Massive pneumoperitoneum after argon plasma coagulation

Argon plasma coagulation (APC) is a noncontact electrocoagulation technique widely used in the gastrointestinal tract. The rate of complications after APC is low even though colonic perforation has been reported after development of submucosal emphysema [1,2].

We report the case of a 68-year old man who underwent endoscopic resection of a 3-cm nonpolypoid (IIa–IIc) lesion of the transverse colon (**Fig. 1**).

His previous medical history was unremarkable, blood chemistry was normal, and he was not receiving any medications. The endoscopic procedure lasted approximately 2 hours and after a piecemeal mucosal resection using the "lift and cut" technique, APC was applied to the resection margins. Submucosal emphysema was not observed (**Fig. 2**).

Immediately after the procedure, the patient's abdomen was distended without tenderness or any signs of peritonitis. After another 20 hours, because of the persisting abdominal distension, but no complaints on the part of the patient, an abdominal X-ray was taken, which demonstrated massive subdiaphragmatic free air (**Fig. 3a**).

After an uneventful period of waiting and watching for 2 days, the radiological picture was unchanged. The patient was discharged and 1 month later he underwent radiological follow-up, which showed marked reduction in the volume of the abdominal air (**Fig. 3b**), and 3 months after the endoscopic procedure the air had completely disappeared (**Fig. 3c**). The patient was asymptomatic throughout.

In the literature, a few cases of pneumoperitoneum after APC application have been reported, and one patient underwent laparotomy [3]. Despite the massive abdominal distension, lasting at least 1 month, our patient did not report any symptoms and did not undergo any treatment except cautious observation. In this setting, it is mandatory to distinguish between the presence of abdominal free air caused by bowel perforation from that due to the passage of gas through the gut wall. The latter, even if longlasting, does not trigger any complaint in our experience and can be managed conservatively.

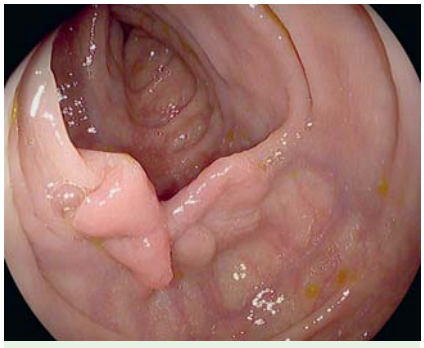

Fig. 1 Nonpolypoid (IIa–IIc) lesion in the transverse colon.

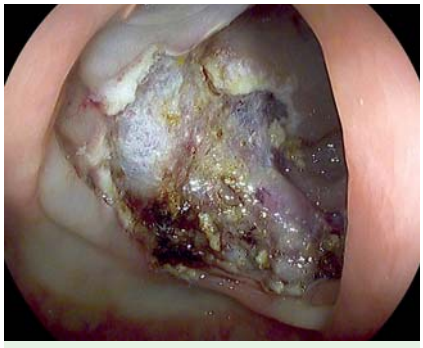

Fig. 2 Post-mucosal resection ulcer after argon plasma coagulation (APC) treatment.

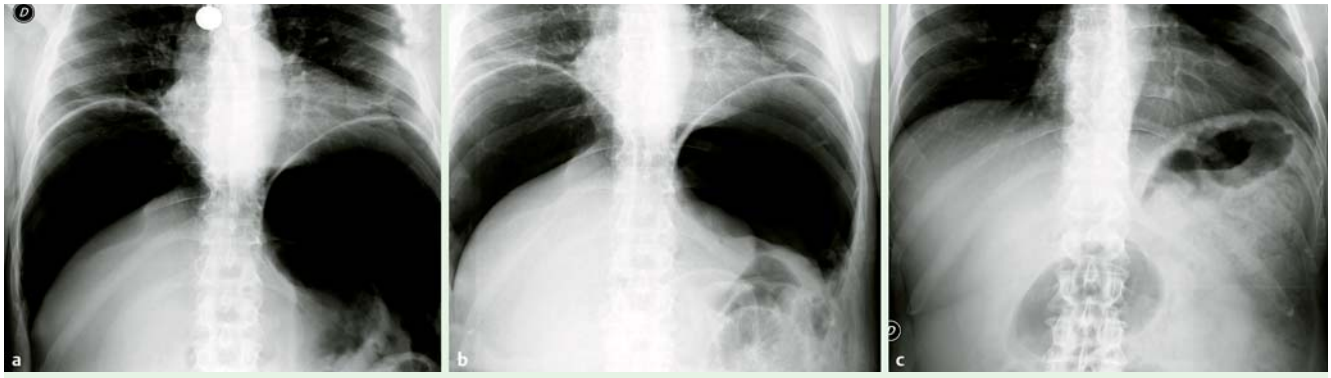

Fig. 3 Massive presence of subdiaphragmatic air and its gradual resolution to complete disappearance on the radiographs: **a** 20 hours, **b** 1 month, and **c** 3 months after the procedure.

Competing interests: None

Endoscopy_UCTN_Code_CPL_1AJ_2AI

G. de Roberto, D. Ravizza, G. Fiori, C. Trovato, A. de Leone, D. Tamayo, C. Crosta
European Institute of Oncology, Endoscopy Division, Via Ripamonti 435, 20141 Milan, Italy

References

1 *Manner H, May A, Faerber M et al.* Safety and efficacy of a new high power argon plasma coagulation system (hp-APC) in lesions of the upper gastrointestinal tract. Dig Liver Dis 2006; 38: 471–478
2 *Hoyer N, Thouet R, Zellweger U.* Massive pneumoperitoneum after endoscopic argon plasma coagulation. Endoscopy 1998; 30: S44–S45
3 *Manes G, Imbesi V, Bianchi-Porro G.* Pneumoperitoneum after argon plasma coagulation treatment: perforation or accumulation of air in the cavity? Endoscopy 2007; 39 (Suppl 1): E98

Bibliography

DOI 10.1055/s-0030-1255768
Endoscopy 2010; 42: E267

ISSN 0013-726X

Corresponding author

G. de Roberto
Division of Endoscopy
European Institute of Oncology
Via Ripamonti 435
20141 Milan
Italy
Fax: +39-0294379220
giuseppe.deroberto@ieo.it