CLIPPING

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The following endoscopic techniques have been developed for achieving hemostasis

- Injection of epinephrine or sclerosants
- **Application of hemoclips/endoclips or over-the-scope clips**
- Bipolar electrocoagulation
- Band ligation
- Heater probe coagulation
- Constant probe pressure tamponade
- Bipolar/soft coagulation hemostatic forceps
- Argon plasma coagulator (APC)
- Laser photocoagulation
- Rubber band ligation
- Application of hemostatic materials, including biologic glue and tissue adhesives
- Application of hemostatic powder/spray
- Doppler ultrasonographic assessment, pre- and postendotherapy

Accumulating your war chest

Epinephrine injection, clip therapy, thermal therapy, injection of a sclerosing agent, topical hemostatic sprays, powders

CLIP

OTSC

water pump

CAP

CLIPPING : BLEEDING – PERFORATION

TTS CLIP

OTSC

PERFORATION

CLIPS

They are composed of 3 main components:

1. A metallic double-pronged clip
2. A delivery catheter
3. A handle used to operate and deploy the clip.

TIPS FOR CLIPPING

Endoclips should be applied in a transverse direction to the vessel and sequentially applied in a zipper fashion to repair a mucosal defect (perforations).

The orientation of some clips can be adjusted by rotating the handle itself or a component of the handle.

Some clips can be reopened after initial closure before deployment.

Rates of hemostatic success using endoclip technology vary from 85-100%

Perforation from clip placement has been reported but is exceedingly rare.

Annals of Gastroenterology 2020;33:1-8

Gastrointest Endosc 2009

CLIPS

- Typically, they become detached and pass from the GI tract within 1 – 3 weeks.

- Hemostatic clips are considered magnetic resonance imaging (MRI)-conditional because they are metallic, and they can serve as radiopaque markers to direct the interventional radiologist during angiography to the relevant area if endoscopy fails to achieve adequate hemostasis.

- These clips vary in their size and strength. Numerous manufacturers have produced hemostatic clips, with the most significant advancements being the ability to rotate for accurate placement and the ability to reopen and reapply when necessary.

TYPES OF CLIPS: TTS + OTSC

QuickClip-EZclip (Olympus, Japan) **arm length**: 6 - 7.5 – 9 – 10 - 11 mm. Jaw angle (A) 90o, 135o

Precise rotation - MR conditional up to 3 Tesla

Resolution and 360 (Boston Scientific, USA) 11 mm

Open/close jaw up to 5 times - MR conditional up to 3 Tesla - Controlled rotation in tortuous anatomy - Can be rotated by technician or endoscopist (Resolution 360 clip)

Instinct (Cook Medical, Ireland) 16 mm

Open/close jaw up to 5 times - MR conditional up to 3 Tesla.

DuraClip (Conmed, USA) 11 and 16 mm

Shorter clip design, closer proximity to tissue defect - Unlimited open/close before deployment - MR conditional up to 3 Tesla

Sureclip (Micro-Tech, USA) 11 and 16 mm

Shorter clip design - Unlimited open/close before deployment - MR conditional up to 3 Tesla

Over-the-scope clip (OTSC) accessory: (Ovesco Endoscopy AG, Tübingen Germany) and Padlock system (Steris Endoscopy, Mentor, Ohio, USA)

A review. World J Gastrointest Endosc 2020;12:1-16. -- Int J Gastrointest Interv 2019;8:127–133

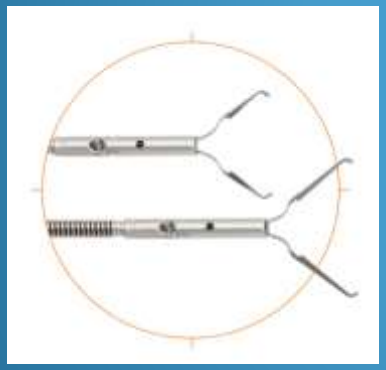
Each clip has a unique physical and functional profile, which may be a factor in selection depending on the clinical circumstance.

Wang TJ, et al. Choosin the right through-the-scope clip: a rigorous comparison of rotatability, whip, open/close precision, and closure strength. Gastrointest Endosc.2019;89:77-86.e1.

