DDW 2015 Update Interventional Endoscopy

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DDW 2015- What's New?

- EUS
- ERCP
- Endoscopic Resection

DDW 2015

- Pancreatic Cysts
- Biliary Drainage when ERCP Fails
- Gallbladder Drainage
- Challenging Colon Polyps / ESD Techniques

Pancreatic Cysts

Pancreatic Cysts

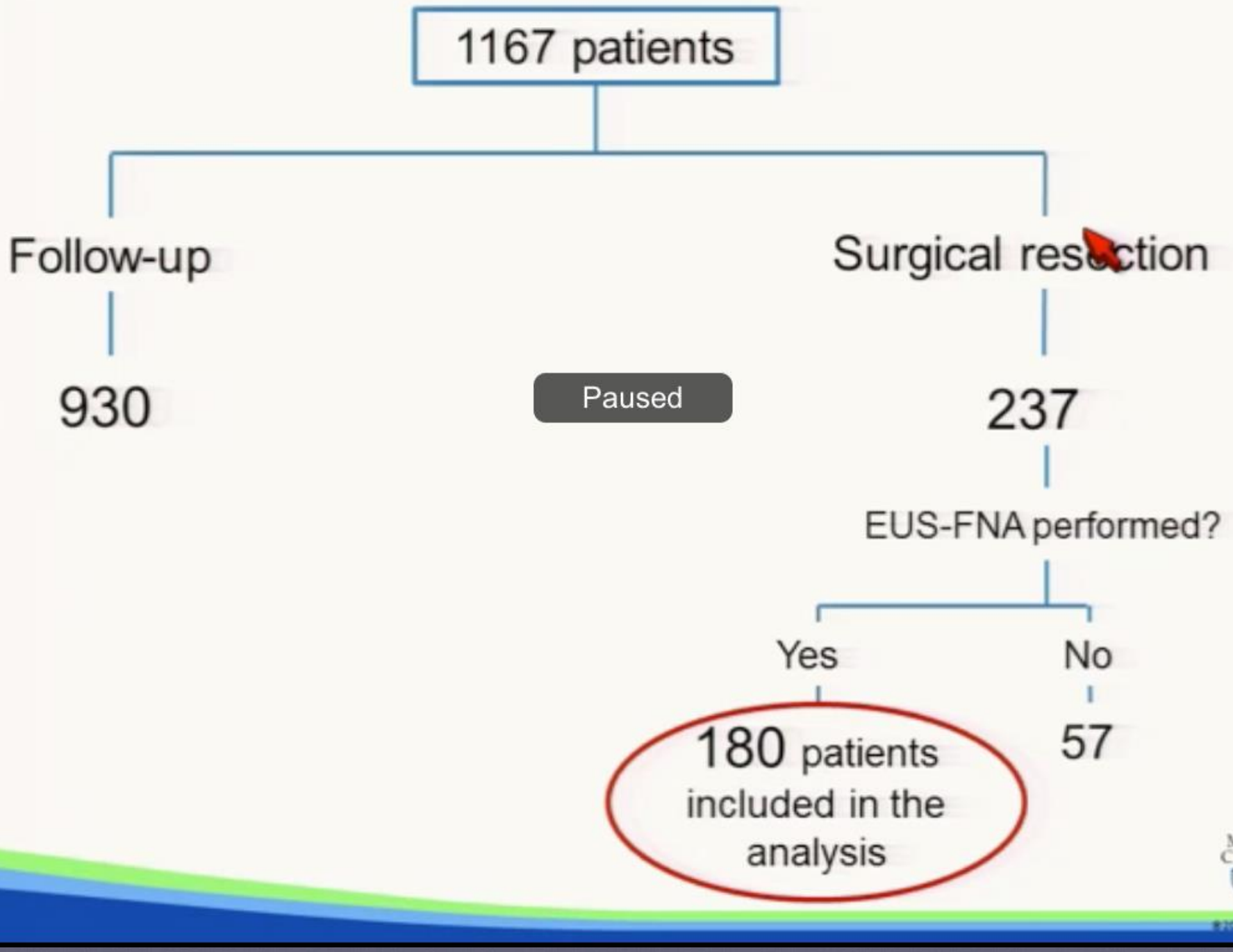
- Mucinous cystic lesions- IPMN and Mucinous Cystadenomas- are premalignant
- Pseudocysts are benign
- It can be difficult to distinguish between mucinous cysts- esp. IPMN- and pseudocysts
- It is difficult to determine which mucinous cysts have mild dysplasia and which have HGD/CA

