Esophageal stenting for benign and malignant disease: European Society of Gastrointestinal Endoscopy (ESGE) Guideline –Update 2021.

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Introduction

- Esophageal cancer – 7th most common cancer
- Goal of palliative treatment

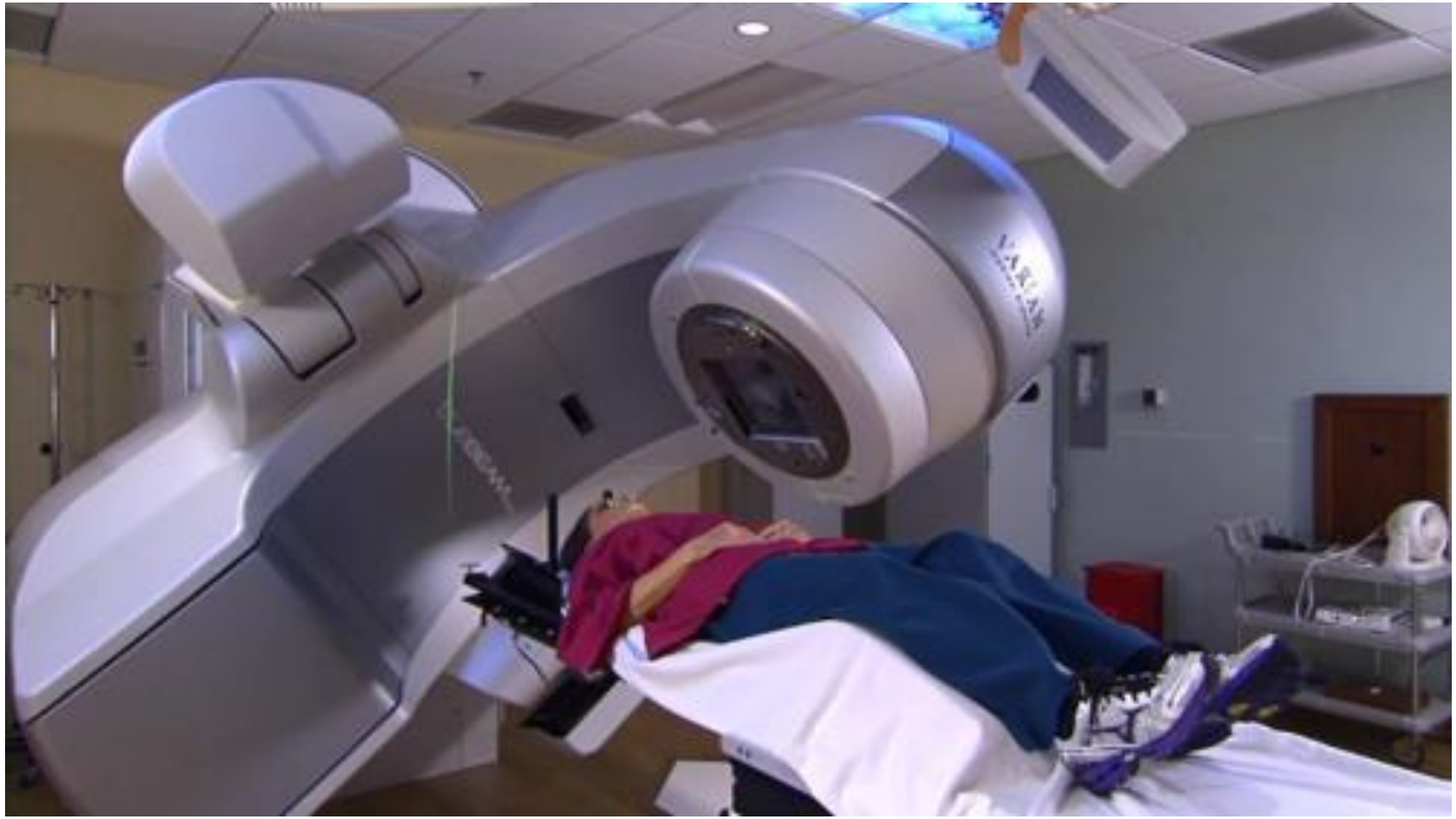
1) Relieve dysphagia
2) Improve nutritional intake

⇒EBRT (external beam radiation therapy)

