

Gas explosion caused by argon plasma coagulation of colonic angiodysplasias

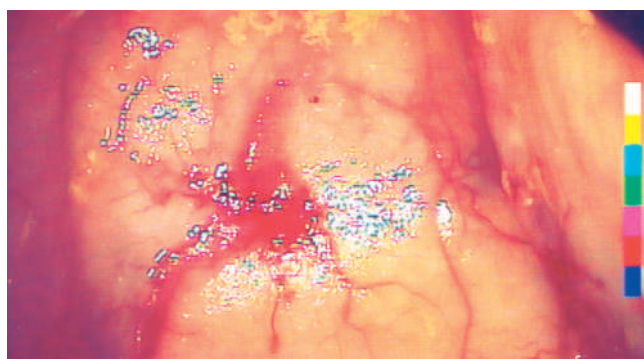


Figure 1 Angiodysplasia of the right-sided colon before treatment.

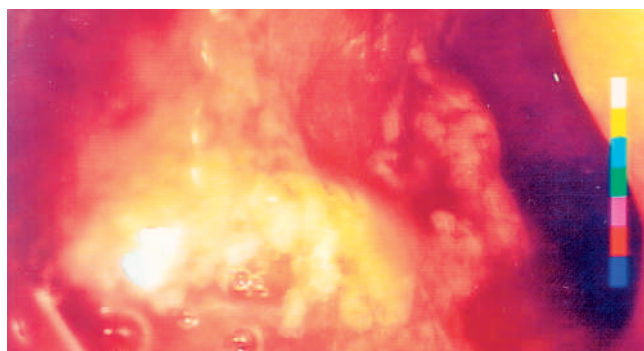


Figure 2 Angiodysplasia after treatment with argon plasma coagulation.

Argon plasma coagulation (APC) is a well-established tool to treat lesions of the gastrointestinal mucosa, such as angiodysplasias [1].

Cases of colon perforation after gas explosion caused by APC have been recorded since 1976 [2], especially after preparation with mannitol [3], which seemed to increase hydrogen gas production. Newer data suggest that stools remaining in an incompletely cleaned bowel may be the main cause for explosive gas production, rather than the type of chemical cleaning agent [4].

A 69-year-old patient initially presented to the emergency room with dyspnea and tachycardia, caused by substantial iron deficiency anemia.

Upper gastrointestinal endoscopy did not show any cause of acute or chronic bleeding, so the patient was prepared with macrogol solution (Klean Prep®), and a colonoscopy was carried out. Angiodysplasias were discovered in the ascending colon (► **Figure 1**). Immediately on starting to treat the first of these angiodysplasias with APC a loud gas explosion took place. No perforation was detectable at

the treatment site (► **Figure 2**), and the endoscope was immediately removed.

Conventional radiography and computer tomography of the abdomen did not show any sign of perforation, such as free air in the abdomen, until 2 days after colonoscopy (► **Figure 3**). Laparotomy was carried out, and two perforations of the ascending colon and the cecum were found. A right-sided hemicolectomy was performed.

The histological examination confirmed the sites of perforation, which did not match the site of the treated angiodysplasia. The patient's condition improved.

We present the first case to our knowledge of a severe colonic perforation caused by a gas explosion during APC treatment in a patient prepared with macrogol solution. This should raise awareness of the risk of explosion during APC, irrespective of the solution used for colon preparation.

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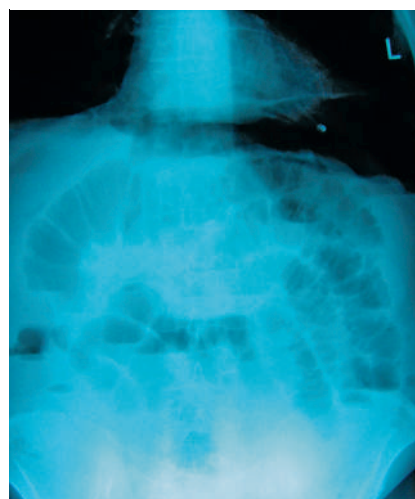


Figure 3 Free air on abdominal radiograph 2 days after intervention.

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Bibliography

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