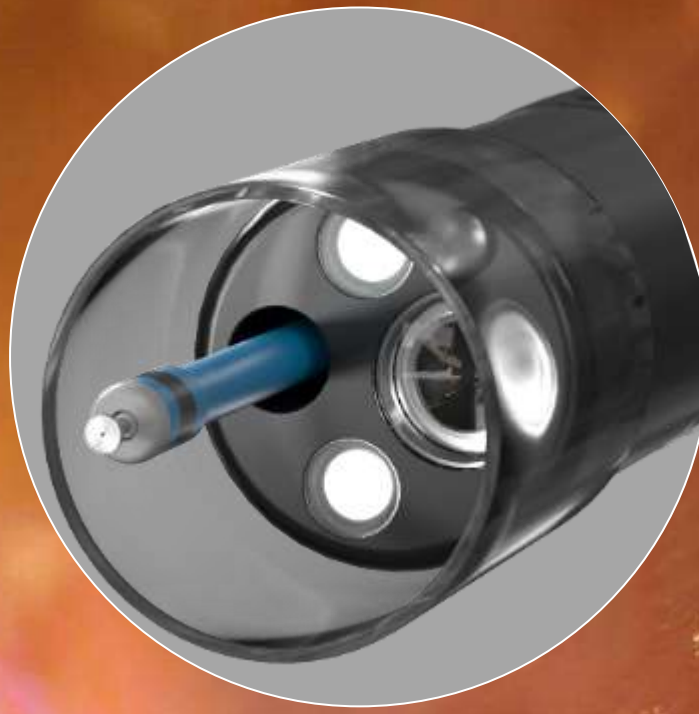
ERBE Technologies In Gastrointestinal Tract



DR. Hanan Qarwani

Medical Power

Eng. Rula Hindi

ERBE Technologies In Gastrointestinal Tract

- **HYBRID Technology**
  - **HYBRID**knife
  - **HYBRID**knife Flex
  - **HYBRID**APC
  - Clinical Applications

- **APC Technology**
  - **APC** Modes
  - **APC** probes
  - **Clinical** Applications

- **GI workstation**
- How can ERBE & Medical Power support you

HYBRIDknife Technology

Indications for use and Clinical application

Abnormal tissue changes (lesions) Benign polyps (adenomas) Cancerous tumors in their early stages (early carcinomas)	Dysphagia (achalasia)	Abnormal change in the mucous membrane of the esophagus (Barrett's Esophagus) Dysplasia/mucosal lesions: advanced stage of Barrett's Esophagus
ESD Endoscopic submucosal dissection	**POEM** Peroral endoscopic myotomy	**Ablation of** Barrett's Esophagus