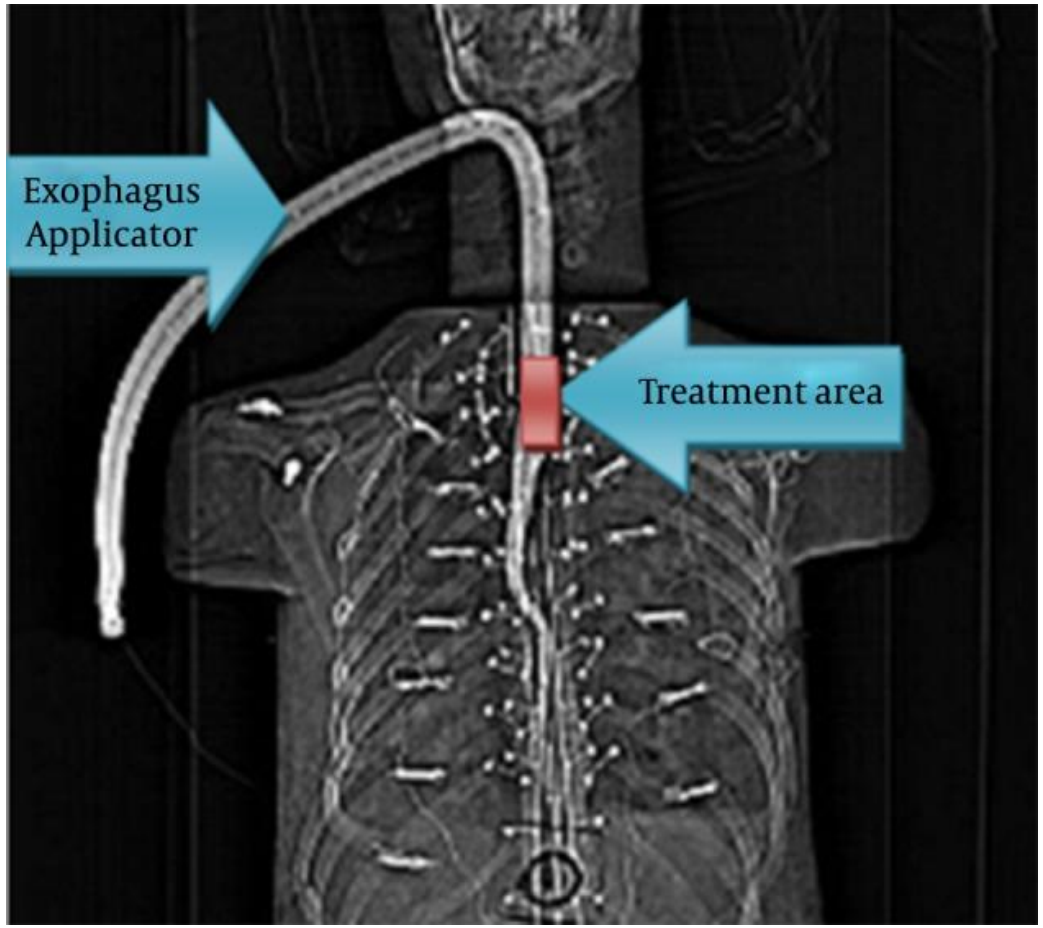
⇒Brachytherapy

⇒Esophageal stent placement

External-beam radiation therapy (EBRT)



Brachytherapy



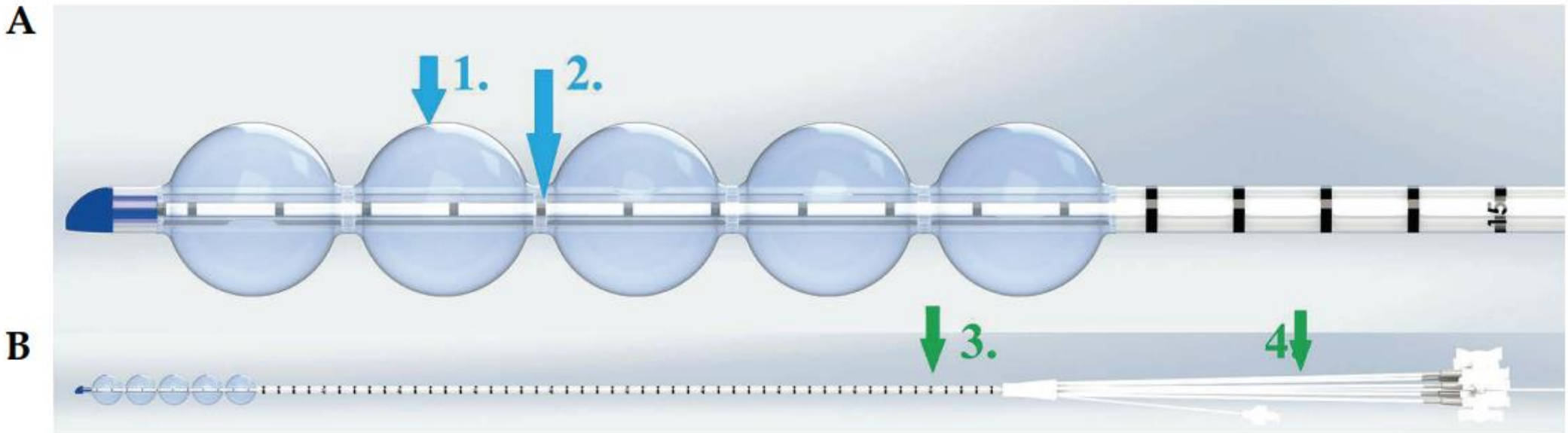
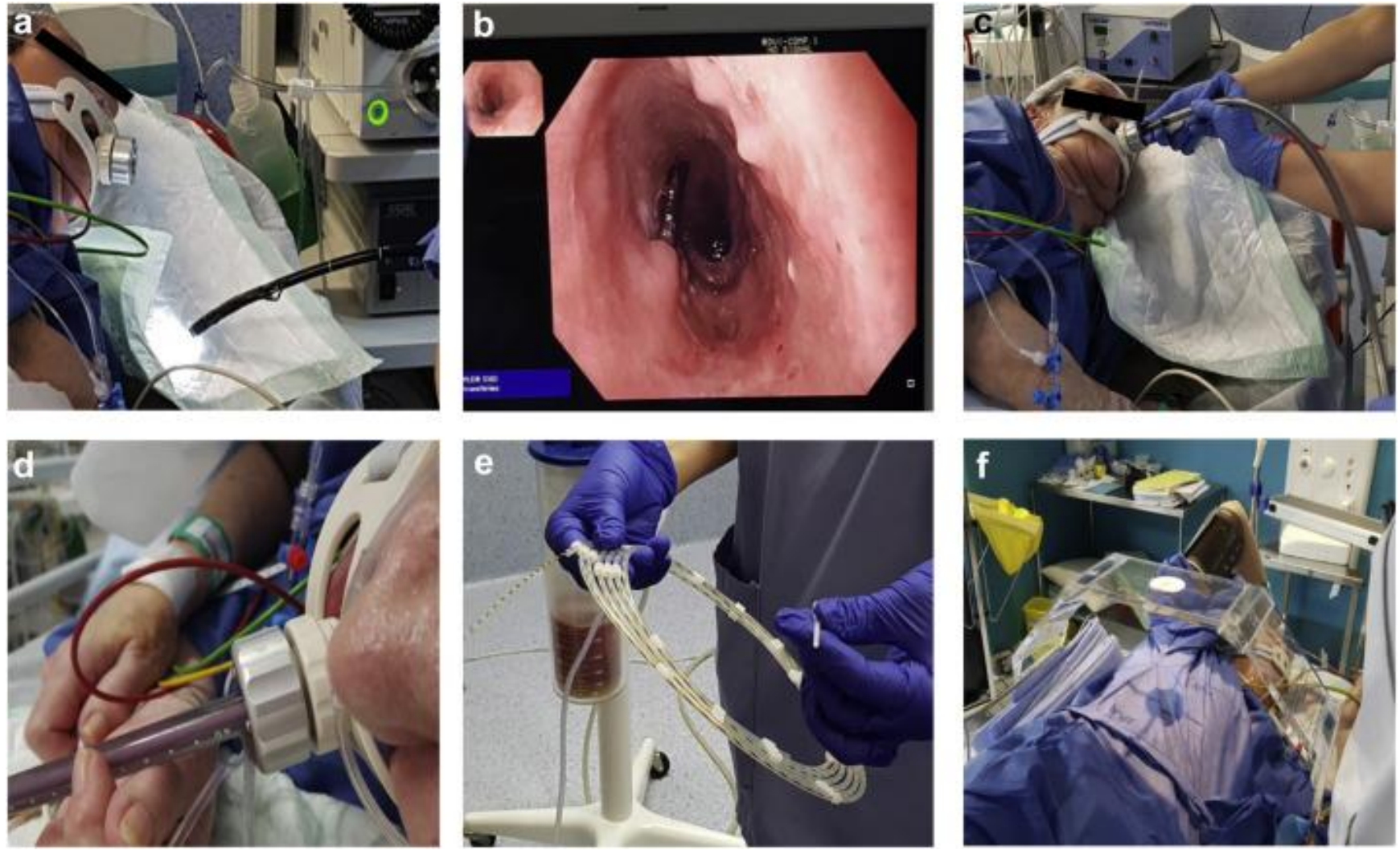


