

# Endoscopic Ultrasound-Guided Biliary Drainage (EUS-BD) for malignant biliary obstruction after failed endoscopic retrograde cholangiography (ERC) in patients with surgically altered anatomy

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## Introduction

ERC, the gold standard for malignant biliary stenoses, can fail in case of surgically altered anatomy. There is little data on the efficacy & safety of EUS-BD as an alternative procedure in this constellation. These aspects are examined in this study. In addition, parameters are to be detected that allow statements to be made about post-interventional survival in order to enable individualized treatment planning.

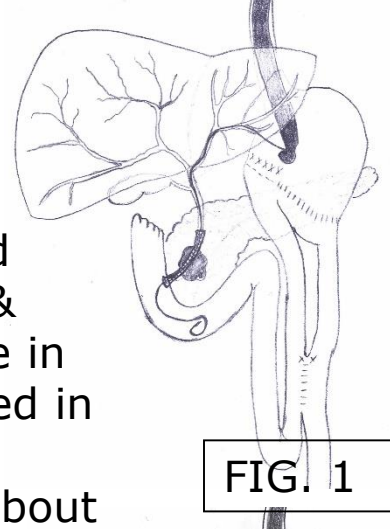


FIG. 1

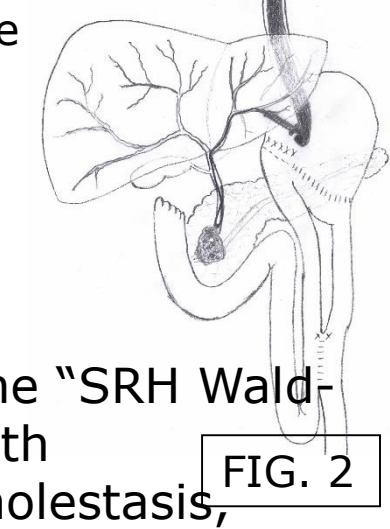


FIG. 2

### Interventional procedure:

- Peri-interventional antibiotic prophylaxis (according to the guidelines)
- Puncture with 19-G needle (see FIG. 3)
- Aspiration of bile, cholangiography
- Wire insertion "0.035"
- Conditioning of access route using ring knife
- Attempt to overcome stenosis with wire - if successful: **antegrade drainage** (= anatomically correct) (see FIGs. 1 & 4)
- Stenosis cannot be overcome: **retrograde drainage** (= extra-anatomical) (see FIGs. 2; 5)

**Calculations:** Using Windows program Excel

## Material and methods

### Inclusion criteria:

- Patients who underwent EUS-BD at the "SRH Wald-Klinikum" of Gera from 2005-2020 with
- Laboratory &/or ultrasound-proven cholestasis,
- Malignant bile duct stenosis &
- Papilla of Vater not accessible via ERCP after surgery.

-> **n = 118** cases enrolled (71 males, 47 females)

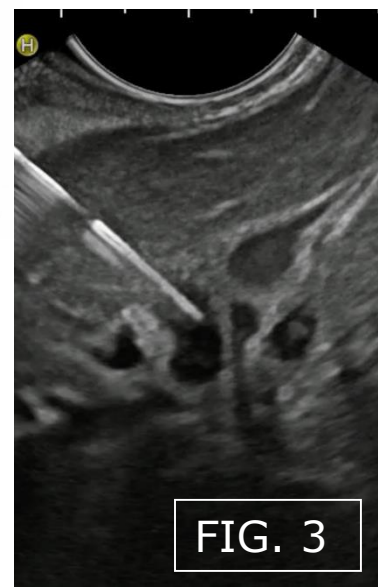


FIG. 3



FIG. 4

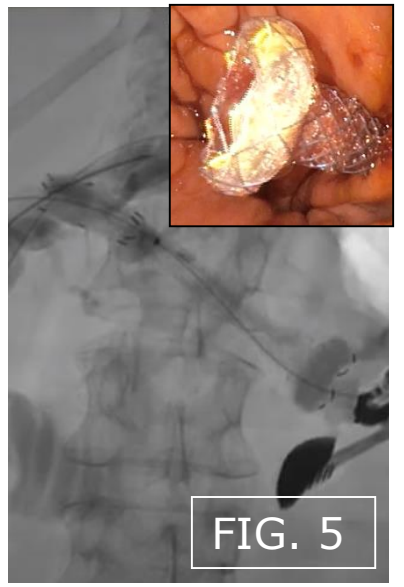


FIG. 5

## Results

**Technical success: n=109/118 (92.4 %)**

(Access routes used see FIG. 7)