HYBRID Technology
The Concept

Erbe combines two technologies in a single instrument

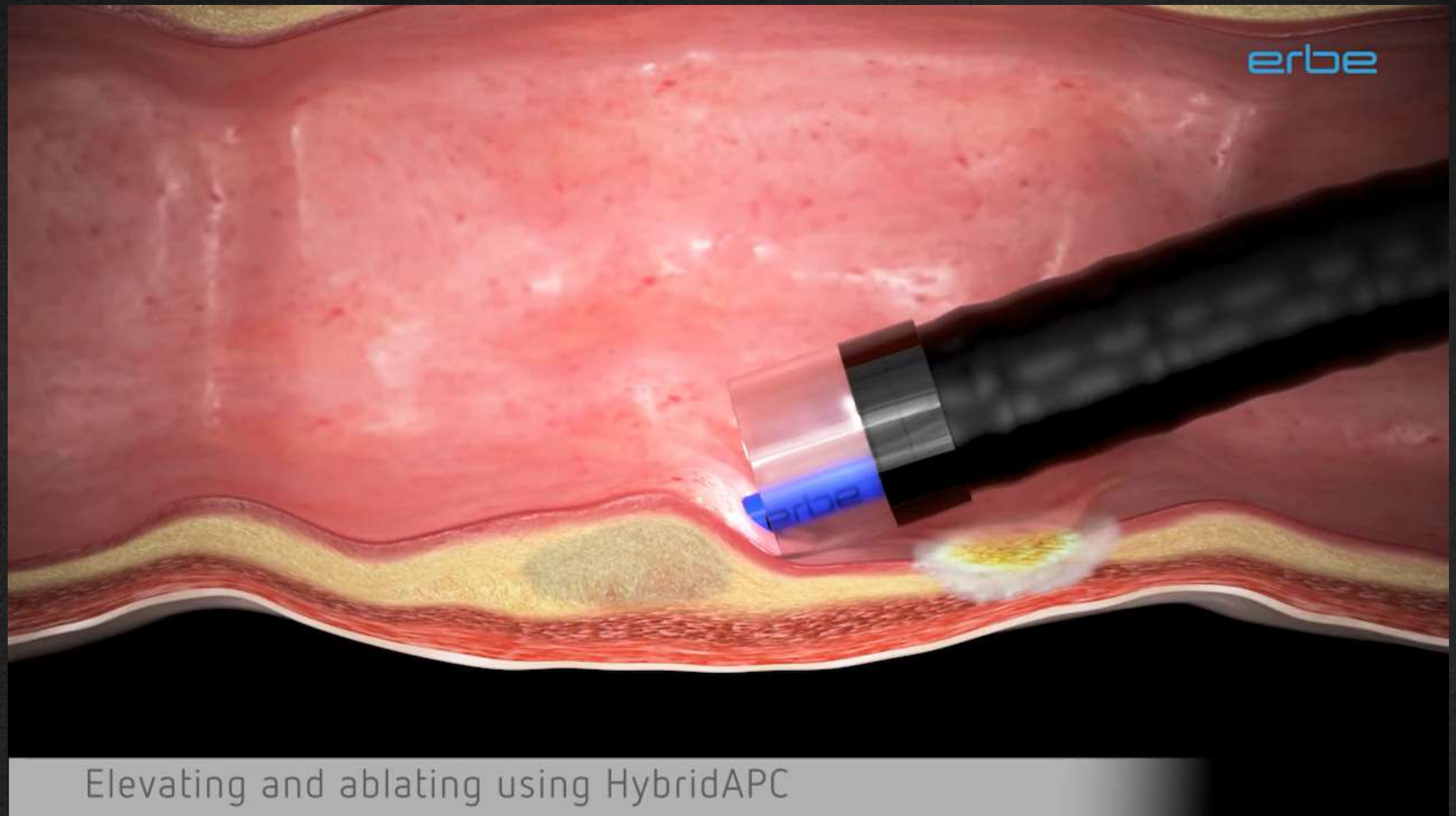
electrosurgery with hydrosurgery

Needleless injection with ERBEJET® 2

HYBRIDknife® flex

Hybrid technology from Erbe

HybridAPC



Elevating and ablating using HybridAPC

Hybrid technology in flexible endoscopy

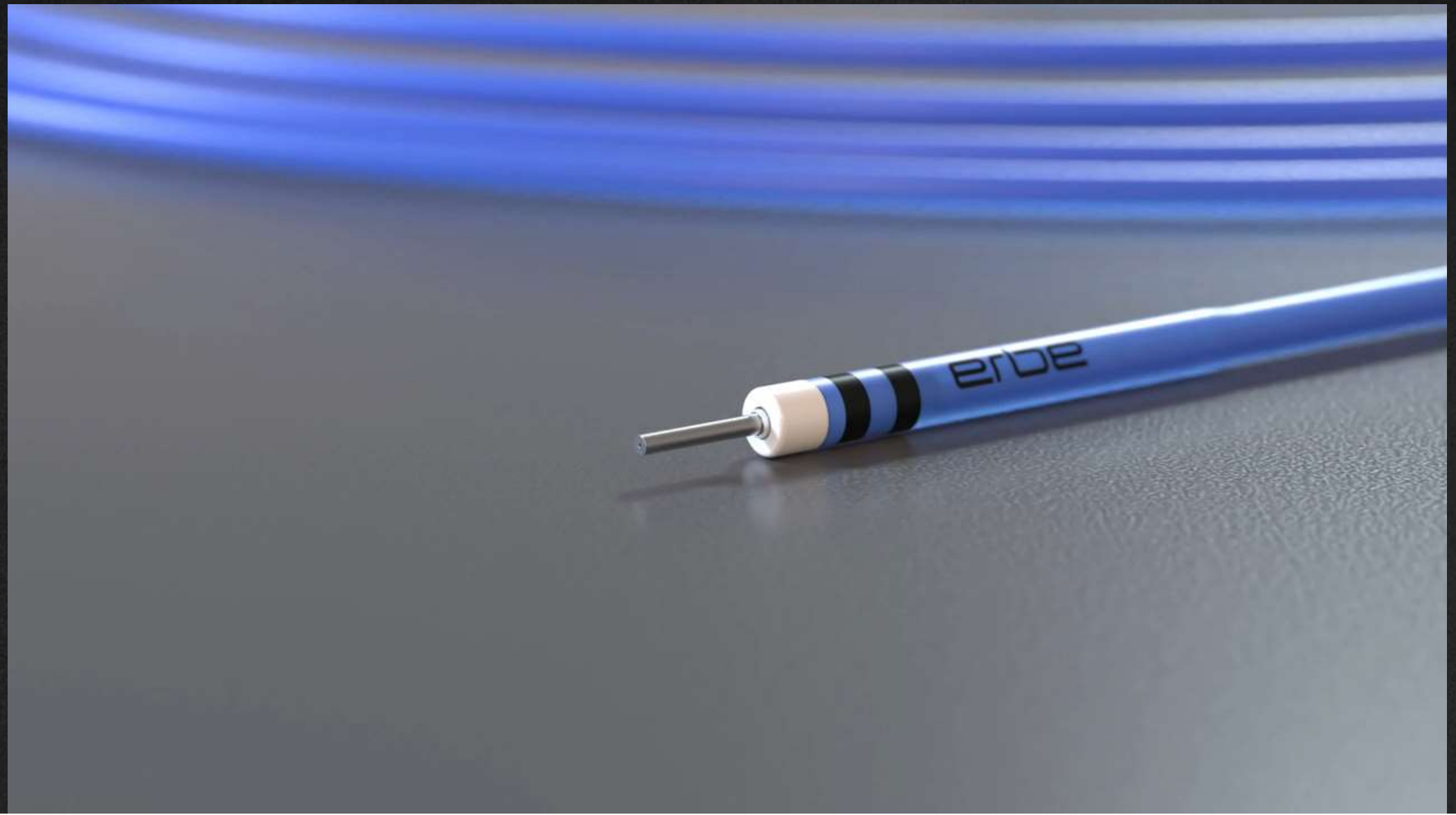
HYBRIDknife® flex

Waterjet settings[1]

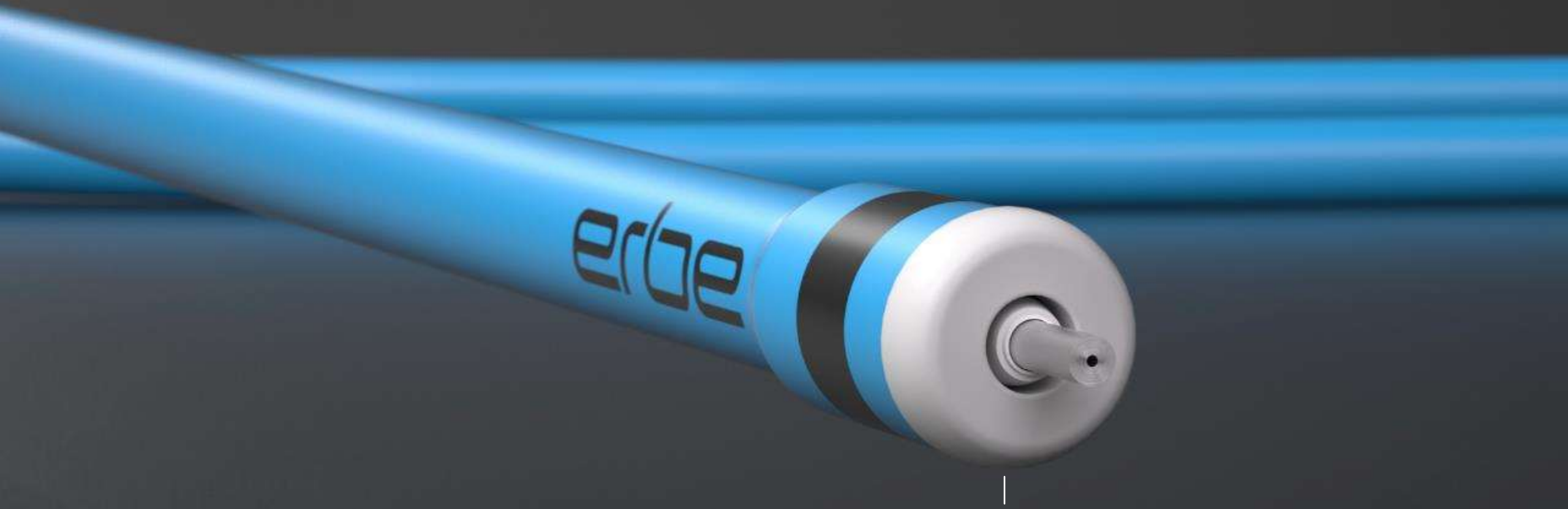
ERBEJET® 2

- Maximum effect of 60
- Always start with the lowest possible setting
- No changes required for existing ERBEJET® 2 effect settings

HYBRIDknife®



HYBRIDknife® flex



Tip design

HYBRIDknife® flex I-type

I-type long

Likely chosen for thicker structures
(e.g. gastric wall)

I-type short

Likely chosen for thinner walled structures
(e.g. esophagus / colon)

HybridKnife®

Distal probe tube

HybridKnife®

- Electrode does not lock
- With two marking rings
- Longer “head”

HYBRIDknife® flex

- More flexible probe shaft
- Shorter electrode
- Thinner electrode
- Electrode locks into place
- Rounded ceramic

HYBRIDknife® flex electrode position

Electrode extended[1]

Electrode locks with a slight resistance and an audible “click” into place.[1]

HYBRIDknife® flex electrode position

Electrode retracted[1]

Electrode locks with a slight resistance and an audible “click” into place.[1]

preciseSECT in 3rd space endoscopy

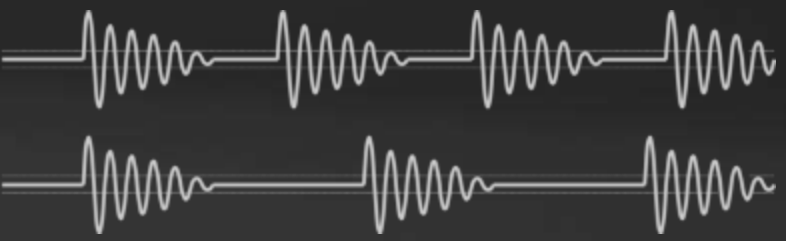
HYBRIDknife® flex

Strengths in 3rd space endoscopy

- Submucosa dissection
- Coagulation of larger vasculature with appropriate technique