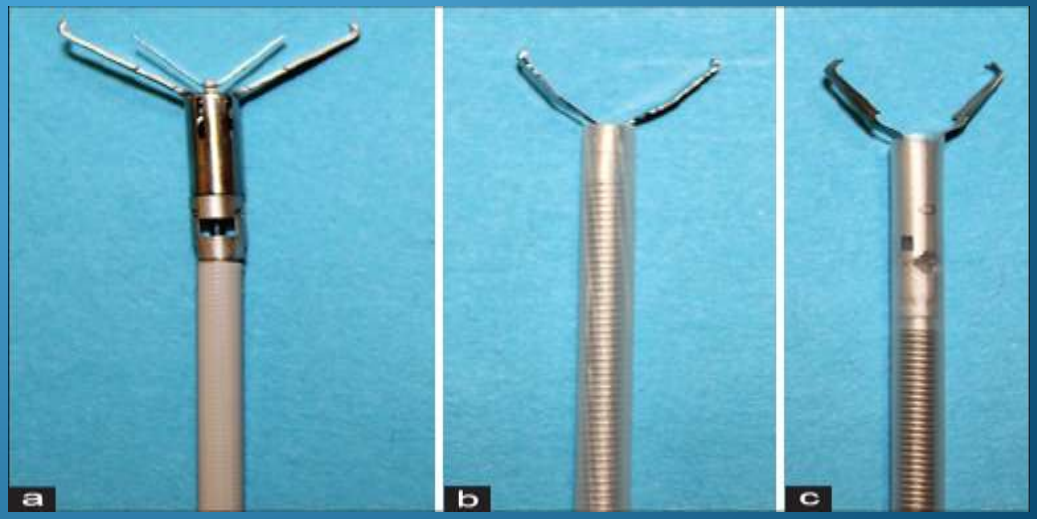
OLYMPUS
QuickClipPro
QuickClip2
QuickClipLong
EZClip