**Clinical success: n=102/109 (94.4 % of technical success)**

**Complications: n=23/118 (19.5 %)** (see FIG.6)

**Reinterventions: In total, n=33/118 (28.0 %)**

**Median postinterventional survival: 85 days**

Significantly **increased complication rate** in:

- Patients undergoing **chemotherapy**

Significantly **increased 30-day mortality** in:

- **Pancreatic cancer**
- **Pancreatic resection** performed
- **CRP** before intervention, > 50 mg/L
- **Leukocytes** before intervention, > 9.8 Gpt/L
- **Bilirubin** before intervention, > 200 µmol/L
- **High tumor burden** (see FIG. 8)
- **Karnofsky performance status scale**, < 80
- **Malnutrition** (BMI, < 18.5 kg/m<sup>2</sup>)

## Conclusion

EUS-BD in malignant bile duct stenosis is a safe & effective method to reduce discomfort in palliative patients w/o further limiting quality of life, even in surgically altered anatomy.

In addition, the prognosis, which can be estimated using simple parameters, can be used for individualized treatment planning such as stage-appropriate palliative measures.

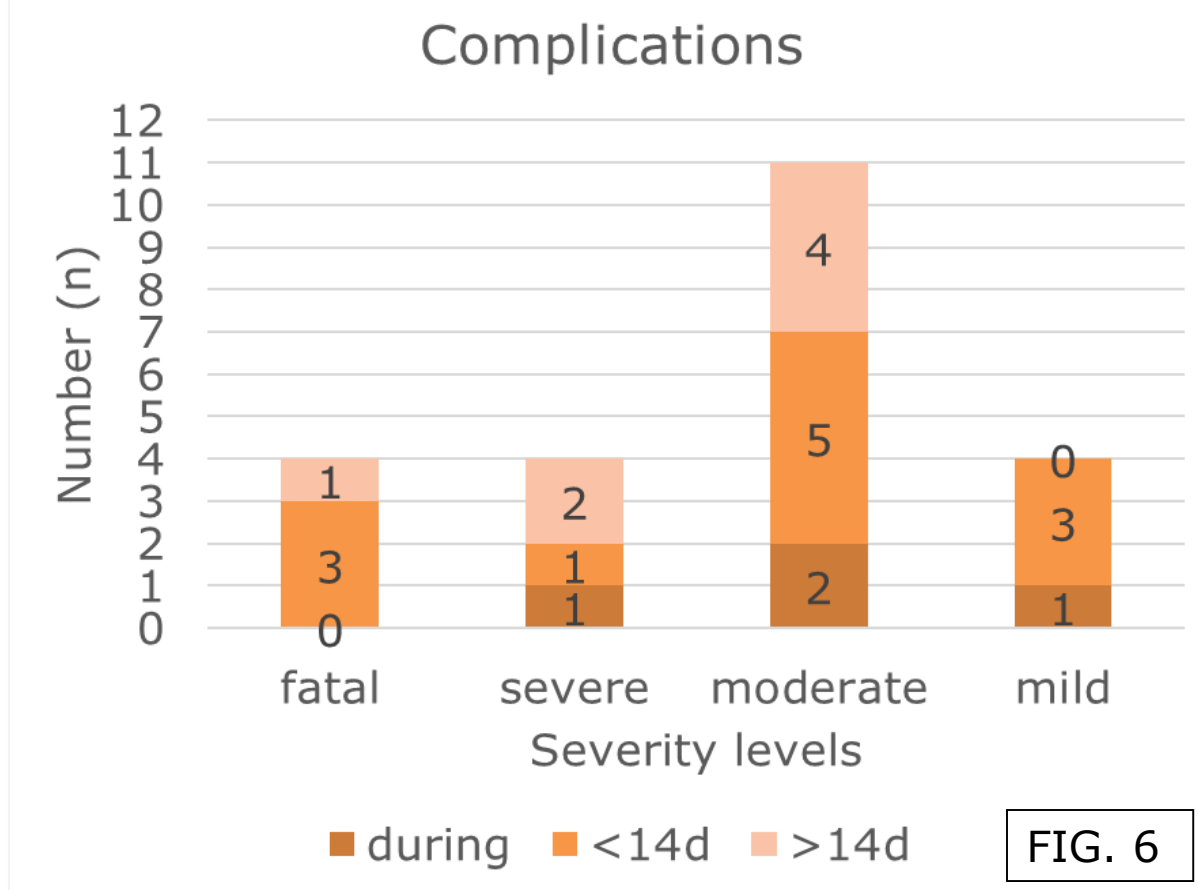


FIG. 6

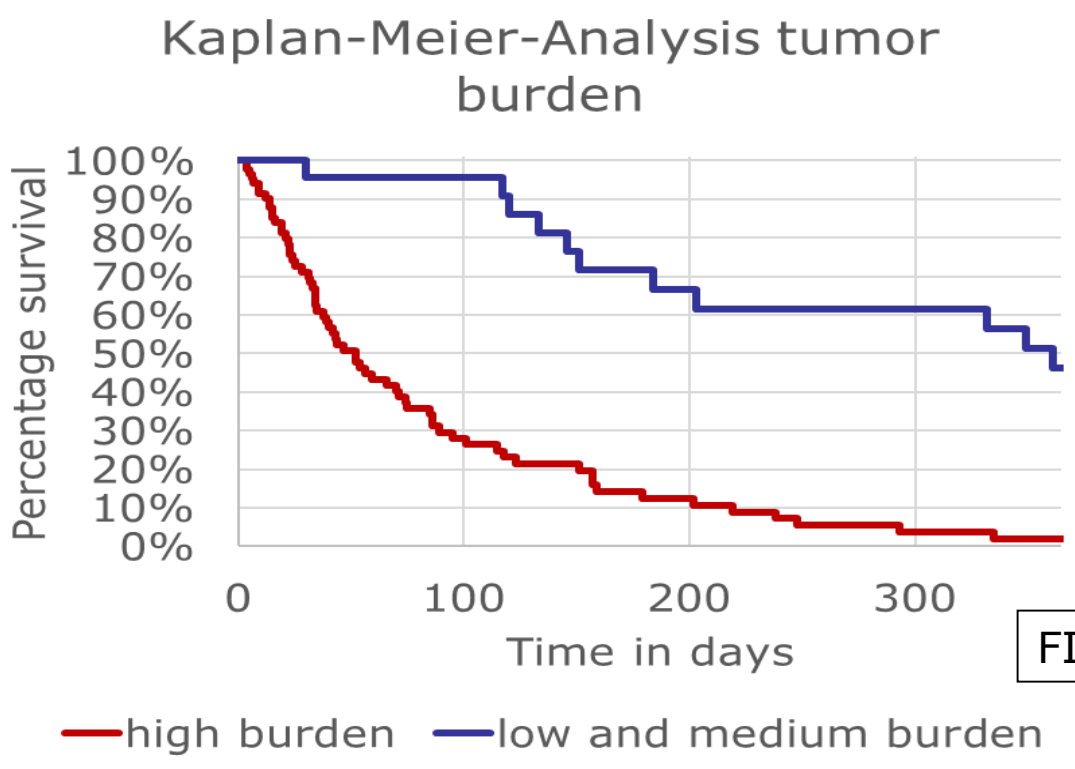


FIG. 8

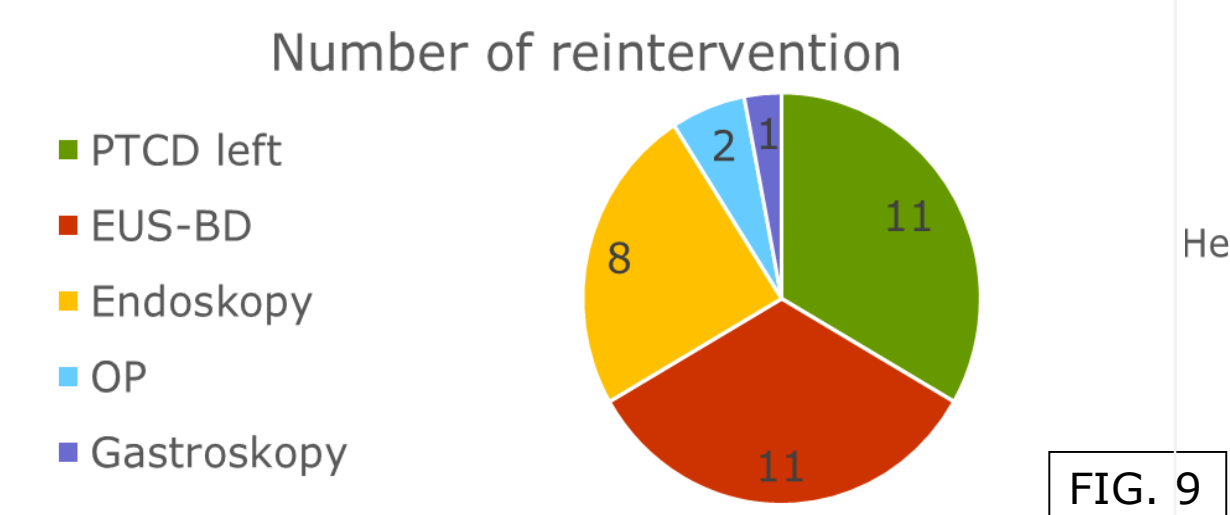


FIG. 9

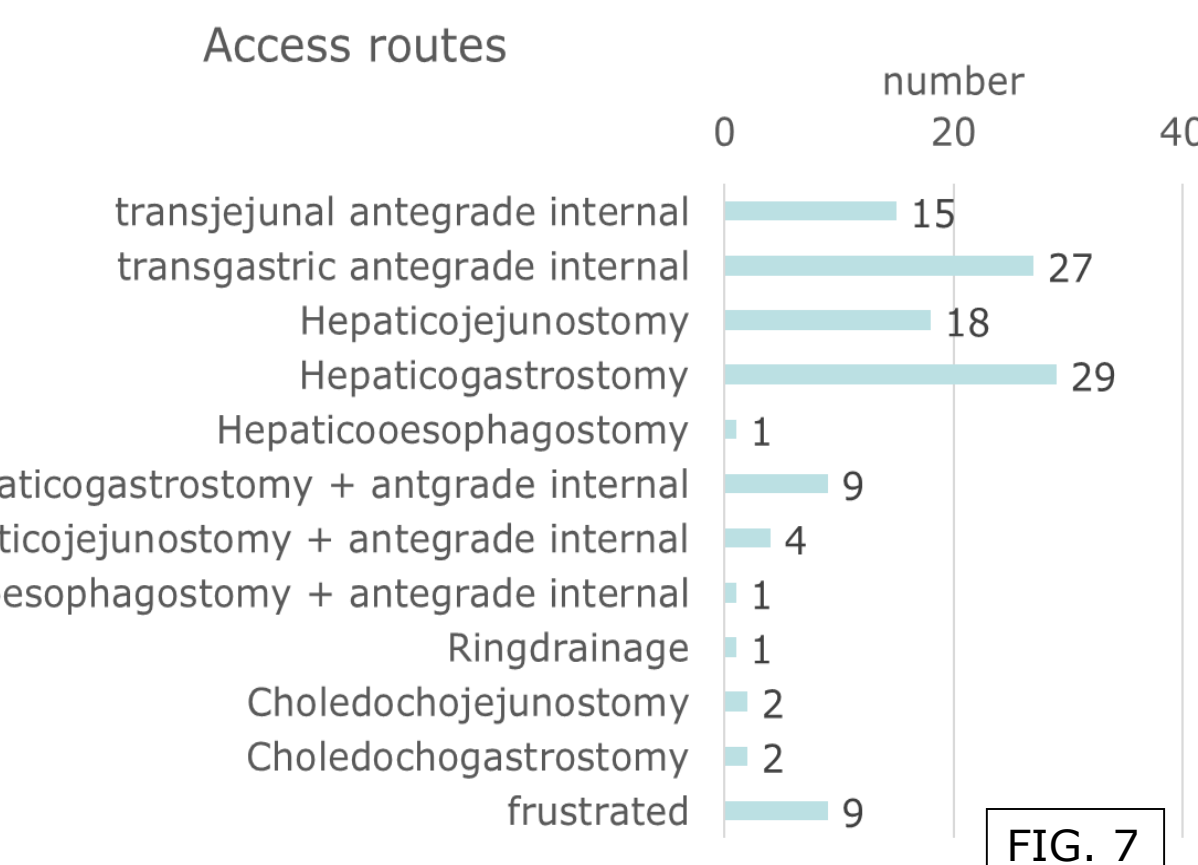


FIG. 7