

Endoscopic Doppler Sonography in gastroduodenal ulcer bleeding

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Doppler sonography has been performed in endoscopy since 1982 [1]. Research has drawn predominantly from gastroduodenal ulcer bleeding [1, 3, 4].

Materials and methods

Forty-one consecutive patients, 24 men and 17 women, with a mean age of 59 years (24–79 years) underwent endoscopy due to acute gastroduodenal ulcer bleeding. There were 26 duodenal ulcers and 15 ventricular ulcers. A pulsed microvascular Doppler (MF 20, Eden Medizinische Elektronik, Überlingen, FRG) was utilized. A Doppler-positive ulcer means that there is a visible vessel in the ulcer base or within 1 mm depth of its surface. Vessels which are located deeper are not relevant for bleeding. In all cases of Doppler-positive ulcers, prophylactic local injection therapy with 2–5 ml 1:10000 epinephrine and 1% of polidocanol was applied. The findings were checked the next day and 2 weeks later. Disappearance of the endoscopically detected arterial signal and a lack of recurrent bleeding were regarded as signs of a successful therapy.

Results

Initially, all patients presented with a Forrest II state, i.e., a no longer bleeding ulcerous lesion with signs of previous hemorrhage [2]. In 11 cases, Doppler sonography revealed an artery which had been responsible for the bleeding (=Doppler positive). Injection therapy was carried out, and no further bleeding occurred, except in 1 case. This patient suffered from a recurrent squirting arterial bleeding which had to be treated surgically (Fig. 1). The ulcers of the remaining 10 patients had healed after 2 weeks, and Doppler study no longer revealed an arterial

vessel. In the other 30 patients, no vessel responsible for the hemorrhage could be found (=Doppler negative).

Discussion

For the past 40 years, the death rate from acute gastroduodenal bleeding has remained at approximately 10% [4]. The ulcer hemorrhage is accompanied by a high rebleeding rate, of up to 86% [4, 5]. Endoscopic Doppler ultrasound is the only reliable means to identify an artery responsible for the bleeding. Prophylactic injection therapy of superficial vessels can reduce the rate of recurrent hemorrhage down to 8% [4]. In addition, the success of therapy can be checked by Doppler sonography [4]. Our study provided similar results, but with a smaller number of cases. An arterial vessel in the ulcer base could be seen in 11 patients. Rebleeding after injection therapy occurred in only 1 case. In the other patients with Doppler-positive findings, the prophylactic sclerotherapy proved to be effective. The ulcers healed without relapse bleeding. This demonstrates that Doppler sonography is an efficient technique enabling the identification of arterial vessels in ulcer bleeding. Monitoring of local injection therapy is made possible, and the risk of prognostically unfavorable rebleeding can be reduced.

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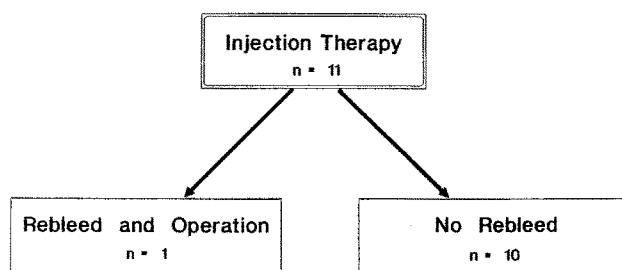


Fig. 1. Follow-up of 11 patients with Doppler positive ulcers