Fig. 1. Transoral balloon centering esophageal applicator. **A**) Five inflatable balloons (1) allow for reproducibility of the treatment setup. Radio-opaque contrast markers are visible on computed tomography and magnetic resonance images (2); **B**) Full view – a catheter (3) and the inflatable ports (4). Image supplied by Ancer Medical (Hialeah, FL, USA)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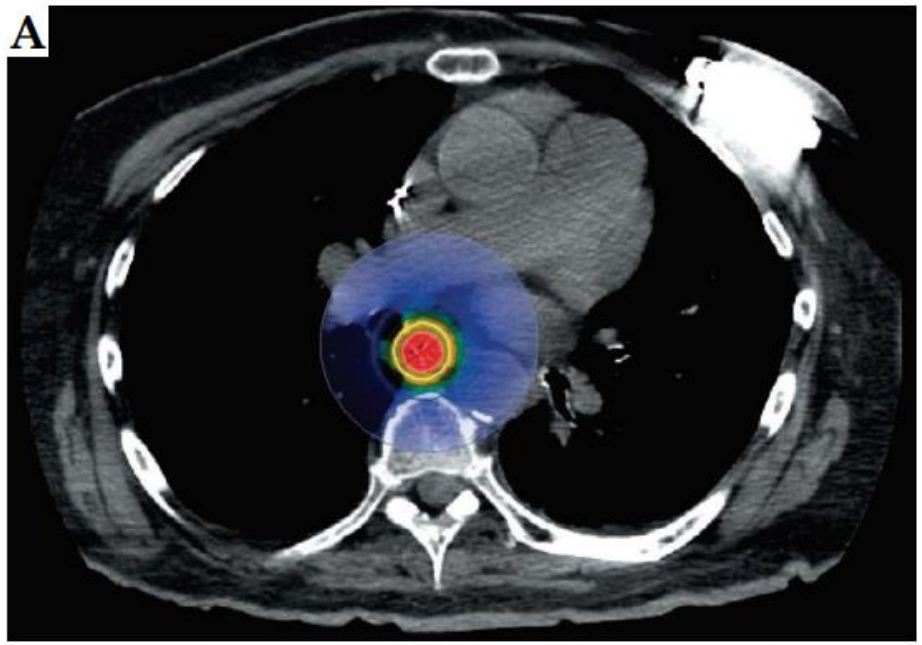


Fig. 5. A) Axial and **B**) sagittal images show the optimized dose distribution. The centrally placed catheter inside the esophagus lumen resulted in enhanced dose distribution and reproducibility in multi fractional treatment

- Esophageal stent – preferable in patients with an expected short-term survival (rapid relief of dysphagia)

