A 59-year-old male underwent an endoscopic mucosal resection (EMR) of a 4-cm cecum polyp 1 year earlier. At that time, the patient had three endo-clips placed to close the EMR defect that was created. The pathology from the EMR was a tubulovillous adenoma. The patient was lost to follow-up but returned 1 year later for endoscopic follow-up. At the site, a previously placed endoclip was present, with residual polyp tissue embedded at the site. Attempted removal of the clip by an experienced senior gastroenterologist with a snare was unsuccessful. Biopsy of the polyp showed high-grade dysplasia.

The patient refused surgery and thus a repeat colonoscopy was performed by an interventional endoscopist. The clip was in place and residual neoplasia was seen in the cecum (Fig. 1a). Two advanced endoscopists attempted to remove the clip using a snare and grasping forceps but were unsuccessful. Biopsy of the polyp showed high-grade dysplasia.

The decision was made to perform salvage nitrous oxide balloon-based cryotherapy (C2 Therapeutics, Redwood City, California, United States). It is non-thermal and the balloon self-vents excess gas to avoid perforation.

A therapeutic gastroscope was used for the procedure. The CryoBalloon was able to appose the residual polyp and clip. A dosimetry of 10 seconds was used to ablate the residual neoplasia (Fig. 1b). Immediately after the cryotherapy, the area was erythematous consistent with post-ablation effects (Fig. 2a). On 2-month follow-up, the cecum was free of the polyp and clip (Fig. 2b). Biopsies of the scar were negative for residual polyp tissue.
gual squamous dysplasia. A multicenter, prospective non-randomized trial of 39 patients with Barrett’s esophagus dysplasia showed the device was feasible and safe [1]. In a different prospective trial, 41 patients (22 treatment-naïve) with Barrett’s esophagus dysplasia were treated with the CryoBalloon [2]. At 1 year, rates of complete eradication of dysplasia and intestinal metaplasia rates were 95% and 88%, respectively. A multicenter trial currently of more than 100 treatment-naïve patients with Barrett’s esophagus dysplasia who underwent CryoBalloon therapy currently is nearing completion.

The CryoBalloon has also been evaluated for treatment of esophageal squamous neoplasia. In a retrospective study of 10 patients, the device was used for ablation [3]. At 3 months follow-up, complete eradication was observed in all patients. Results from a large Asian prospective trial are anticipated in manuscript form soon. The abstract presented at Digestive Disease Week 2018 showed the CryoBalloon was well tolerated and highly effective [4].

The CryoBalloon has been used outside the esophagus in the stomach for ablation of gastric antral vascular ectasia (GAVE) [5]. In a multicenter retrospective study of 23 patients with GAVE refractory to argon plasma coagulation, the CryoBalloon was highly effective [6]. At 6 months, 83% of patients were transfusion-independent and 87% had more than 75% of the GAVE successfully eradicated.

This is the first report of use of the CryoBalloon in the colon. The main limitation of this case is that usually endoclips can be easily removed, and this was the reason for the difficulty in eradicating the residual neoplasia. However, this clip was unusual in that it remained for more than a year and thus was likely deeply embedded. In addition a senior gastroenterologist and two additional interventional endoscopists could not remove this clip despite exhaustive attempts.

It should be noted that the CryoBalloon can only be used with a therapeutic gastroscope, which limits its applications in the colon. However in our experience, especially with difficult colonoscopy, the vast majority of the colon can be examined with a gastroscope [7]. Large feasibility and safety studies are
needed prior to endorsing its routine use in the colon. However, this case shows that this is a viable salvage technique for use in the colon when standard techniques fail.

Competing interests

Dr Trindade is a consultant for C2 Therapeutics.

References


