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LETTER TO THE EDITOR

Subcutaneous emphysema, pneumomediastinum and pneumoperitoneum after diagnostic colonoscopy for ulcerative colitis: a rare but possible complication in patients with multiple risk factors

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Dear Editor:

Colonoscopy is regarded as a safe procedure, but complications may occur. The most dreaded are perforation and massive bleeding of the colon. The incidence of perforation is low but, despite increased experience with the procedure, it remains unchanged over time and in a large population study ranges from 0.6 to 1 per 1.000 procedures, depending on the centre and the data source. Few studies have assessed risk factors for colonoscopy-related bleeding and perforation. Gatto et al. have reported that there was a significant trend in the incidence of perforation with increasing age, people aged 75 years or older having a fourfold risk as compared to those aged 65–69 years; same results were obtained by Levin et al. in a series of more than 16.000 colonoscopies. The risk for adverse events has been also associated with comorbidity: diabetes, stroke, cardiovascular disease, chronic obstructive pulmonary disease. Moreover, risk factors for the development of perforations are pre-existing diseases of the colon (polyposis, inflammatory bowel disease, diverticula, strictures, etc.) and conditions related to the procedure itself, bowel cleansing or sedation. An estimated 50% to 100% of patients with a colonic perforation after colonoscopy require a laparotomy for closure of the perforation, with associated major postoperative morbidity and mortality reaching 39% and 25%, respectively.

An 80-year-old man with a 6-months history of diarrhoea (six motions/day) with mucus and, occasionally, blood was admitted to our department. Ulcerative colitis (UC) and diverticula had been recently diagnosed, but he did not respond to therapy. Past medical history revealed a cerebrovascular accident and coronary heart disease which requested aortocoronary bypass; for this reason he was on ticlopidine. We carried out colonoscopy according to the standard procedures. About 1 h after endoscopy the patient developed progressive facial and neck swelling, without any pain, dyspnea or stridor. On examination, vital parameters were normal. A clear crepitus was palpated in the head and neck, compatible with subcutaneous emphysema, and the chest was normal. The abdomen was tympanic but not tender, with normal peristalsis. Laboratory tests were normal. X-rays and a total body computed tomography were carried out and showed massive air leakage, with free air intra- and retroperitoneal, mediastinal air with limited pneumomediastinum and subcutaneous emphysema extending to the zygoma. The patient was managed conservatively with intravenous fluids and antibiotics (ceftriaxone). Twenty-four hours after onset of symptoms, he developed abdominal pain, fever (38°C) and mild leukocytosis (13.760/mmc); and he was transferred to surgical department. He was submitted to explorative laparoscopy which evidentiated a perforation of the caecum with exudative material in the peritoneum and air trapped into the retroperitoneum forming multiple bubbles. Right hemicolectomy with antiperistaltic ileocolonic anastomosis was carried out. The postoperative course

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was uneventful. Pathology report showed diverticula of the left colon and extensive UC.

Subcutaneous emphysema after colonoscopy is a recognised but rare complication that generally occurs in the context of a therapeutic colonoscopy complicated by bowel perforation. Our patient developed the whole spectrum of extraluminal air with subcutaneous emphysema, pneumomediastinum, pneumoperitoneum and pneumoretroperitoneum after diagnostic colonoscopy. Although iatrogenic perforation resulting in the presence of free air in soft-tissue planes is recognised, massive air leakage involving the abdomen, chest and neck after diagnostic colonoscopy has been reported, to our knowledge, only in two cases. Our patient had at least three risk factors for iatrogenic perforation as previously reported, i.e. age, presence of diverticula and vascular atherosclerosis with cerebral and cardiac involvement, while inflammatory bowel disease per se is not significantly related to perforation. The management of colonoscopic perforations remains controversial, since there are no specific guidelines, and has evolved during the last decades. Perforations can be often managed conservatively (bowel rest and intravenous antibiotics). Patients must be closely monitored and, if their general condition deteriorates with development of signs of peritonitis, a surgical intervention is mandatory. In early recognised and well-chosen cases, colonic perforations can be treated surgically using laparoscopic technique. The adverse event observed in this patient suggests extreme caution in performing invasive procedures, even only for diagnostic purposes, in patients with positive predictive factors for complications.