- Stent design

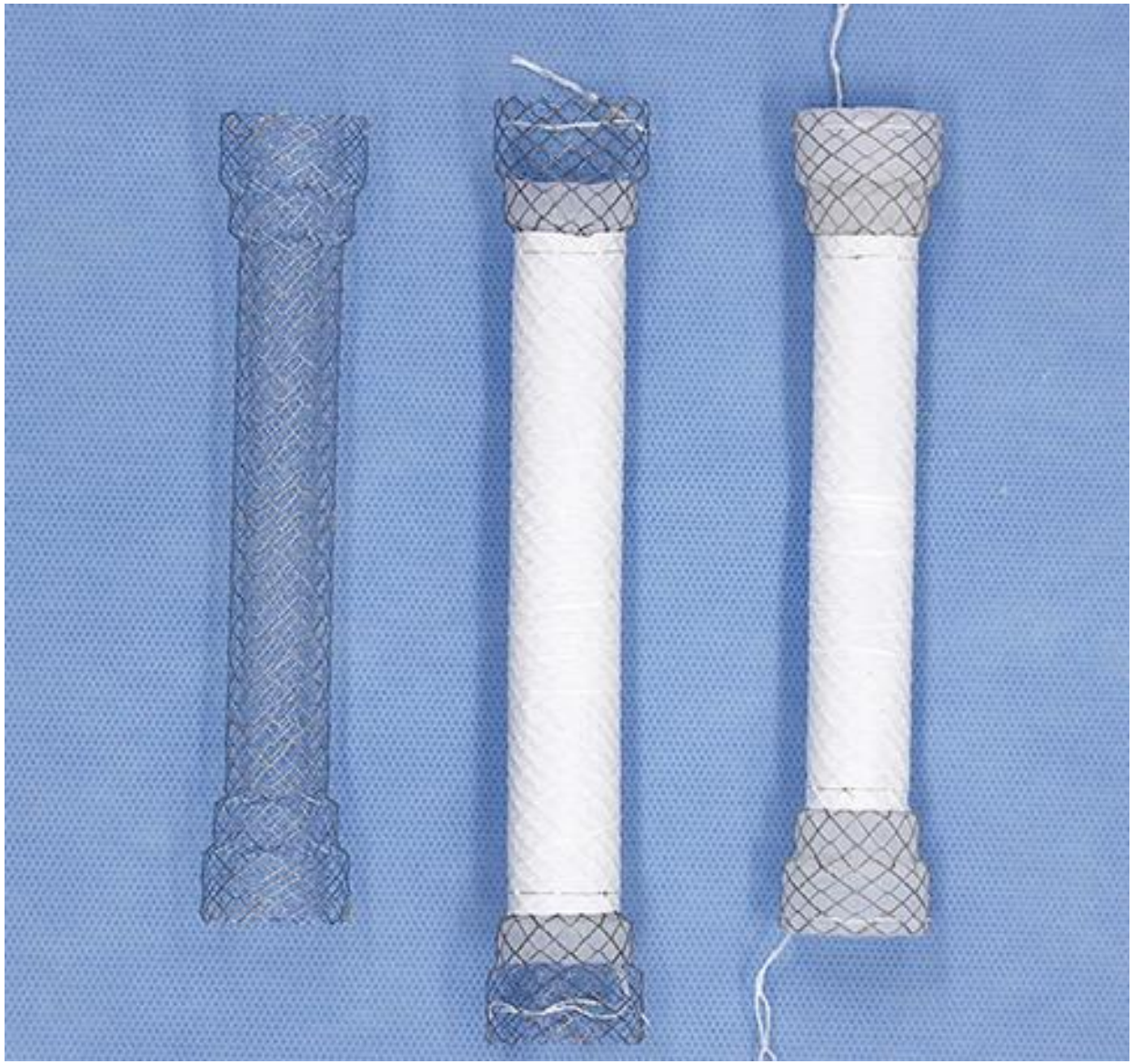
1) Stent material (plastic, metal)
2) Covering
3) Diameter
4) Antimigration feature

• PCSEMSs(partially covered self-expandable metal stents)

And

FCSEMSs(fully covered self-expandable metal stents)

⇒Most often used



PCSEMS FCSEMS

- Esophageal stent can be used for benign esophageal disease
- Stents are removed after several weeks
- FCSEMS – mostly used
- BDSs(biodegradable stents) – obviating the need for stent removal

BDS (biodegradable stent)

