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Correspondence

A new practical alternative for tumoural gastrointestinal bleeding: Ankaferd blood stopper

Sir,

We read with great interest the paper written by Kurt et al. [1], describing the beneficial haemostatic effect of Ankaferd blood stopper (ABS) in 10 cases of neoplastic gastrointestinal (GI) bleeding. We would like to present our ABS experience in similar cases, and add a few comments about their results.

We performed an observational study with intention-to-treat analysis in six patients suffering from malignant GI bleeding. In five patients, ABS was applied topically during endoscopy by a sclerotherapy needle or a heater probe catheter. It was flushed through a nasogastric tube in the sixth patient due to cardiac risks and non-compliance to endoscopy. Patient demographics, definition of bleeding and follow-up during and after endoscopic procedures were recorded (Table 1). For all patients, written informed consent regarding the off-label use of ABS as a means of attaining haemostasis had been obtained. ABS was used as a primary haemostatic agent and control of bleeding was obtained in five cases during first session while one required a second application (Table 1).

ABS as a novel haemostatic agent was found to be promising in agreement with evolving literature [1–3]. However, some further comments may be drawn from our small case series. First, Kurt et al. [1] reported that ABS stopped malignant GI bleeding in all 10 patients within seconds. Although our results supported their findings for oozing lesions, this may not be true for severe bleeding (flowing, spurting) like in our case 2. In this case, the bleed-

Table 1
The characteristics of patients, bleeding, procedures and follow-up.

Patient features			Definition of bleeding		Endoscopic features		Post-endoscopic follow-up	
No.	Diagnosis	Age/sex	Symptom	Hb/Hct	Endoscopic diagnosis	Procedure	Early	Late
1	Gastric cancer	38/M	Melena Orthostasis	7.9 gr/dl (21%)	Polypoid mass in the antrum Diffuse oozing	ABS (10 ml)	Bleeding stopped Elective surgery	Stable at 5th month On chemoradiotherapy
2	Gastric cancer	74/M	Hematemesis Melena Hypotension Tachycardia	8.8 gr/dl (26%)	Ulcerated polypoid mass at cardia to corpus Diffuse oozing and flowing	ABS (7 ml)	Bleeding lessened but continued Reapplication of ABS (15 ml) on 4th day stopped bleeding[a] Elective surgery	Stable at 4th month On chemoradiotherapy
3	Gastric cancer	48/M	Melena Hypotension	9.8 gr/dl (30%)	Polypoid mass in the antrum Diffuse oozing and some flowing	ABS (11 ml)	Bleeding stopped Elective surgery	Stable at 2nd month On chemoradiotherapy
4	Gastric cancer	50/F	Melena Hypotension	11.1 gr/dl (33%)	Ulcerated-vegetative mass in the corpus Diffuse oozing		Bleeding stopped	Stable at 2nd month On chemoradiotherapy
5	Gastric cancer	70/F	Melena Orthostasis	7 gr/dl (22%)	Not done	ABS via nasogastric route (15 ml)	Bleeding stopped Palliative care	Exitus (unrelated to bleeding)
6	Periampullary cancer	72/M	Melena Hypotension Tachycardia	7.2 gr/dl (19.8%)	Extensive periampullary cancer Diffuse oozing and flowing Terminal patient	ABS (10 ml)	Bleeding stopped Palliative care	Exitus (unrelated to bleeding)

[a] Conservative therapy was chosen by attending physicians until 4th day.

ing was only lessened in minutes despite a large dose of ABS, and required a second application. Therefore, the main determinants of successful haemostasis (size of injured point and bleeding vessel, haemostatic status and underlying illness) should apply to ABS as for other haemostatic measures.