Other modes

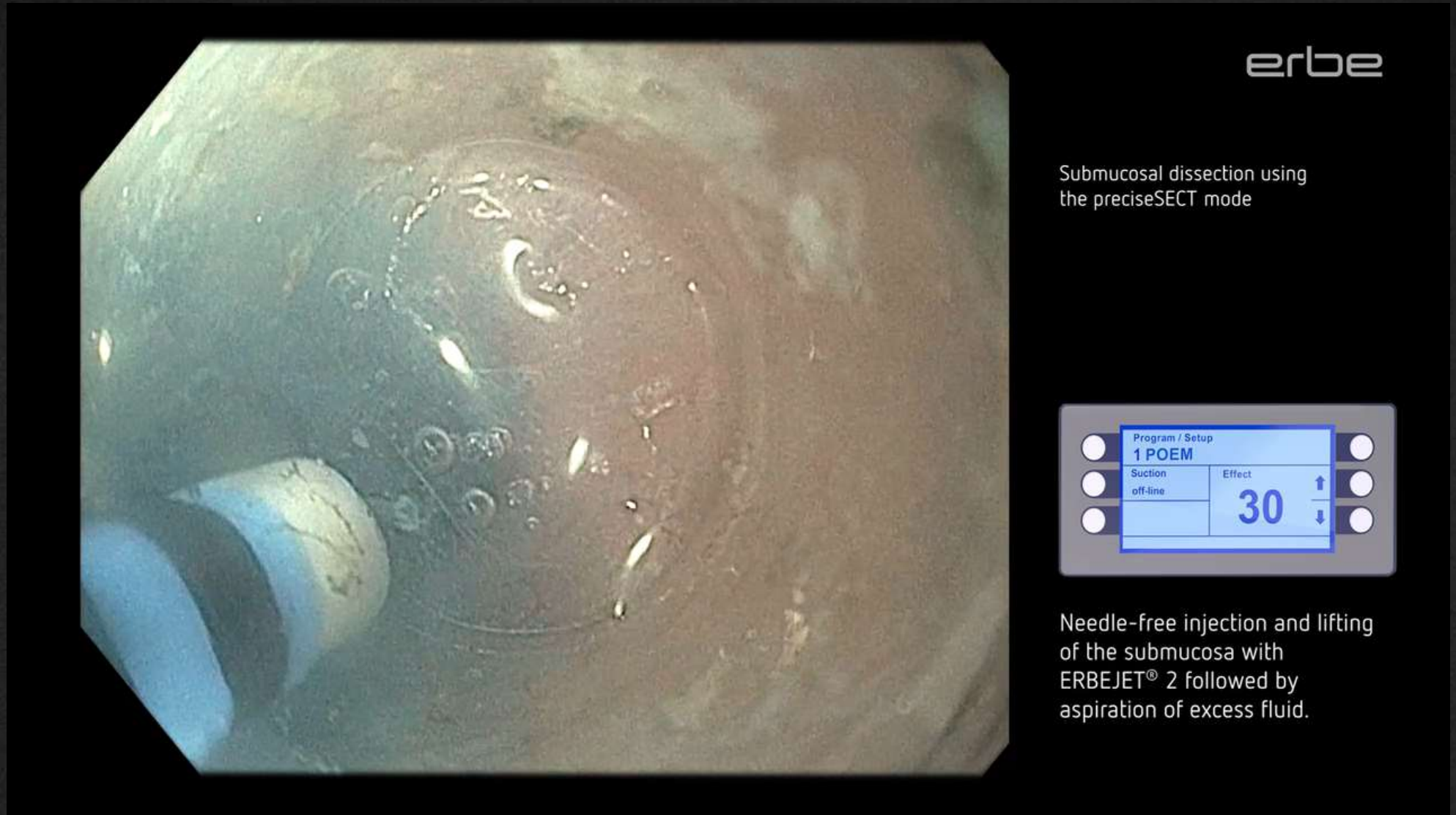
- **endoCUT®**
- **softCOAG**
- **dryCUT**




erbe
erbe

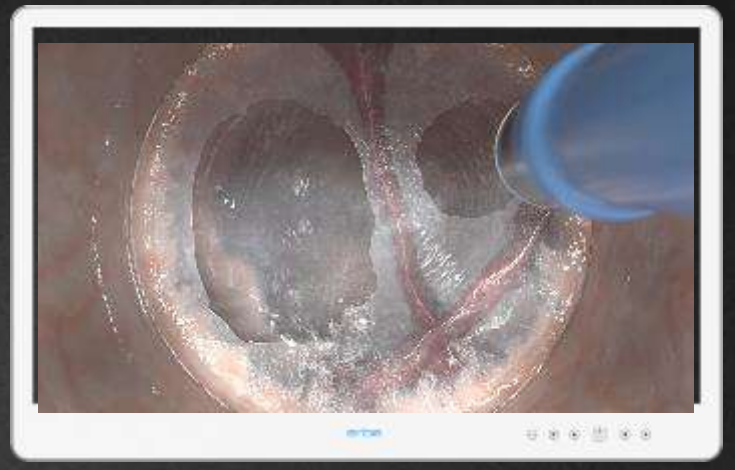
POEM with HybridKnife® using preciseSECT

A peroral myotomy (POEM) with the HybridKnife® I-type using the prendoscopiceciseSECT mode for submucosal dissection



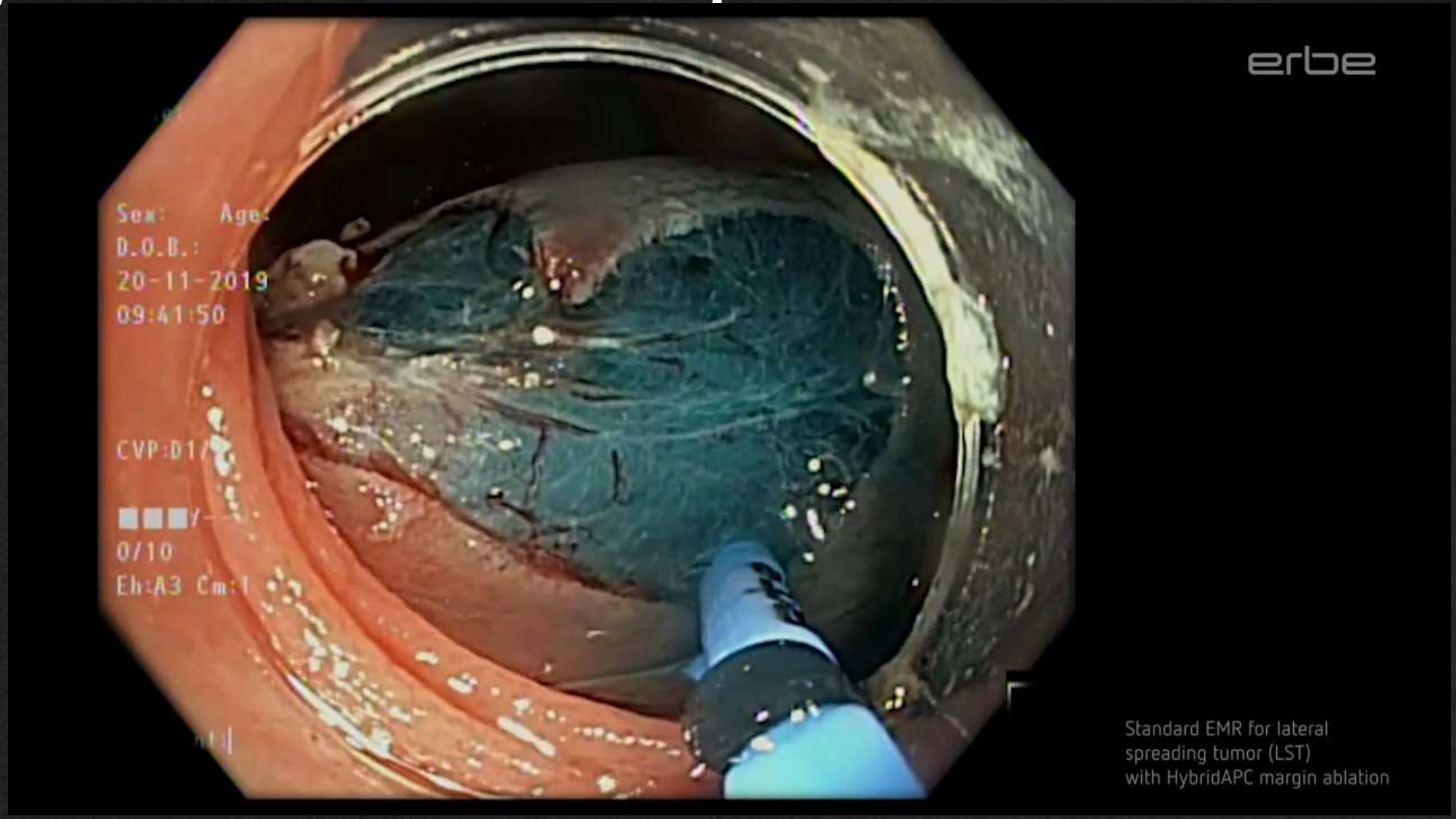
preciseSECT in 3rd space endoscopy

Dissection with dynamic modulation



- Dissection under continuous activation with the tip of the instrument and repeated needle-free injection with ERBEJET®.
- A lower impedance (larger contact surface) enables an effective coagulation of submucosal blood vessels.