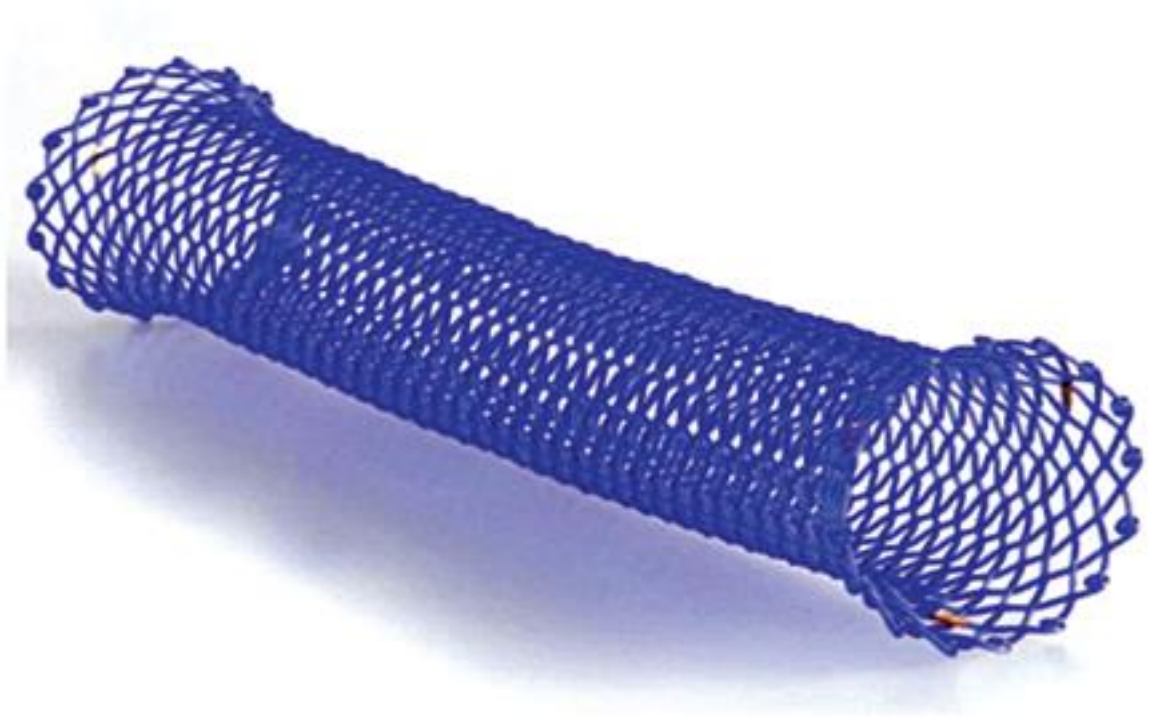


Figure 3. Polydioxanone biodegradable stent

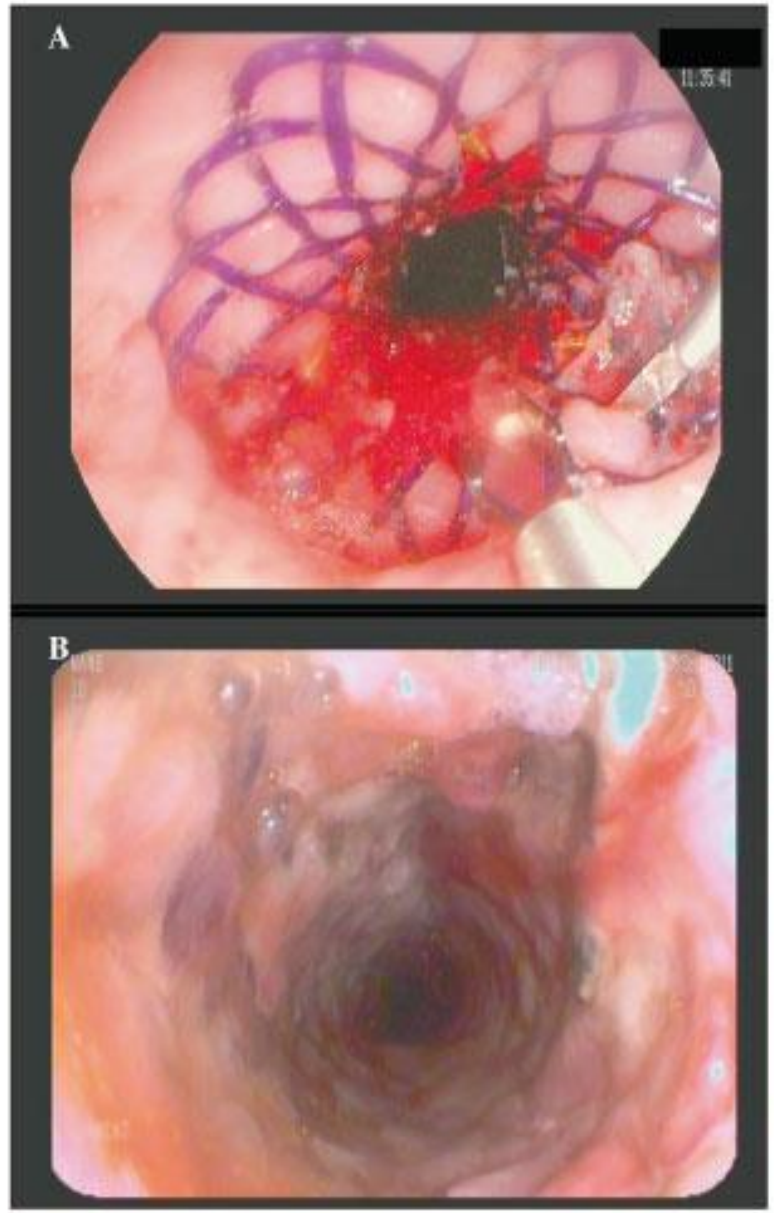


Fig. 4. A. Biodegradable stent placed with two endoscopic clips (QuickClip®, Olympus Medical, Japan) attached to the proximal end. B. Epithelial hyperplasia after reabsorption of the BDS (12 weeks after placement).

Malignant disorder -Efficacy

Recommendation 1)

placement of partially or fully covered SEMSs

for palliation of malignant dysphagia over laser therapy, photodynamic therapy, and esophageal bypass.

Recommendation 2)

brachytherapy as a valid alternative,

alone or in addition to stenting, in esophageal cancer patients with malignant dysphagia and expected longer life expectancy.

Malignant disorder –Efficacy

Recommendation 3)

patient characteristics be taken into account when selecting patients for esophageal stent placement as a palliative method.

Recommendation 4)

against the placement of nonexpendable and expandable plastic stents for the palliation of malignant esophageal strictures.

The Glasgow prognostic score at the time of palliative esophageal stent insertion is a predictive factor of 30-day mortality and overall survival

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CONFLICTS OF INTEREST AND SOURCE OF FUNDING

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- **The Glasgow prognostic score at the time of palliative esophageal stent insertion is a predictive factor of 30-day mortality and overall survival**
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Glasgow Prognostic Score (GPS) for Cancer Outcomes ☆

Provides cancer prognosis based on serum biomarkers.

