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CASE REPORT

Successful topical application of Ankaferd Blood Stopper in a patient with life-threatening fundal variceal bleeding despite cyanoacrylate injection

Y. Beyazit*, M. Akdogan, A. Sayilir, S. Torun, B. Suvak, M. Kurt

Department of Gastroenterology, Turkiye Yuksek Ihtisas Training and Research Hospital, 06100 Ankara, Turkey

Available online 24 August 2011

Summary Gastric variceal bleeding is a common problem in patients with cirrhosis and despite early endoscopic and/or pharmacological therapy, variceal bleeding cannot be controlled or recurs early in about 10 to 20% of patients with considerable morbidity and mortality rates. For this reason, effective control of active bleeding varices is of great importance for the prevention of late complications. Although endoscopic band ligation and sclerotherapy are the choice of endoscopic treatment modalities with various grades of success, limited data is available for the use of Ankaferd Blood Stopper (ABS) for the controlling of variceal bleeding due to gastric varices. We herein present a unique case of gastric variceal bleeding despite cyanoacrylate injection, which was successfully controlled with topical ABS application.

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Introduction

Variceal bleeding is the most serious and life-threatening situation among the causes of upper gastrointestinal bleeding (GIB) with considerable mortality rates in patients with severe or advanced liver disease. Although endoscopic management does reduce the rates of rebleeding, surgery, and mortality in active variceal hemorrhage, early recurrence still occurs in around 20% of the patients which suggests a need for therapeutic armamentarium of such cases that is easy, effective and minimal side effects [1,2]. In this

respect Ankaferd Blood Stopper (ABS) offers a safe and effective alternative approach for the 'difficult-to-manage' subtypes of GI bleedings. Herein, we would like to report a case of fundal variceal bleeding despite the application of cyanoacrylate injection that was successfully controlled with ABS application.

Case report

A 60-year-old female was admitted to our emergency medicine department with a diagnosis of splenic vein thrombosis and a history of previous bleeding from gastric fundal varices. Her blood pressure was 95/60 mmHg and heart rate was 82 beats per minute. Her hemoglobin level was 9.3 g/dL, platelet count was 128,000, serum creatinine

* Corresponding author. Tel.: +90 31 23 061320;
fax: +90 31 23 121340.

E-mail address: yavuzbeyazit@yahoo.com (Y. Beyazit).

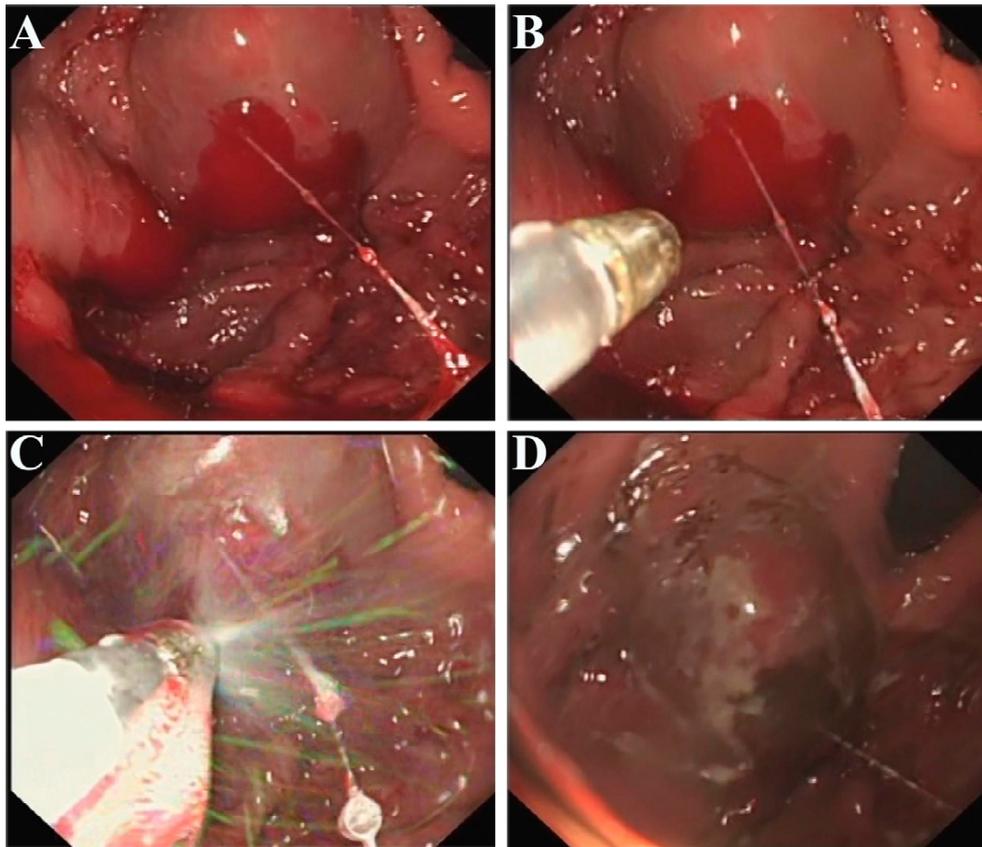


Figure 1 A. Oozing hemorrhage from nodular medium-sized fundal varices. B. Ankaferd Blood Stopper (ABS) topically applied just over the bleeding site in retroflexion through a washing pipe. C. ABS sprayed in retroflexion over the lesion through a washing pipe. D. Two minutes after the application of ABS, a protein network, which gives the yellowish color, is formed and covers the bleeding site. The hemorrhage is completely controlled.

was 0.58 mg/dL, and international normalized ratio was 1.02. Upper endoscopy revealed actively bleeding nodular medium sized varices in the fundus with no accompanying esophageal varices. A total of 3 cm³ N-butyl-2-cyanoacrylate with lipiodol injection was performed to the bleeding varices. Bleeding cessation was not completely achieved with this injection (Fig. 1A and B), therefore we decided to give ABS for controlling active variceal bleeding. Approximately 20 mL of ABS solution were sprayed through the disposable washing pipe (Fig. 1C) (Model PW-205 L, Olympus Corporation, Tokyo, Japan) over the bleeding site, which resulted in immediate control of bleeding (Fig. 1D). On day 3, another endoscopic examination was performed that revealed clean surface fundal varices.