EMR for lateral spreading tumors (LST) with HybridAPC margin ablation of 2 cm neoplastic tissue



Opinions and testimonials[1]

Precise instrument guidance

“The T-type electrode allows to stay underneath the muscularis mucosa so that the instrument is fixed in the tissue plane.”

Continuous workflow

“Cutting, coagulation, and high-pressure waterjet combined in the HYBRIDknife® flex electrode tip allows for a continuous workflow.”

High working speed

“The built-in waterjet in the tip of the electrode leads to a higher working speed to perform the procedure.”

Rounded tip

“Rounded ceramic tip leads to a low risk of tissue injury or perforation.”

Good view – site

“The continuous generation of several smaller water cushions compared to an initial large cushion provides a good view of the operation site.”

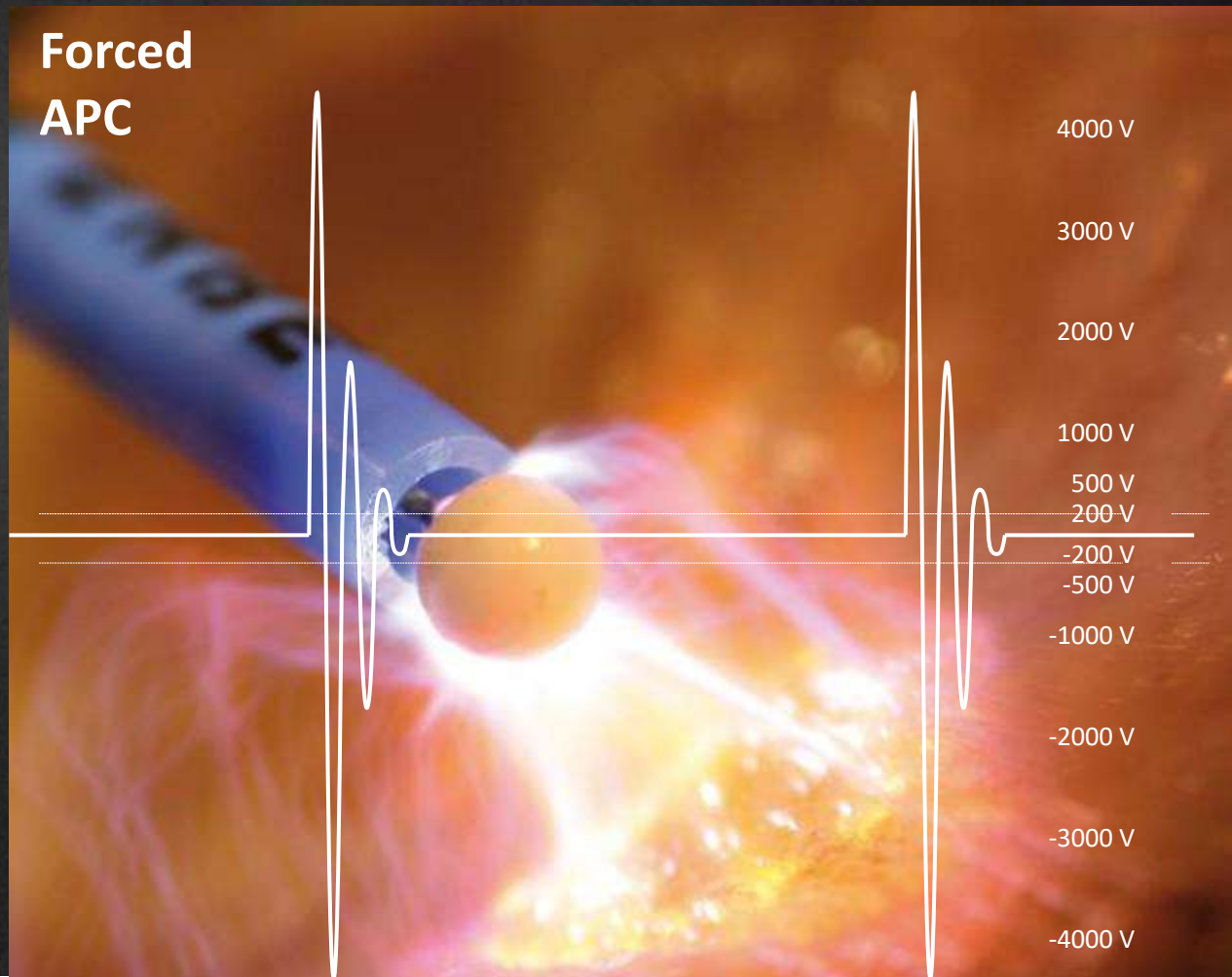
Flexibility

“The new HYBRIDknife flex is much more flexible than the old one. It is really fantastic because it allows complete movements of even a very thin endoscope. It is a great complementary tool to have especially in the rectum and colon and in areas where you need to work in retroflection.”

Argon plasma coagulation APC

Argon gas is ionized using high-voltage (electrically conductive plasma).

Generates longer sparks than “regular” electrosurgical instruments.