INSTRUCTIONS

Note: We recommend the Modified Glasgow Prognostic Score over this original version.

When to Use ⌄ | Pearls/Pitfalls ⌄ | Why Use ⌄

CRP	CRP ≤10 mg/L
	CRP >10 mg/L
Albumin	**Albumin <3.5 g/dL (35 g/L)**
	Albumin ≥3.5 g/dL (35 g/L)

GPS 2

Poor Prognosis

Copy Results | Next Steps »»

Malignant disorder –Safety

Major adverse event
: FCSEMSs – 21% vs. PCSEMSs – 18%

Early adverse event	Late adverse event
Reflux (9.3%) Severe pain (8.7%) Bleeding (7.6%)	Reflux (15%) Severe pain (15%) Ingrowth/overgrowth (14%)

-> increased in stent-rlated adverse events
: increased use of CTx and/or radiotherapy before stent
Female
dilation before SEMS placement

Malignant disorder – fistula

Recommendation 1)

esophageal SEMS placement for sealing malignant tracheoesophageal or bronchoesophageal fistulas.

Recommendation 2)

the application of double stenting (esophagus and airway) when fistula occlusion is not achieved by esophageal or airway prosthesis placement alone.

Malignant disorder – fistula

- Factor associated with treatment failure of Stent insertion

-> proximal fistula location

-> fistula orifice size >1cm

-> ECOG performance status 3~4

Malignant disorder – fistula

- Reopening

: 0~39%

-> reposition

-> additional SEMS

Malignant disorder – fistula

- Esophageal SEMS + Airway stenting

=> To improve the success rate and prevent airway obstruction

Malignant disorder – Bridge to surgery

Recommendation 1)

- not recommend SEMS placement as a bridge to surgery or before preoperative chemoradiotherapy

=> because it is associated with a high incidence of adverse events. Other options such as feeding tube placement are preferable.

Malignant disorder – combined approach

Recommendation 1)

not recommend the concurrent use of radiotherapy

if an esophageal stent is present.

Recommendation 2)

SEMS placement with concurrent single-dose brachytherapy is safe and effective for relief of dysphagia.

Malignant disorder – Prior palliative therapy

- the association between prior palliative therapy and stent-related adverse events remains controversial.

Benign disease - Refractory benign esophageal strictures

Recommendation 1)

against the use of SEMSs as first-line therapy for the management of benign esophageal strictures

-> because of the potential for adverse events, the availability of alternative therapies, and their cost.

Recommendation 2)

suggests consideration of temporary placement of self-expandable stents for refractory benign esophageal strictures.

Benign disease - Refractory benign esophageal strictures

- Refractory or recurrent

-> defined by kochman et al.

1) fail to reach a target diameter of 14 mm
after biweekly dilations over 5weeks

2) fail to maintain the target diameter
up to 4 weeks after the last dilation

Benign disease - Refractory benign esophageal strictures

- -> Esophagaeal stent placement

second line approach

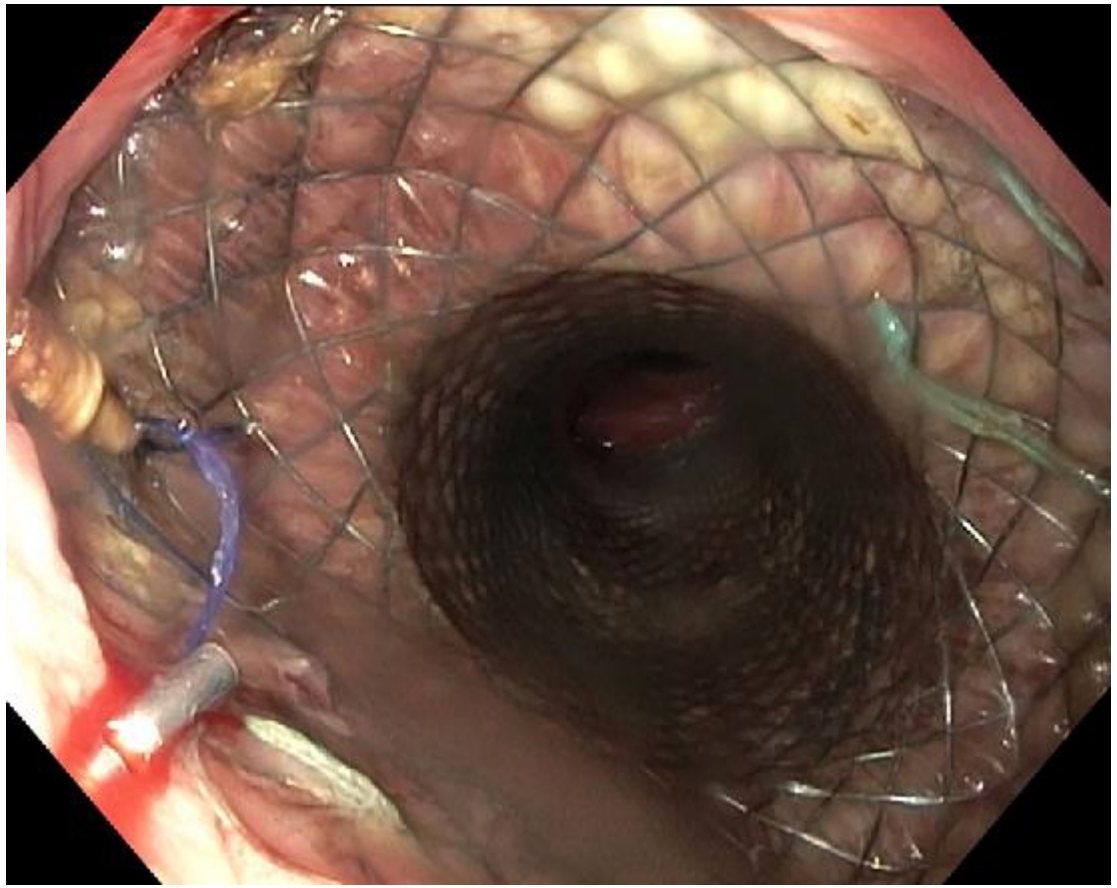
(adverse events and its cost)