Jaw angle - Jaw length - Jaw opening width

BOSTON
Resolution
Resolution 360

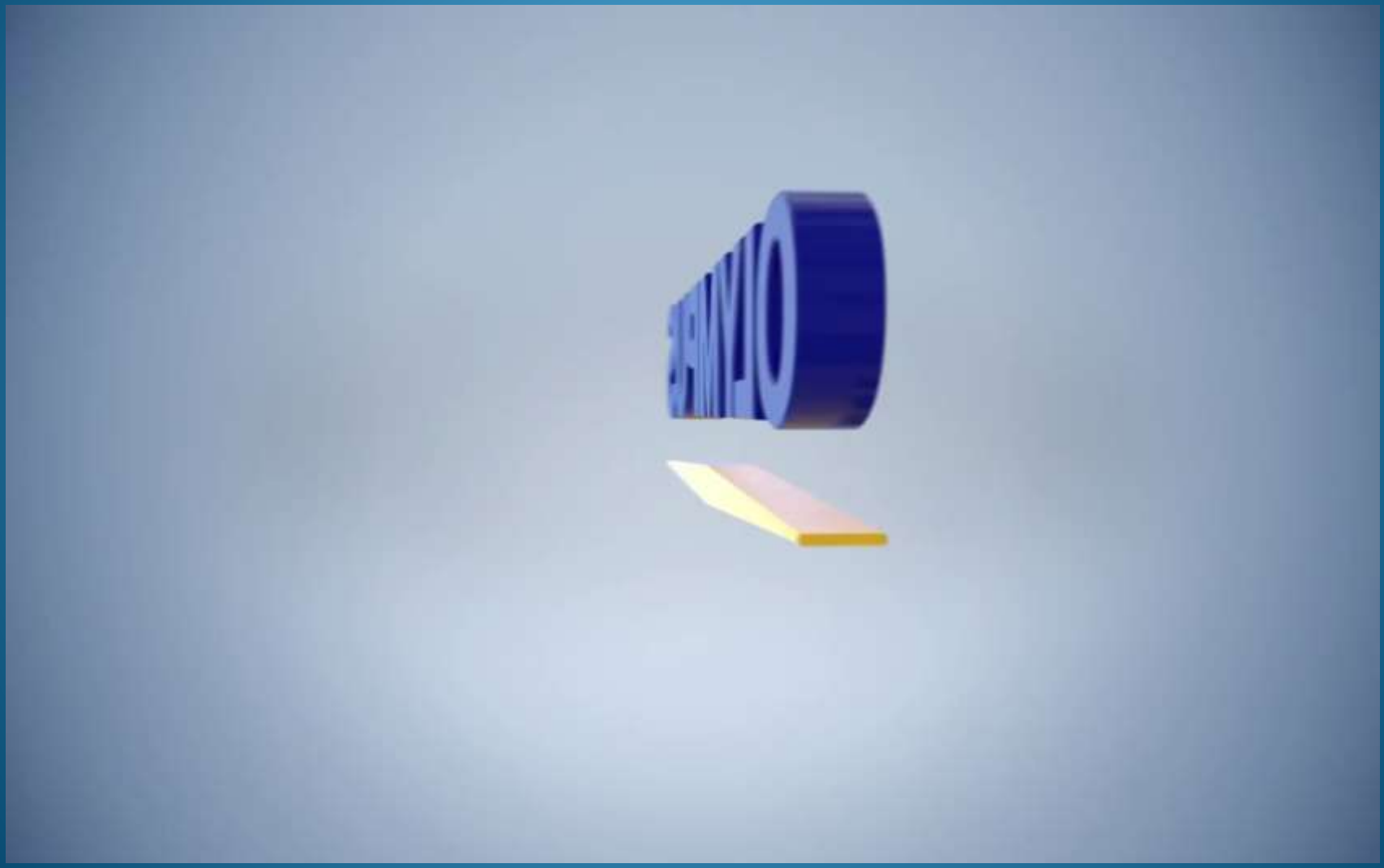


COOK
instinct



The instinct clip (a) with 16 mm jaw span, QuickClip2Long (b) with 11 mm jaw span and resolution clip (c) with 11 mm jaw span

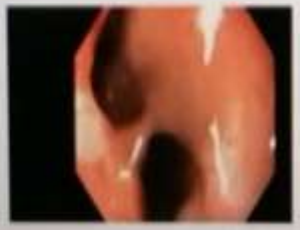
VIDEO CLIPPING



Forrest classification

Bleeding ulcers		Signs of recent hemorrhage SRH			Nonbleeding ulcers
Ia: spurting hemorrhage	Ib: oozing hemorrhage	IIa: nonbleeding visible vessel	IIb: adherent clot	IIc: flat pigmented spot	III: clean base ulcer
high-risk stigma, endoscopic therapy	high-risk stigma (?), endoscopic therapy	high-risk stigma, endoscopic therapy	remove the clot		





doi.org/10.1016/s0140-6736(74)91770-x

Diagnosis and management of nonvariceal upper gastrointestinal hemorrhage.

Endoscopy 2015; 47: a1-46. Gralnek Ian M et al.
Endoscopic diagnosis and … Endoscopy 2021; 53.
European Society of Gastrointestinal Endoscopy (ESGE)

It is now common practice for adrenaline injection into the bleeding point to be combined with another modality of endoscopic treatment, such as thermal coagulation or hemoclip placement, to increase the rate of hemostasis and decrease the rate of rebleeding.

The additional use of another endoscopic modality in combination with adrenaline, such as endoscopic clip placement, contributes to successful hemostasis and thus reduces the volume of adrenaline that needs to be injected

ESGE GUIDELINES

According to the European Society for Gastrointestinal Endoscopy (ESGE) guidelines, *endoclip can be used as monotherapy for ulcers with a non-bleeding visible vessel (FIIa)*.

In *ulcers with active bleeding (FIa + FIb), combination therapy* (injection of epinephrine in conjunction with either a mechanical or thermal method) is recommended.

ESGE does not recommend that epinephrine injection be used as monotherapy

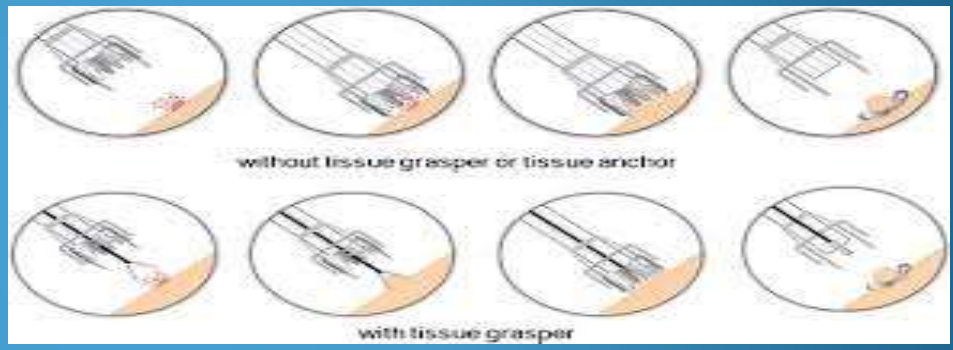
Karstensen JG, Ebigbo A, Aabakken L, et al. Nonvariceal upper gastrointestinal hemorrhage: European Society of Gastrointestinal Endoscopy (ESGE) Cascade Guideline. Endosc Int Open 2018;6:E1256-E1263

