



Recommendations for the course programme and organisation

Dear Organiser/Tutor,

The Luebeck EUS Trainer (LET) is a biological model on which endosonographically controlled, invasive procedures (EUS-FNA) and interventions (pseudocyst drainages) can be performed.

Smooth presentation of the courses requires meaningful planning in order to make the training period with a training model as long and effective as possible. One organ package per training day and case is usually sufficient. However, this does not apply to pure intervention courses in which the drainage of pseudocysts is practised.

The training times should be at least 90 minutes per training block, during which 4–5 participants should use the model.

The following variations are possible, depending on the course goal:

- I. **EUS-FNA of the integrated puncture objects:** All-day puncture training with different needle types (19–25 G) is possible due to the high stability of the objects.
- II. **EUS-FNA of integrated bladders (pseudocysts):** Puncture and aspiration of the content are possible, as the pseudocysts can be refilled through appropriate valves on the outside of the case. Experience has shown that removing the needle from the puncture channel after the EUS-FNA does not result in relevant leakage. However, please ensure that the bladders are always sufficiently refilled from the outside to keep the distance between the bladder and the gastrointestinal wall during suction as low as possible.
- III. **EUS-guided interventions:** All bladders (pseudocysts) integrated into the model are accessible for intervention (also during radiography); this also concerns the bladder in a cranial position of the prostate gland, which has been provided for rectal ultrasound. Experience has shown that participants can take a very long time to perform these interventions. Thus, it is recommended to split the drainage steps among the participants. Possible steps are:

- a. Participant 1: EUS-FNA with 19 G needle and wire insert
- b. Participant 2: Removal of the needle while leaving the wire in place as well as extension of the fistula, e.g. with Will knife/cystotome
- c. Participant 3: Insertion of a guide-wire catheter and a plastic prosthesis, alternatively SEMS (self-expanding metal stent)

During *combined* courses including EUS-FNA puncture objects and interventions, e.g. as part of a basic and extended course, the puncture/drainage of the pseudocysts should be scheduled at the end of the training day, as some forms of drainage may result in complete collapse of the pseudocysts. It is thus recommended to remove plastic prostheses by means of a polypectomy snare immediately after insertion into the pseudocyst, as the leak is then likely to close due to the strength of the bladder muscles.

However, this does not work after the insertion of SEMS. These should therefore be used at the end of the training session. The division of the work steps among the participants avoids waiting times, so that the 5 pseudocysts integrated into the model are usually sufficient for a one-day combined course.

Pure intervention courses (pseudocyst drainages) may require the drained bladders to be exchanged for new ones. However, consider that an exchange takes approximately 60 minutes and this must be taken into account when placing your order. Alternatively, it is possible to provide a 2nd readily-equipped LET to ensure smooth execution of the course.

The settings specified in the manual must be adhered to when HF current is used. Make absolutely sure you contact your appropriate field technician responsible for the maintenance of your HF units. When doing so, advise them that the setting of the HF generator must be adjusted to match a single-piece neutral electrode – to improve conductivity, table salt should be filled into the case as well as the bladders as specified in the manual. Please also ensure that HF current is only applied when the instruments are outside the working channel of the EUS veterinary device – otherwise, considerable damage to the EUS veterinary device could result.

If you have any questions, contact burmester.buc@t-online.de or +49160-17 393 17

E. Burmester

CHECK list of recommended accessories for invasive and interventional EUS/pro LET

(It is advisable to clean all materials after use and re-use them during subsequent courses)

Items	OK
1 large, wipeable table <i>or</i> washable examination table	
1 large table for accessory storage	
Absorptive sheets for tables	
4 electrical connections with extension cable and power strip if needed (connection for ultrasound device, endoscope tower, HF device and LET pump)	
Ultrasound device	
Longitudinal therapeutic EUS endoscope for veterinary use with a working channel of ≥ 3.7 mm	
Video processor	
Drainage with hoses	
HF device (set to "single-piece") with the corresponding cables	
EUS FNA needles - all commercially available needles	
Guide wire 0.035"	
Ring knife (such as MTW Will knife, 8.5 F cystotome)	
Bile duct dilatation balloon (6 mm) <i>or</i> bile duct bougies	
Straight plastic bile duct prostheses of type 7 F or 8.5 F	
Guide wire catheter for 8.5 F type bile duct prostheses	
Pusher for 7 F <i>or</i> 8.5 F type prostheses	
SEMS for pseudocysts if needed	
HOT AXIOS stent if needed	
Small polypectomy snare for prosthesis removal	