Discussion

ABS, a traditional Turkish plant extract used through the years as a topical haemostatic agent, is a standardized mixture of the plants *Thymus vulgaris*, *Glycyrrhiza glabra*, *Vitis vinifera*, *Alpinia officinarum*, and *Urtica dioica*, each of which have some effects on the endothelium, blood cells, cellular proliferation, vascular dynamics, angiogenesis, and/or cell mediators [3,4]. The basic mechanism of action for ABS seems to be the formation of an encapsu-

lated protein network, which acts as an anchor for vital physiological erythrocyte aggregation [3] (Fig. 2). Rather than affecting an individual clotting factor, this protein mesh affects the whole physiological hemostatic process that controls bleeding. The easiness of its application and its effectiveness make ABS an attractive alternative treatment modality for miscellaneous hemorrhagic situations. In this respect, ABS was reported to be effective in a patient with retropubic radical prostatectomy [5]. In this case report, ABS was found to be a safe and effective alternative to conventional hemostatic agents even in patients undergoing urogenital surgery.

Despite recent developments in endoscopic hemostatic and adjuvant pharmacologic treatments, variceal upper GIB is still a major cause of morbidity and mortality with a reported incidence of 15 to 20% [2]. Although less frequent than esophageal variceal bleeding, rebleeding and mortality rates for gastric varices are reported to be high from esophageal varices [6]. For this reason, effective control of fundal variceal hemorrhage is of great importance to reduce morbidity and/or mortality related to significant blood loss. In our case, the oozing fundal variceal bleeding was terminated immediately by ABS application that enabled endoscopist a better observation and endoscopic intervention possibility. In this setting, ABS seems to offer an exciting alternative in the treatment of variceal bleed-

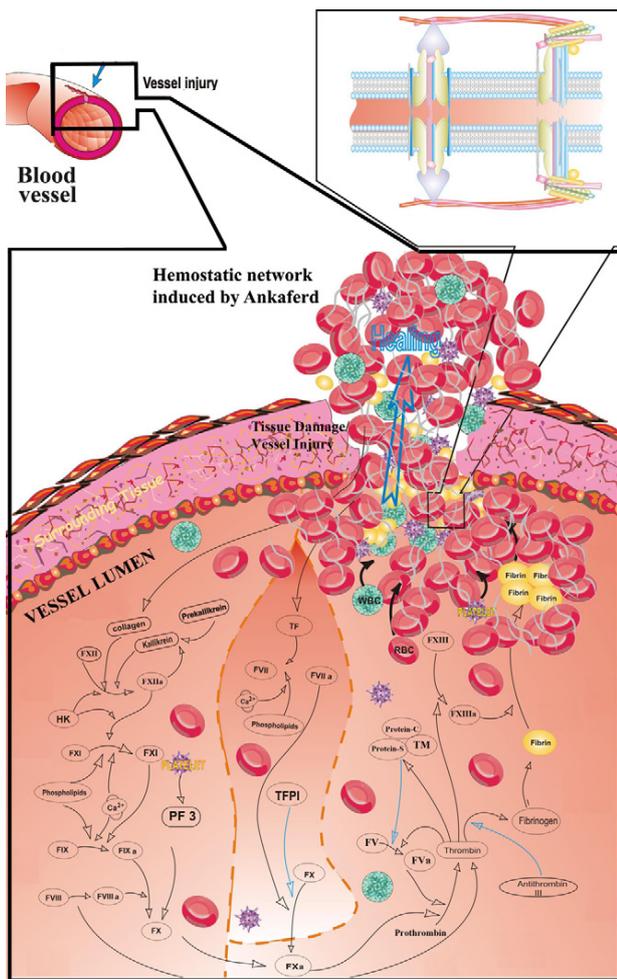


Figure 2 The basic mechanism of action for Ankaferd Blood Stopper (ABS) is the formation of an encapsulated protein network that provides focal points for erythrocyte aggregation. ABS-induced formation of the unique protein network within the vital erythroid aggregation covers the entire physiological haemostatic process.

Modified from [3], with permission.

ing due to its ease of application, non-toxicity and speed of action. Despite its effectiveness in bleeding control, there is only a small number of reported cases [7,8] in literature in which ABS was applied in bleeding gastric varices. But in both of these cases, ABS was reported to perform as a primary agent, in contrary to our case. The importance of our case lies in the demonstration of the effectiveness of ABS even in patients with unsuccessful cyanoacrylate administration.

In conclusion, ABS may be helpful as a haemostatic agent in the management of the life-threatening condition of active variceal bleeding, even until conventional modalities are failed. Further clinical observations and randomized trials studies are warranted to validate the effectiveness and safety of ABS in GIB.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

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