Accuracy of EUS/FNA in assessment of IPMN

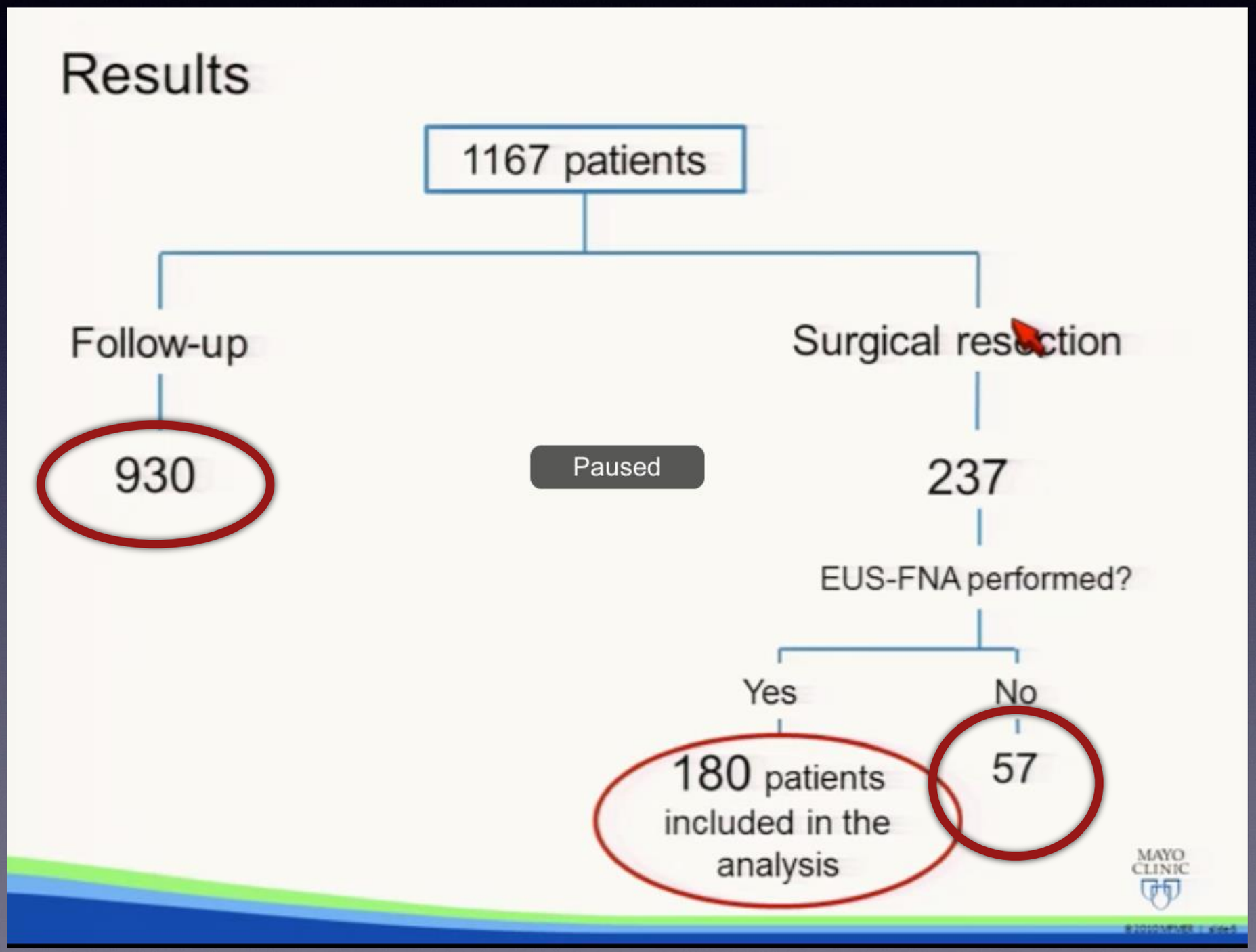
- Background: Side branch IPMN usually has CEA > 200, high amylase and cytology usually neg
- Background: CEA level cannot distinguish between low grade dysplasia and cancer in IPMN
- International multicenter retrospective study of patients who had both surgery and EUS/FNA
- 180 / 1167 Cyst patients had both surgery and EUS/FNA

Moris M et al. DDW 2015

Results


1167 patients
Follow-up
930
Paused
Surgical resection
237
EUS-FNA performed?
Yes
No
180 patients included in the analysis
57

