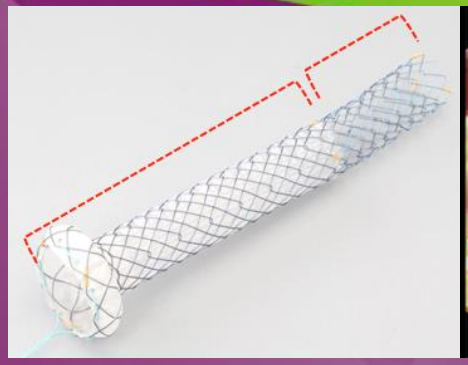
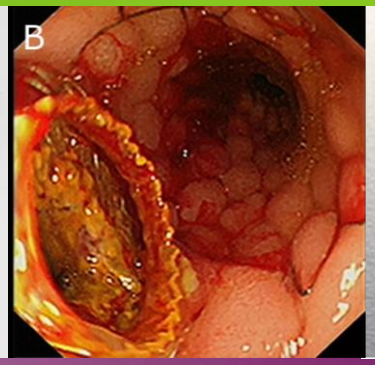

Consensus guidelines in EUS guided drainage procedures

Professor Anthony YB Teoh

Deputy director of endoscopy
Associate Professor
Department of surgery
Prince of Wales Hospital
The Chinese University of Hong Kong

Scope of the consensus

- The aim of the consensus is to combine the best available scientific evidence withvthe collective judgment of experts to yield a statement regarding the appropriateness and necessity of performing a procedure at the level of patient-specific symptoms, medical history and test results

Voting for appropriateness

- An appropriate procedure:

"the expected health benefit exceeds the expected negative consequences by a sufficiently wide margin that the procedure is worth doing, exclusive of cost"

Data analysis

- Median scores of each statement calculated
- Appropriate: panel median 7-9 without disagreement
- Uncertain: panel median 4-6 OR any median with disagreement
- Inappropriate: panel median 1-3 without disagreement

Voting for necessity

- For Statements deemed appropriate, they will be voted for necessity, defined when satisfy all of the following criteria:
  1. The procedure must be appropriate
  2. It would be considered improper care not to provide this service
  3. There is a reasonable chance that the procedure will benefit the patient
  4. The benefit to the patient is not small

Criteria of necessity

- More stringent
- Rating scale 1-9
- Median ≥ 7 deemed “necessary”

Consensus guidelines on EUS guided drainage procedures. Results from an international RAND/UCLA expert panel from the Asian EUS group

1. EUS guided pancreatic pseudocyst drainage
2. EUS guided biliary drainage
3. EUS guided pancreatic duct drainage

Target journals

- GUT
- CGH
- AJG
- GIE / Endoscopy

Guidelines on EUS guided pancreatic pseudocyst drainage

- 16 statement
- 2 rounds on voting for appropriateness and 1 round on necessity

Statement 1

- Acute pseudocyst should usually be drained if they persist for more than 4-6 weeks, have a mature wall and are ≥ 6cm in size, causing symptoms or complications e.g. gastric outlet obstruction and biliary obstruction

- Appropriateness median 9
- Necessity median 9

Statement 2

- EUS-guided drainage is the optimal drainage approach in uncomplicated pseudocysts that are located adjacent to the stomach or duodenum.

- Appropriateness median 9
- Necessity median 8

Statement 3

- Given the availability of the expertise, EUS-guided drainage is preferred over EGD guided drainage of pancreatic pseudocyst.

- Appropriateness median 9
- Necessity median 9

Statement 4

- Pre-drainage evaluation should include contrast enhanced CT or MRCP and occasionally prior EUS to decide on the best approach for drainage.

- Appropriateness median 9
- Necessity median 8

Statement 5

- Multi-disciplinary involvement (including endoscopist, interventional radiologist & surgeons) may be required in difficult cases (e.g. recurrence, atypical locations, infected & bleeding pseudocyst) to decide on the best approach to drainage.

- Appropriateness median 9
- Necessity median 9

Statement 6

- Prophylactic antibiotics should be given to the patient and continued post-procedurally.

- Appropriateness median 8
- Necessity median 8

Statement 7

- The use of fluoroscopy is recommended during EUS-guided pseudocyst drainage.

- Appropriateness median 9
- Necessity median 7

Statement 8

- One or two plastic pigtail stents should be inserted to maintain the patency of the cystogastrostomy.

- Appropriateness median 8
- Necessity median 7

Statement 9

- The use of metallic stents for pancreatic pseudocyst drainage remains investigational.

- Appropriateness median 8
- Necessity median 7

Statement 10

- The risk of pseudocyst recurrence may be increased in patients with pancreatic ductal disruption.

- Appropriateness median 9
- Necessity median 8

Statement 11

- The insertion of pancreatic ductal stent can be considered in patients with disrupted pancreatic ducts

- Appropriateness median 8
- Necessity median 8

Statement 12

- The use of nasocystic catheters can be considered in infected pseudocyst.

- Appropriateness median 9
- Necessity median 8

Statement 13

- Centers performing the procedure should have multidisciplinary support including interventional radiologist, surgeons and anesthesiologist, to prevent and manage complications.

- Appropriateness median 9
- Necessity median 9

Statement 14

- Skills in EUS-guided pseudocyst drainage are best acquired through observation, followed by hands-on training in the porcine model and then performance of the procedure in real patients.

- Appropriateness median 7
- Necessity median 8

Statement 15

- ERCP skills is beneficial to the endoscopist learning EUS-guided drainage of pseudocyst.

- Appropriateness median 9
- Necessity median 7

Statement 16

- Performance of 5 to 10 supervised procedures are required to gain competency in EUS-guided pseudocyst drainage.