Argon plasma coagulation

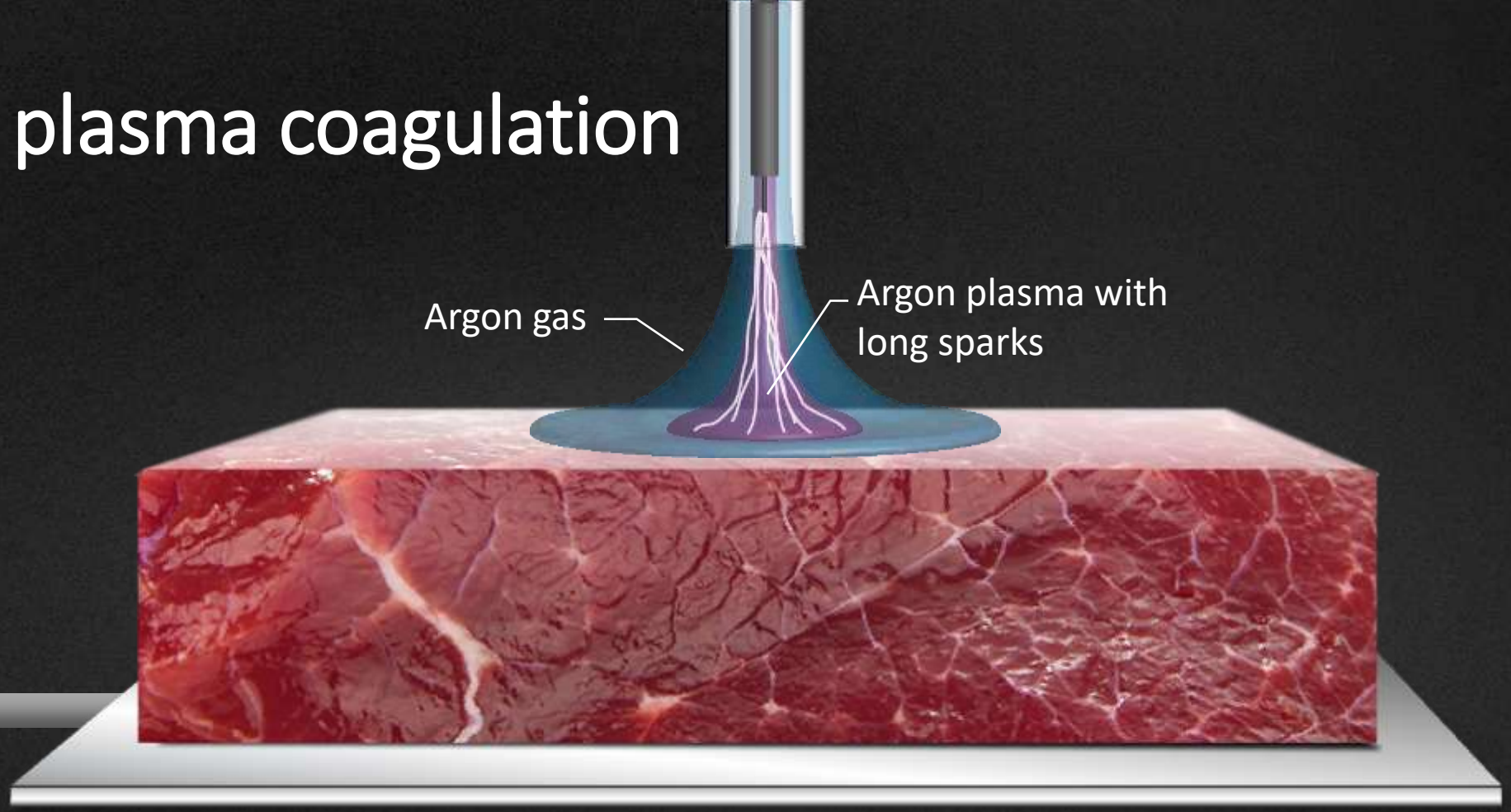


Image source: Erbe Elektromedizin GmbH,

APC Clinical Application

Coagulation of tumors

Coagulation of residual tissue post-polypectomy

Chronic bleeding: Radiation

Chronic bleeding: GAVE

Acute bleeding: Bleeding ulcers

Non-variceal bleeding

Stent ingrowth/overgrowth of tumor tissue

Stent trimming

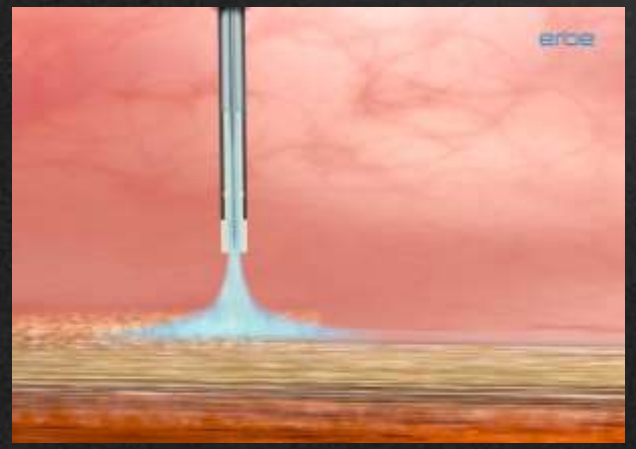
Tumor ablation in the esophagus

Tissue ablation for metal stent ingrowth

APC MODES

Forced APC

Offers effective coagulation and devitalization



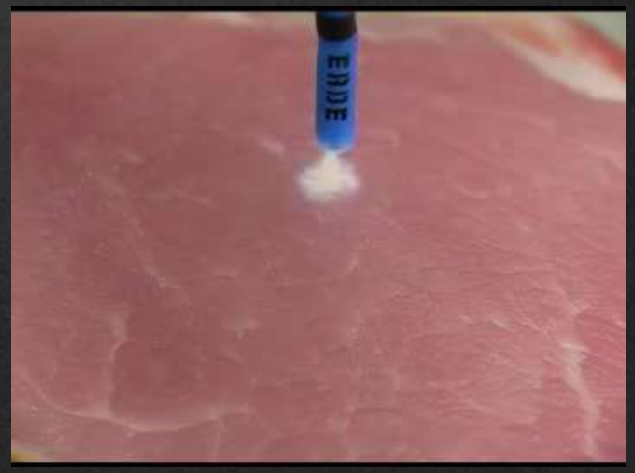
Pulsed APC

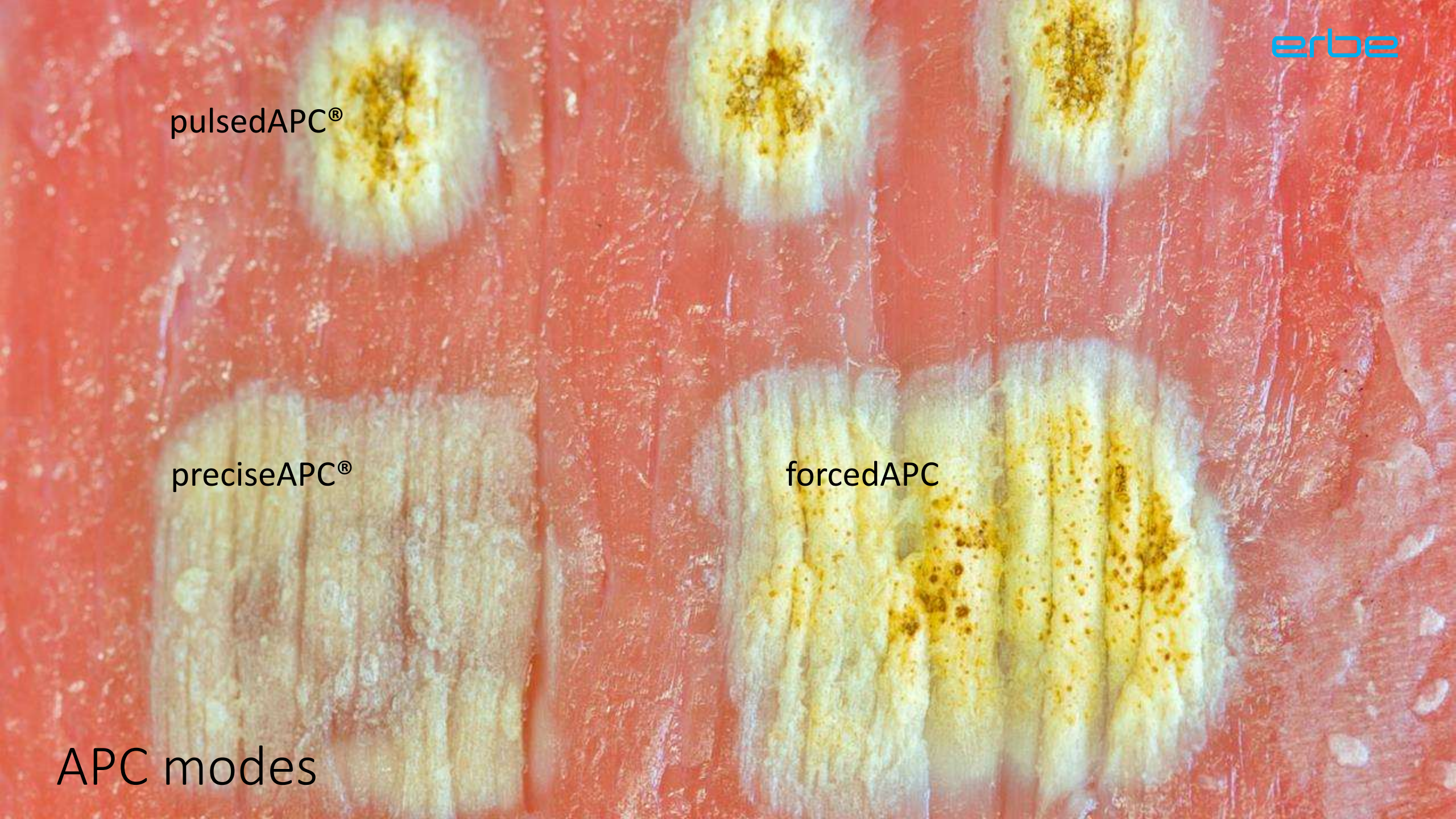
Based on pulsed (on-off) activation

Precise APC

low-energy for sensitive structures

limited penetration.