Benign disease - Refractory benign esophageal strictures

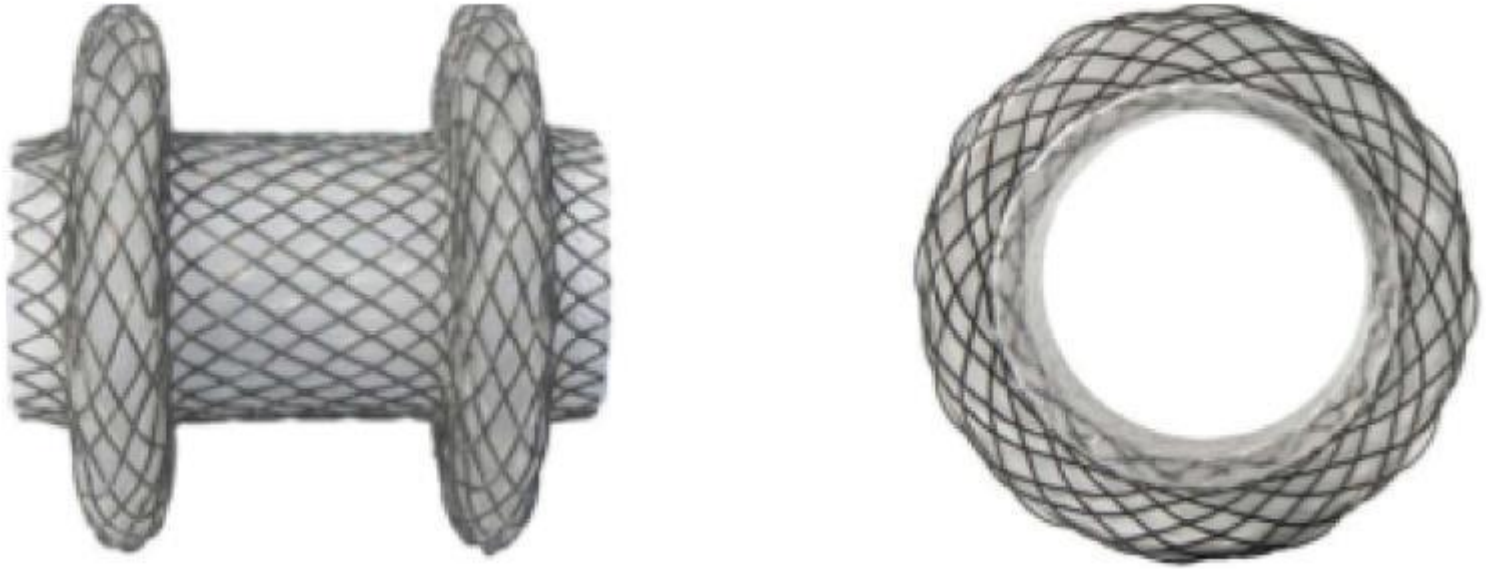
Recommendation 3)

suggests that fully covered SEMS fixation by endoscopic suturing or over-the-scope clips be considered in patients with previous stent migration.