- Appropriateness median 7
- Necessity median 7

Conclusion

- The voting of all statements is complete
- All statements are considered appropriate and necessary

Guidelines on EUS guided biliary drainage

- 15 statements
- 6 rounds on voting for appropriateness and 1 round on necessity

Statement 1

- If expertise is available, EUS-BD is a viable rescue procedure in patients with failed ERCP drainage.

- Appropriateness median 7 (> 30% disagreement)
- Comments: Percutaneous is a well established alternative and more widely available
- Necessity median 9

Statement 2

- If expertise is available, EUS-BD can be used as an alternative procedure in patients with altered post-operative anatomy or duodenal stenosis precluding ERCP.

- Appropriateness median 7 (> 30% disagreement)
- Comments: Comments: Percutaneous is a well established alternative and more widely available
- Necessity median 9

Statement 3

- Trans-duodenal and trans-hepatic approaches can be used for drainage of distal common bile duct block.

- Appropriateness median (not voted)
- Necessity median 9

Statement 4

- A trans-hepatic approach to EUS-BD would be required for hilar blocks.

- Appropriateness median (not voted)
- Necessity median 9

Statement 5

- Imaging procedure such as MRCP and CT should be done in patients with suspected hilar obstruction prior to the EUS-BD procedure, though MRCP is preferred.

- Appropriateness median 9
- Necessity median 9

Statement 6

- Antibiotic prophylaxis is recommended before the EUS-BD procedure.

- Appropriateness median 8
- Necessity median 9

Statement 7

- Duct puncture should be performed with a 19-gauge EUS-FNA needle.

- Appropriateness median 9
- Necessity median 8

Statement 8

- A 0.035’ or 0.025’ guidewire with floppy tip should be used to negotiate the bile duct.

- Appropriateness median 9
- Necessity median 9

Statement 9

- Catheters, balloons or cystotome are preferred for tract dilation. Tract dilation with precut papillotome is not recommended.

- Appropriateness median 9
- Necessity median 8

Statement 10

- Fully or partially covered metal stents should be used for trans-luminal stenting. Uncovered metal stents can be used for antegrade trans-papillary stenting.

- Appropriateness median 8
- Necessity median 8

Statement 11

- The use of metal stents may be preferred over plastic stents for EUS-BD to reduce the risk of bile leak

- Appropriateness median 8
- Necessity median 8

Statement 12

- Major complication can occur after EUS biliary drainage and centers performing the procedure should have multidisciplinary support including interventional radiologist, surgeons and anesthesiologist, to prevent and manage complications.

- Appropriateness median 8
- Necessity median 9

Statement 13

- EUS-BD should be done at expert centers with facilities and expertise in EUS, ERCP, and PTBD.

- Appropriateness median 9
- Necessity median 9

Statement 14

- Training in EUS-BD should only commence in those endoscopist experienced in EUS-FNA, wire manipulation techniques, and biliary stent placement.

- Appropriateness median 9
- Necessity median 9

Statement 15

- Pig models or ex-vivo models are suitable for hands-on training on EUS-BD.

- Appropriateness median 7
- Necessity median 8

Conclusion

- Statement 1-4 need another voting of appropriateness
- Others are considered appropriate and necessary

Guidelines on EUS guided PD drainage

- 12 statements
- 3 rounds of voting for appropriateness and 1 round of necessity

Statement 1

- EUS-PD is a viable rescue procedure, in patients with symptomatic pancreatic ductal obstruction after failed ERCP.

- Appropriateness median 8
- Necessity median 8

Statement 2

- EUS-PD can be used as an alternative procedure in patients with altered post-operative anatomy or duodenal stenosis where ERCP is not possible.

- Appropriateness median 8
- Necessity median 9

Statement 3

- EUS-PD could be achieved by the rendezvous technique, pancreatico-gastrostomy and trans-gastric antegrade drainage.

- Appropriateness median 8
- Necessity median 8

Statement 4

- The trans-gastric approach is the most common approach in EUS-PD.

- Appropriateness median 9
- Necessity median 9

Statement 5

- Appropriate imaging such as MRCP or contrast enhanced CT should be performed in patients with obstruction of the main pancreatic duct prior to EUS-PD.

- Appropriateness median 9
- Necessity median 9

Statement 6

- Antibiotic prophylaxis is recommended before the EUS-PD procedure.

- Appropriateness median 8
- Necessity median 8

Statement 7

- Following pancreatic duct puncture, a 0.035 or 0.025 guide-wire with floppy tip can be used to negotiate the pancreatic duct and the papilla

- Appropriateness median 8
- Necessity median 9

Statement 8

- The available options for tract dilation include catheters, dilators, cystotome or balloon.

- Appropriateness median 9
- Necessity median 9

Statement 9

- Plastic stents without intervening side holes between the ends of the stent can be used for EUS-PD.

- Appropriateness median 8
- Necessity median 8

Statemen 10

- As complication rates of EUS-PD are higher than ERCP, centers performing the procedure should have multidisciplinary support including interventional radiologist, surgeons and anesthesiologist, to prevent and manage complications.

- Appropriateness median 9
- Necessity median 9

Statement 11

- EUS-PD should be done at expert centres with facilities and expertise in EUS, ERCP.

- Appropriateness median 9
- Necessity median 9

Statement 12

- EUS-PD should be performed by experienced endoscopists in EUS and EUS-FNA, wire manipulation techniques, and stent placement.

- Appropriateness median 9
- Necessity median 9

Conclusions

- All statements are appropriate and necessary

Timeline

- Writing of the consensus guidelines in sections
- Complete paper in 3 months
- Send to steering committee for comments