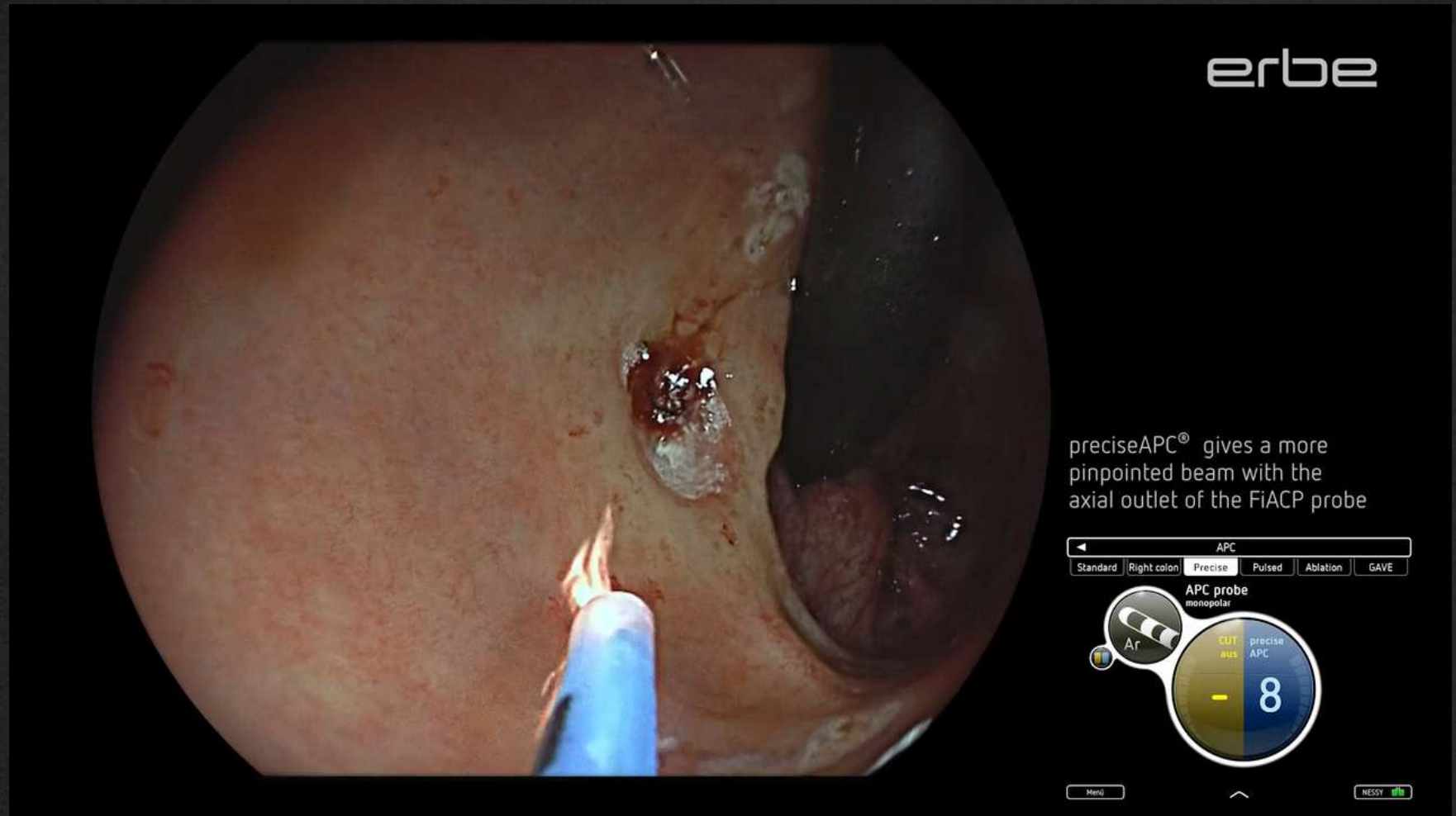


APC modes

APC Probes

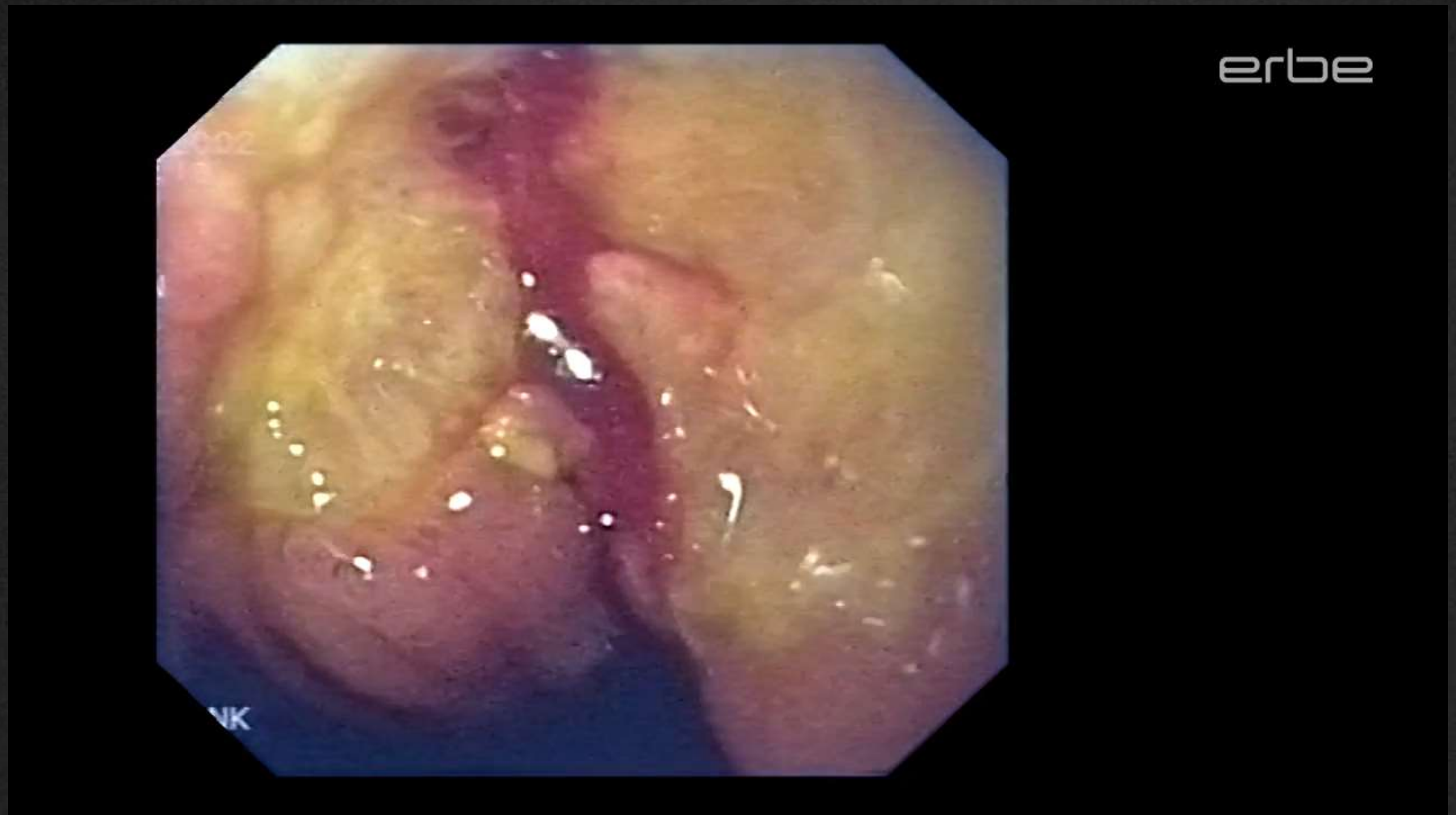
Chronic bleeding: Radiation

Radiation proctitis represents a condition that affects patients even years after radiotherapy for pelvic tumors. Chronic bleeding can lead to anemia, even with need for blood transfusion.
The quality of life is affected by this condition. Argon-Plasma Coagulation (APC) is a possible treatment modality.



