopy is a common procedure and is associated with risk, albeit very small, of cross infection. Adherence to recommendation of disinfection requires to be followed at all time. The chemical disinfectant used; in particular gluteraldehye which widely used is associated with complications. We report the case of glutaraldehyde colitis in a man who had undergone colonoscopy for screening purposes. Although a self-limiting condition, clinicians need to be aware and be alert to this differential diagnosis especially when colitis follows a recent normal colonoscopy study

Keywords: Colonoscopy, complication, colitis, disinfectant colitis

INTRODUCTION

Colonoscopy is one of the most endoscopic examination carried out in our daily practice. Like other endoscopies, colonoscopy is any important of the armamentarium for the evaluation of the lower gastrointestinal tract. It allows direct visualisation of the mucosal and pathology, allows tissue sampling and also therapeutic interventions. However, like any invasive procedures, infection control and prevention of cross infections and transmission of infective proteins such as prion disease is paramount. Endoscopes are routine cleansed following standardised protocol using chemical disinfectants. Gluteraldehye remains a widely used disinfectant due to cost, availability and it effectiveness. However, clinicians need to be aware of the many adverse effects of gluteraldehye which range from contact dermatitis, burns, respiratory problem and also colitis. We report a rare case of gluteraldehye colitis in a patient who had undergone a colonoscopy several hours previously. Gluteraldehye colitis invariable means a lapse in the endoscope processing procedures resulting in remnant gluteraldehye causing colitis.

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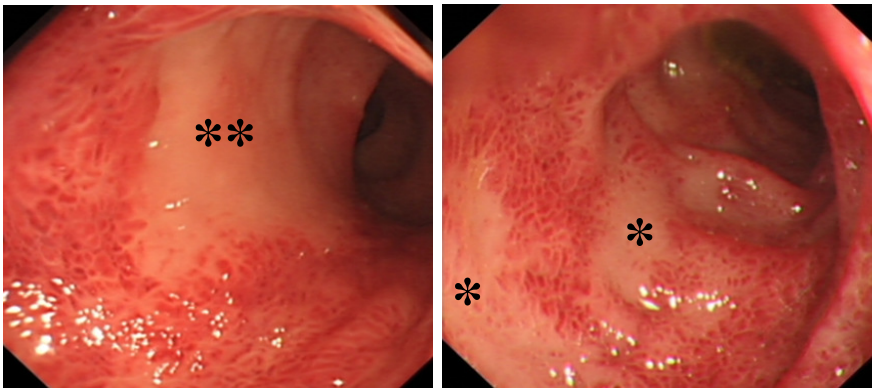
CASE REPORT

A 54-year-old Chinese man presented with acute onset of cramping epigastric and left upper quadrant abdominal pain associated with passing blood, mixed with stool. He denied any fever or any other gastrointestinal symptoms. He denied taking any food that may have caused acute gastroenteritis and there was no contact with anyone with acute gastroenteritis. On examination, he was well but had mild tenderness in the upper abdomen. Haemodynamic status was normal and



Figs. 1) a) Colonoscopic image showing confluent erythematous boarding normal mucosa (**) in the proximal extent, and b) colitis with interspaced normal mucosa (*).

he was in sinus rhythm.

He denied history of previous bleeding per rectum and had mild intermittent dyspepsia, cholecystectomy for gallstones several years back and uncomplicated chronic hepatitis B infection under regular follow up. Overall, he was fit and well. Of relevance, was that he had undergone an oesophagogastroduodenoscopy (OGD) for evaluation of dyspepsia and also a screening colonoscopy which was done the day before the symptoms started. The OGD showed gastritis and the colonoscopy was otherwise normal. No biopsies were taken during the procedure.

A sigmoidoscopy the following day with the suspicion of possible disinfectant colitis, showed proctosigmoiditis with intervening normal mucosa. Biopsy samples from the colitic areas showed superficial and upper crypt degeneration with fibrinous exudate over the surface, consistent with changes seen in acute ischaemic colitis consistent with the diagnosis of glutaraldehyde–induced colitis

The patient was managed conservatively, and a preliminary diagnosis of glutaraldehyde colitis was made based on the symptoms reported and the temporal link to the recent colonoscopy. He was discharged the same day, and was given antibiotic cover for five days. He remained well without further recurrence of the symptoms when he was seen several weeks later.

DISCUSSION

Glutaraldehyde colitis is uncommon and is estimated to have an incidence rate between 0.1 and 4.7%. [1] This figure however is likely an underestimation of the true number as diagnosis requires the attending clinicians to be aware of the condition. Furthermore, post colonoscopy abdominal discomfort is not uncommon and given that the condition is a spectrum, milder cases without or with minimal bleeding may not have presented and diagnosed.

Glutaraldehyde colitis shares many clinical features with ischaemic and even infective colitis, from signs and symptoms to histological findings. [3] However, in gluteraldehye colitis, fever is usually absent. Temporal

correlation is a strong discerning factor as most cases report symptoms within 24-48 hours post procedure. The clinical course itself is typically self-limiting and symptoms include abdominal crampy pain with per rectal bleeding. [3] In severe cases, fever, chills and tenesmus may also accompany abdominal pain. Imaging with computer tomography scan may reveal thickening of the affected bowel walls, which typically revert back to normal once the inflammation settles. [4]

Treatment of glutaraldehyde colitis is typically conservative and only requires supportive management in the form of adequate fluid, rest and pain relief. In severe cases of colitis, patients may need to be admitted for intravenous hydration and it may be appropriate to also commence on steroids and intravenous antibiotics. [3, 5] Infective causes are usually excluded by stool sampling but some centres may still prescribe antibiotic cover for uncomplicated cases as in our case. Furthermore, investigations for infective causes, stool and occasional blood often do not come back until several days later.

Glutaraldehyde is and effective commonly used disinfectant in the cleaning of endoscopic equipment. However, it is known to be toxic and cause damage to various mucosa on contact. [2] The direct toxicity of glutaraldehyde is responsible for damage and inflammation to the mucous membranes. Residual glutaraldehyde left on the scope, working channels or in the tubing between the water bottle and the endoscope have been reported. [6, 7] Apart from causing colitis, gluteraldehyde is also known to cause other adverse effects through direct contact with the chemical; skin, eyes and respiratory tract. At concentration of between 5% and 44%, contact with the skin results in skin irritation but concentration >45% can lead to skin burns. Contact with eyes can causes irritation and at concentration 2%or greater can cause irreversible eye injury. Aerosol contact with the respiratory tract results in irritation and in severe case, pneumonitis.

Given the toxicity of gluteraldehye, many centres particularly in the West are now replacing it with less toxic and environmental friendly disinfectant. However, due to it effectiveness, wide availability and the lower cost, it remains to be widely used for chemical disinfection of equipment. Therefore, with the increasing number of endoscopic procedures being carried out, it is important for clinicians including the frontline clinicians to be aware of this entity and consider it in the differential diagnosis.

In conclusion, our case highlights an uncommon case of colitis secondary to chemical disinfectants. Gluteraldehyde colitis typically present several hours after a lower gastrointestinal endoscopy. Despite the alarming presentation, it is a self limiting condition that settles even without any specific intervention. However, it is very important to be aware and diagnosis the condition so that any gap in the disinfecting procedures can be addressed.

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