Difficulty of endoclip placement and predict failure of hemostasis for NVUGIU include:

- large ulcers > 2 cm
- a large nonbleeding visible vessel within the lesion
- ulcers located in the lesser gastric curvature or in the posterior duodenal wall
- excessive blood in the stomach

The OTSC is mostly indicated:

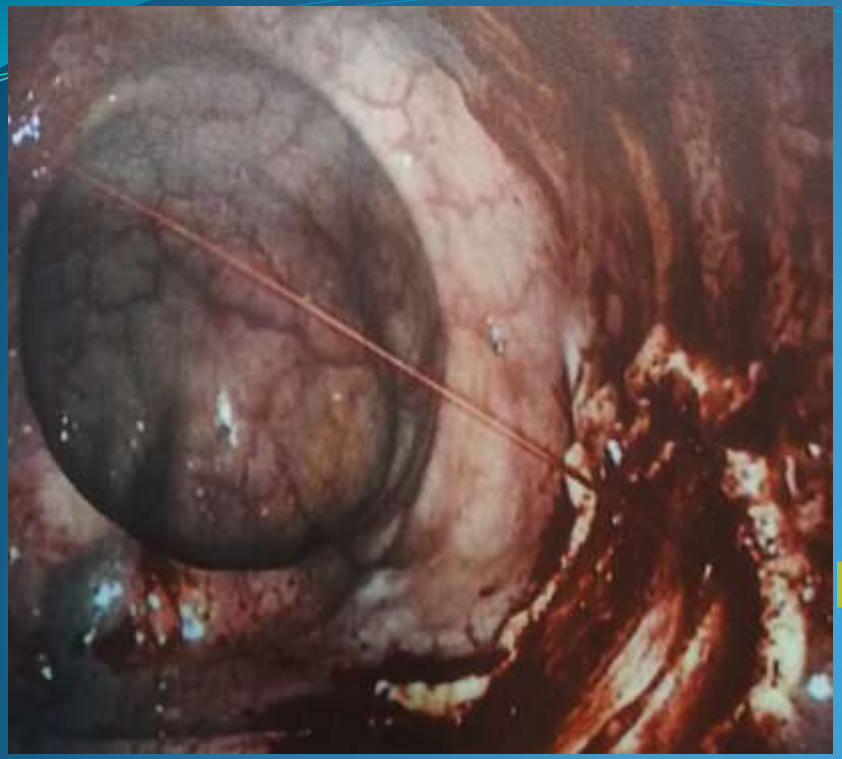
1. Large and fibrotic ulcers
2. Rescue therapy in non-variceal upper GI bleeding
3. Fistulas



4. Perforations and dehiscence of anastomoses
5. Other circumstances in which treatment with a TTS approach is difficult or fails

CLIPPING - BLEEDING LOWER GI

Spurting hemorrhage



Use of prophylactic clip placement after polypectomy should not be a routine practice. However, prophylactic clip placement in certain high-risk patients (eg, requiring anticoagulation, large and/or right-sided lesions) may be beneficial, and this decision should be individualized.

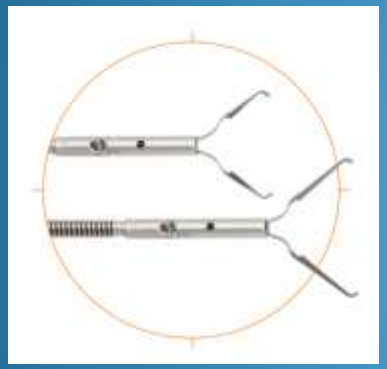
GASTROINTESTINAL ENDOSCOPY 2019;4(7):285-299

Devices for endoscopic hemostasis of nonvariceal GI bleeding

For endoscopists, the choice of a hemostatic device should depend on the type and location of the bleeding lesion, the availability of equipment and expertise, and the cost of the device.

VideoGIE 2019;4:285-99

GASTROINTESTINAL ENDOSCOPY



THANK YOU FOR YOUR ATTENTION