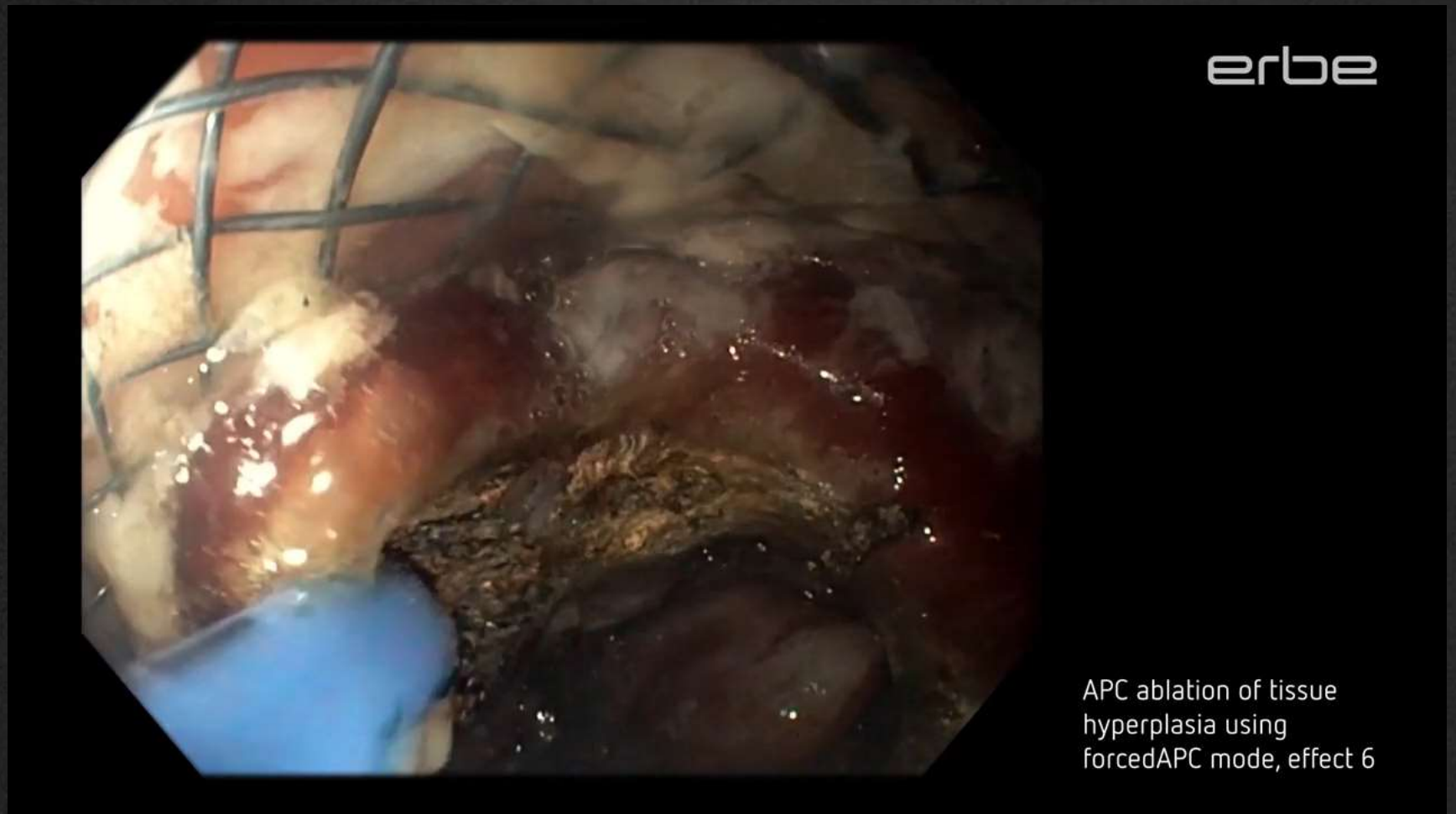
Acute bleeding: Bleeding ulcers

Argon plasma coagulation (APC) treatment of ulcer-bed Forrest 1b bleeding with PULSED APC, Effect 2.



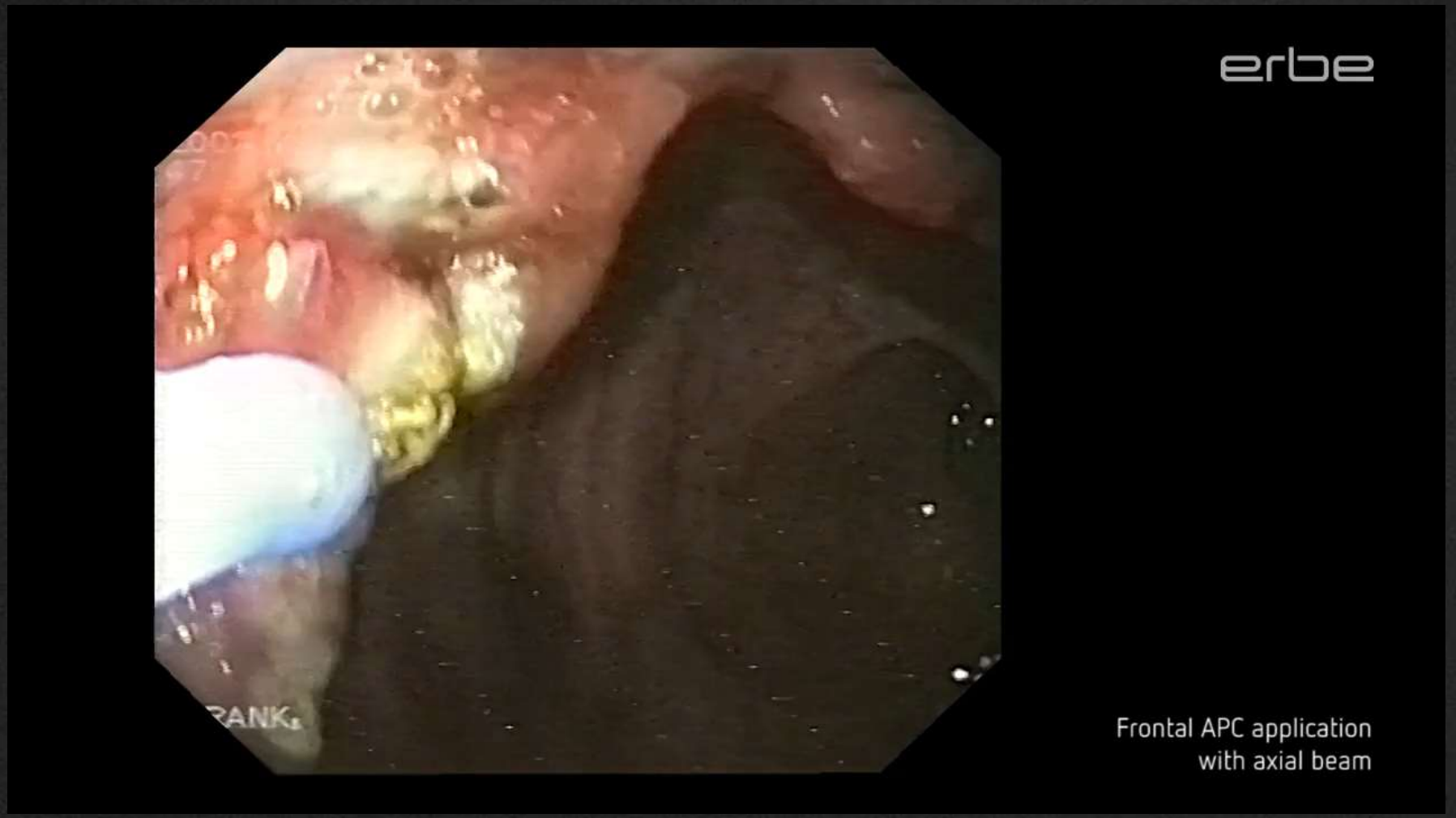
Stent ingrowth/overgrowth of tumor tissue

The fully covered SEMS was easily removed. However, due to severe tissue hyperplasia, the removal of partially covered SEMS failed. Therefore, tissue ablation was performed using APC 3 (forcedAPC, effect 6.0) with an FiAPC® probe. The procedure was effective and the partially covered SEMS was removed.