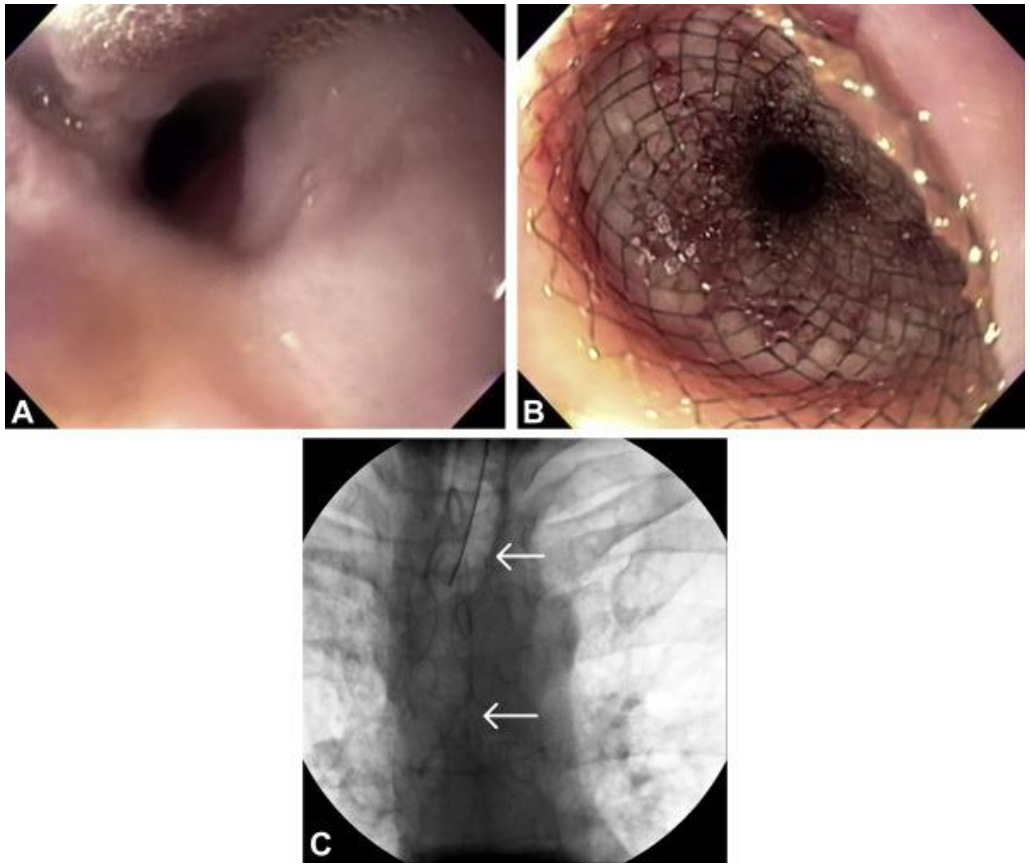
Endoscopic suturing following a FCSEMS



LAMSs (lumen apposing metal stent)



LAMSs (lumen apposing metal stent)



Benign disease - Factors predicting successful treatment

Recommendation 1)

not recommend permanent stent placement for refractory benign esophageal stricture; stents should usually be removed at a maximum of 3 months following insertion.

Recommendation 2)

fully covered SEMSs be preferred over partially covered SEMSs for the treatment of refractory benign esophageal strictures

-> because of their very low risk of embedment and ease of removability.

Recommendation 3)

not recommend the use of biodegradable stents over SEMSs in the treatment of benign esophageal strictures.

Recommendation 4)

the stent-in-stent technique to remove partially covered SEMSs that are embedded in the esophageal wall.

Combined approach

Recommendation)

a combined approach of stent placement with additional techniques (e. g. corticosteroid injection, chemotherapeutic topical application) should not be undertaken in an attempt to improve the long term benefit of temporary stenting.

Options after stent failure

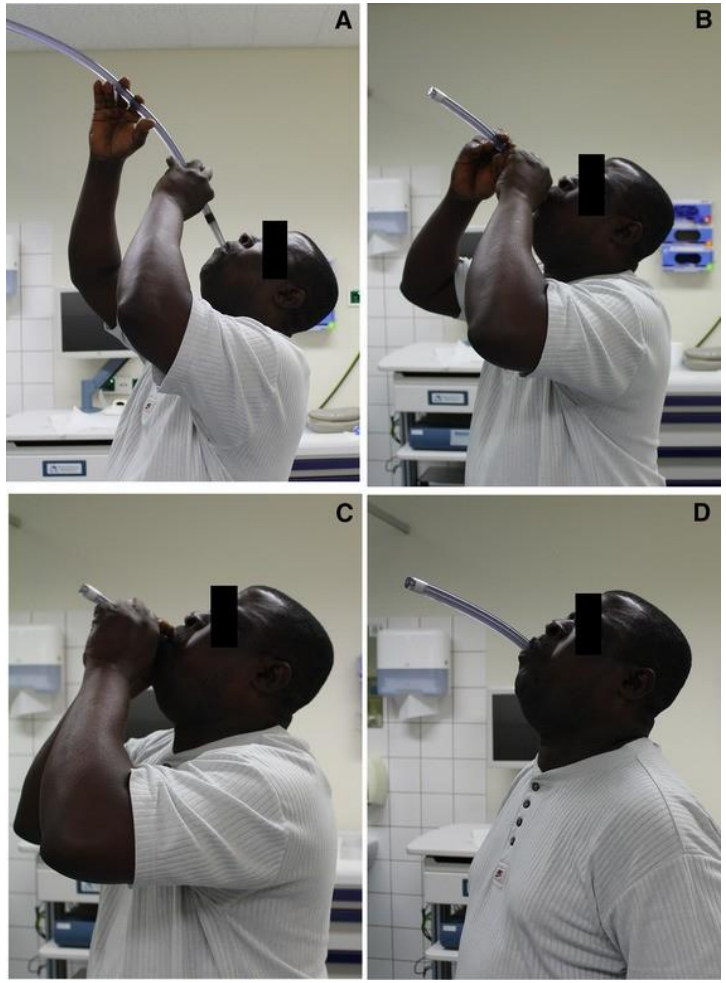
Recommendation 1)

alternative treatment strategies such as self-dilation or surgical treatment for patients with refractory benign esophageal strictures that have not satisfactorily improved after two separate treatments with temporary stenting.

Recommendation 2)

In poor surgical candidates, ESGE recommends self dilation with rigid dilators.

Self dilation



Leaks, fistulas, and perforations

Recommendation 1)

temporary stent placement can be considered for the treatment of leaks, fistulas, and perforations.

No specific type of stent can be recommended, and the duration of stenting should be individualized.

Leaks, fistulas, and perforations

Recommendation 2)

esophageal stents be placed as early as possible for the treatment of leaks, fistulas, and perforations.

Recommendation 3)

including stent placement in a multimodality treatment protocol for leaks, fistulas, and perforations to optimize the healing success rate and minimize the risk of adverse events.

Safety

- Stent migration – most common stent related adverse relate
- FSCEMS (26%) vs SEPS (31%)

Acute variceal bleeding

- considering placement of a fully covered large-diameter SEMS for the treatment of esophageal variceal bleeding refractory to medical, endoscopic, and/or radiological therapy, or as initial therapy for patients with massive bleeding.

Acute variceal bleeding