Second, they concluded that ABS does not require precise localisation of the site of bleeding. Although this appeared to be a very impressive feature of ABS, direct topical application should be preferred whenever possible. This leads to decrease in the dose of ABS with an increase in success rate. We also instilled ABS in a blind fashion (from distal oesophagus in case 2, via nasogastric in case 5 and in a random fashion in the remaining four patients), however, finding the exact localisation of bleeding point(s) would be desirable to decrease ABS dose. This manoeuvre should also increase success rate based on ABS mechanism of action. ABS leads to the formation of an encapsulated protein network at the injured area, providing focal attachment points for erythrocyte aggregation like an "erythrocyte magnet", and forms the haemostatic "ABS-web" [4]. Recently, ultra structural and morphological analysis of ABS-induced coagulum was illustrated under scanning electron microscopy [5]. Although this protein network is enriched principally with erythrocytes, it also causes augmentation of the primary and secondary haemostatic systems without disturbing individual coagulation factors or platelets [4,5]. Therefore, its maximum effects should depend on contact with the injured area and a sufficient concentration. The general endoscopic principles (systematic searching for bleeding point, irrigation, etc.) should not be forgotten before ABS usage.

Third, macroscopically, ABS-induced coagulum deposits appeared as different colours (brownish, greyish-yellow or even black simulating necrosis), which were reversible. The colour(s) may depend on interactions of ABS ingredients with the blood, microflora and secretions.

In conclusion, ABS is found to be effective in cases of malignant GI bleeding. Its major advantages among various known measures are appeared to be ease of use and no known side effects. Prospective, controlled studies are needed urgently to determine the full scope of ABS in the therapy of GI bleeding.

Conflict of interest statement

None declared.

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The combined application of advanced endoscopic imaging techniques may increase the duodenal villous morphology definition in suspected celiac disease

Sir,

We read with interest the commentary by Cucchiara and Di Nardo on the ability of advanced endoscopic imaging techniques to identify celiac disease (CD) [1]. In this paper, the authors point out the role in the diagnosis of CD of optical coherence tomography, which has been reported by Masci et al. having a sensitivity and specificity of 82% and 100%, respectively [2]. The authors also give a rapid overview of results obtained in identifying CD by other endoscopic tools such as high resolution endoscopy and water-

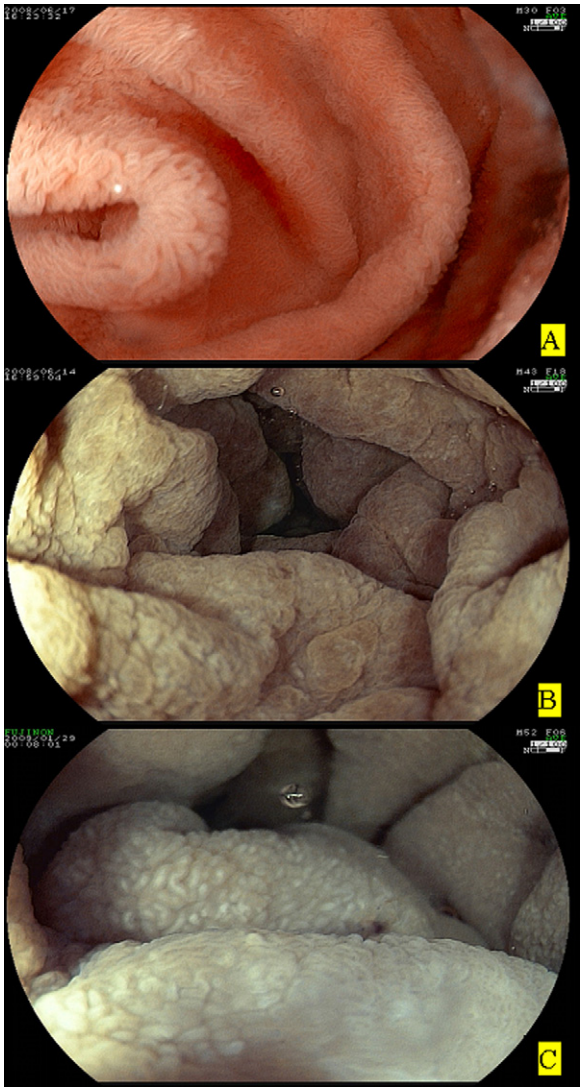

Fig. 1. High resolution endoscopy combined with OBI and immersion technique of the second part of duodenum (A: normal villous pattern; B: total villous atrophy; and C: partial villous atrophy).