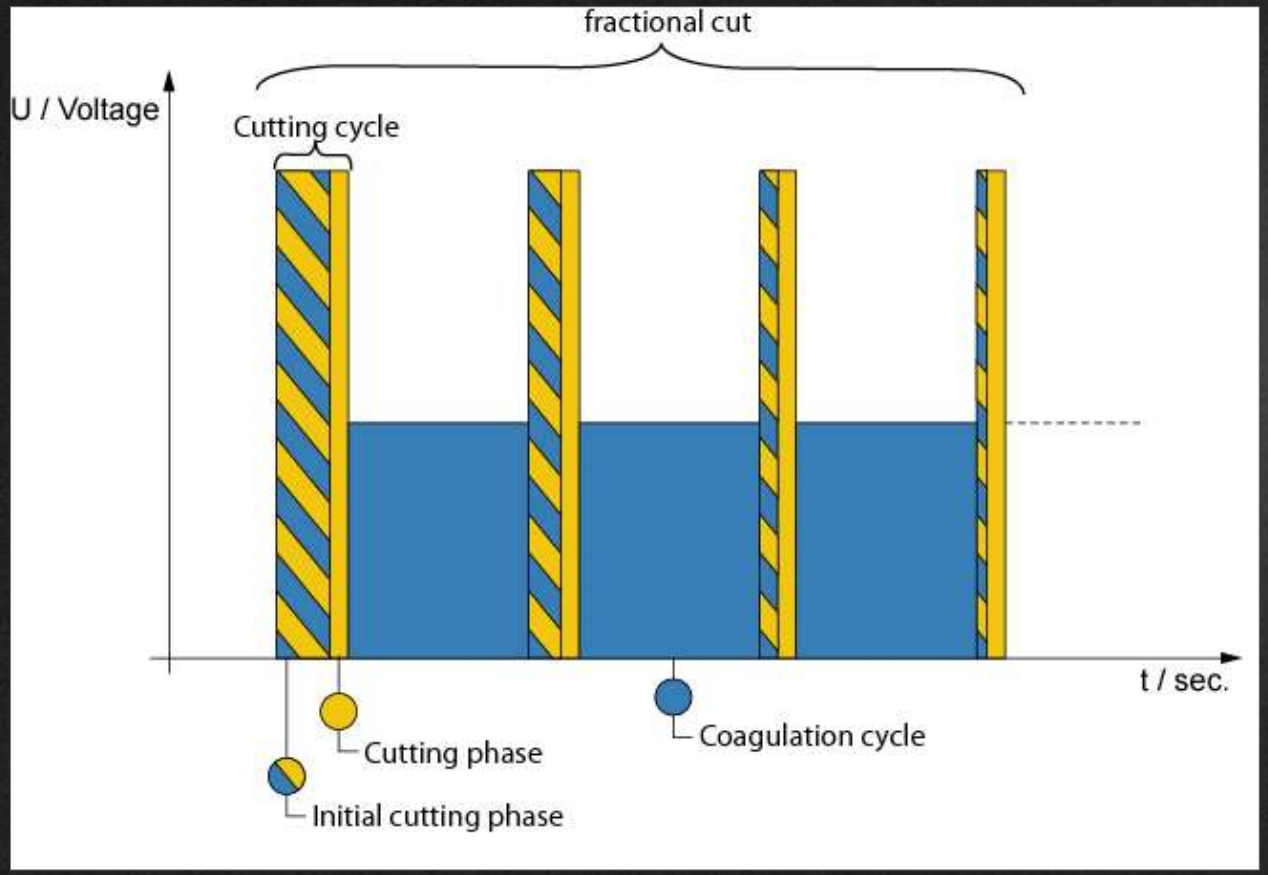


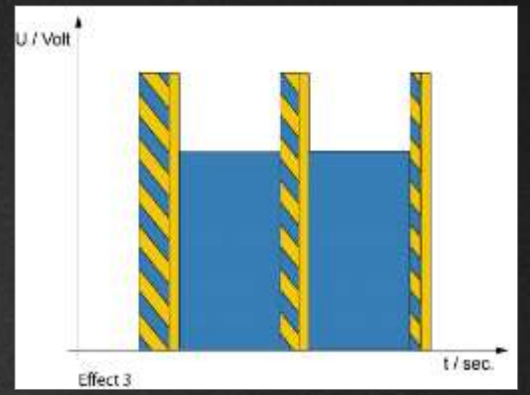
Ablation of colorectal neoplasia using APC 2

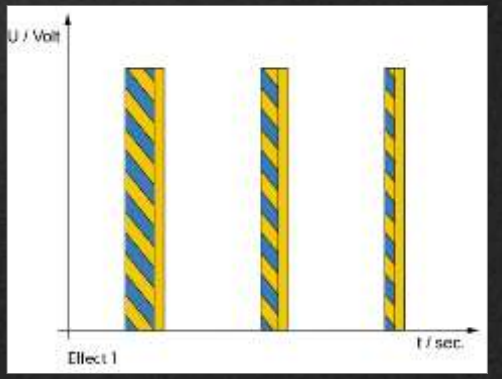
Thermal ablation of colorectal neoplasia with argon plasma coagulation (APC). Performed with the PULSED APC mode of the APC 2 from Erbe. Flexible APC probes with axial and lateral openings are applied.



ENDO CUT IQ


fractional cut
U / Voltage
Cutting cycle
t / sec.
Cutting phase
Initial cutting phase
Coagulation cycle

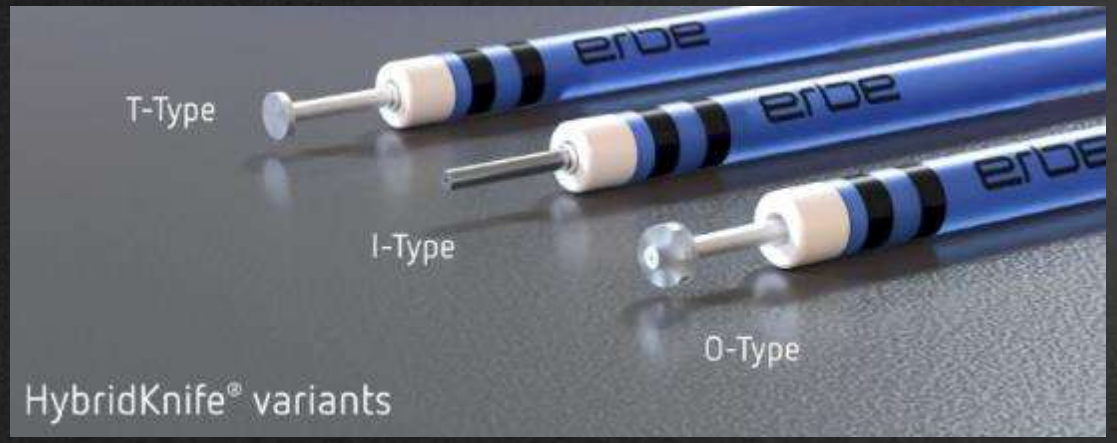

U / Volt
t / sec.
Effect 3


U / Volt
t / sec.
Effect 1

Gastroenterology workstation:

- **Electrosurgical unit VIO 3**
- **APC 3 for argon plasma coagulation**
- **Hydrosurgery unit ERBEJET 2**
- **Endoscopic irrigation pump EIP 2**

Gastroenterology workstation:

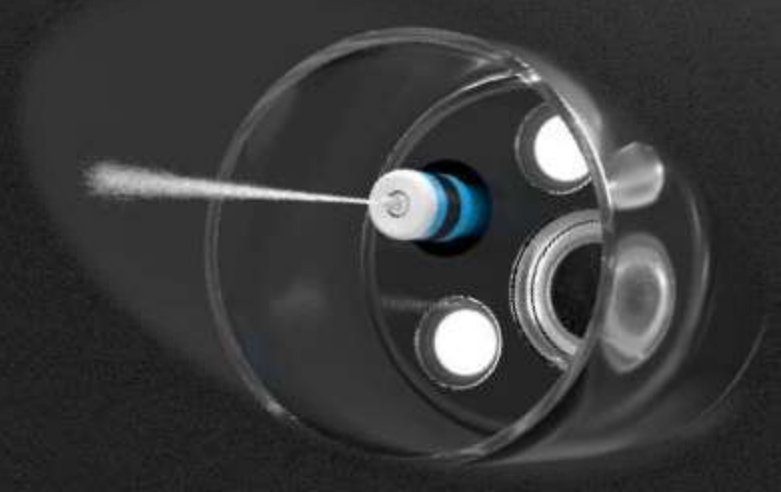


Instruments for hybrid techniques, APC, and waterjet elevation:

- HYBRIDknife® flex
- HybridKnife, T-Type, I-Jet
- HybridKnife, I-Type, I-Jet
- HybridKnife, O-Type, I-Jet
- HybridAPC
- Flexible APC probe

This is how Erbe does it!

- High-pressure
- Low volume



This is how others do it!

Low pressure
High volume

Compatibility

Notes on use HYBRIDknife® flex

Intended to be used with[1]

- Flexible endoscopes with working channel ≥ 2.8 mm
- VIO® 3
- VIO® 300 D
- VIO® 200 D
- VIO® 300 S
- VIO® 200 S
- APC2 Or APC3
- ERBEJET® 2
  - Pump cartridge plus
  - Pump cartridge

max. 4500 Vp

How can ERBE & Medical Power support you?

THANK YOU FOR YOUR ATTENTION

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