Ideal Study :)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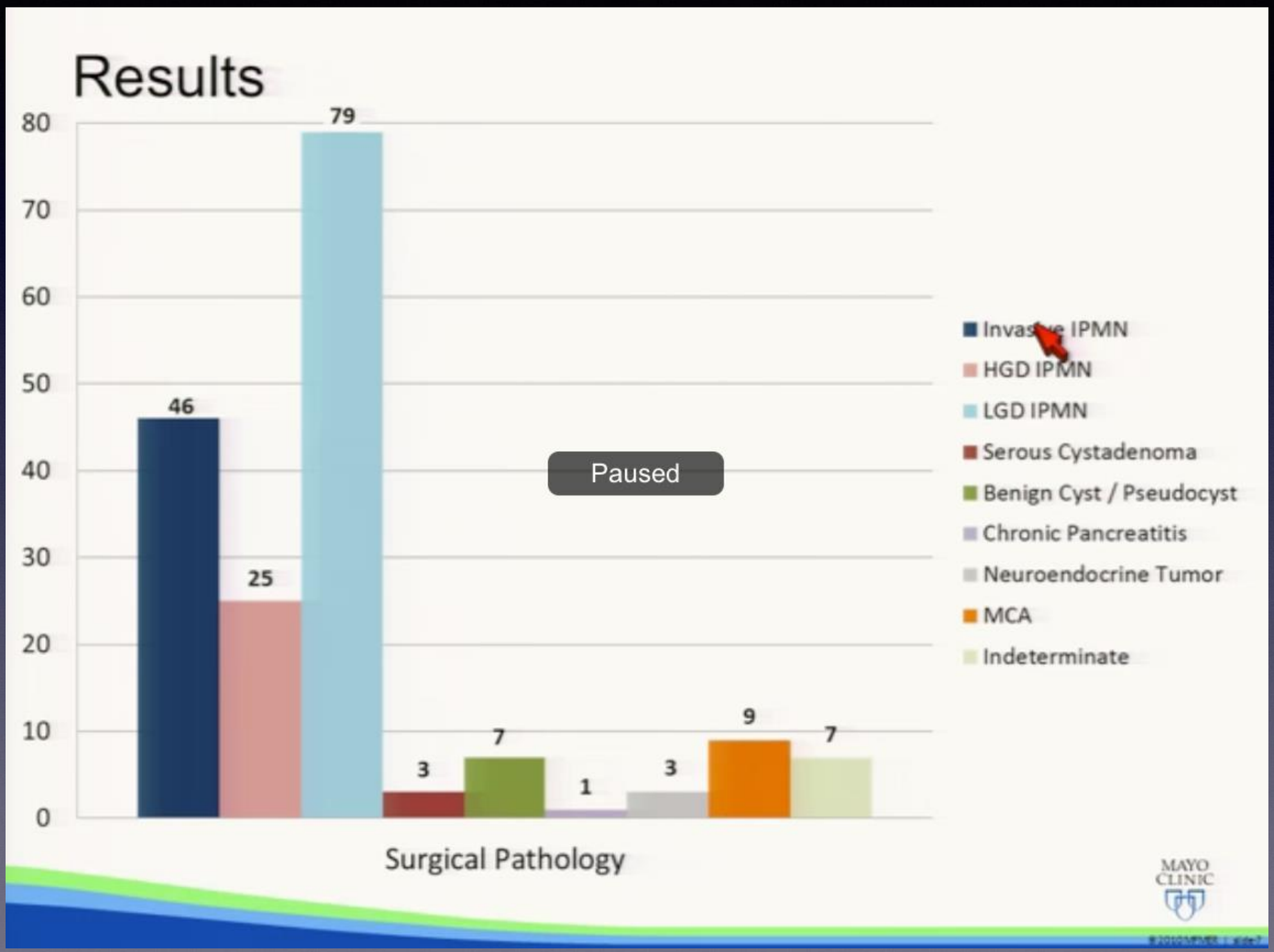
MAYO CLINIC

Results


80
70
60
50
40
30
20
10
0
46
25
79
3
7
1
3
9
7
Paused
Invasive IPMN
HGD IPMN
LGD IPMN
Serous Cystadenoma
Benign Cyst / Pseudocyst
Chronic Pancreatitis
Neuroendocrine Tumor
MCA
Indeterminate
Surgical Pathology

Results: Invasive/HGD IPMNs vs LGD IPMNs

Surgical Pathology	n	Median CEA value*
Invasive / HGD IPMN	33	653.0
LGD IPMN	45	404.0
Mucinous cystic adenomas	7	544.7
Non mucinous lesions	6	9.7

Paused

* ng/ml

MAYO CLINIC

Results

Use of cyst fluid cytology to discriminate malignancy between IPMN lesions

Positive cytology: presence of intracellular mucin + dysplastic cells

CYTOLOGY (n=145)	RESULT (%)
Sensitivity	40
Specificity	88
Positive Predictive Value	76
Negative Predictive Value	60
Accuracy	64

Paused

MAYO CLINIC

Authors Conclusions

Conclusions

- Cytology is a limited diagnostic tool for IPMNs due to its lack of sensitivity.

- CEA is a useful test when the clinical and imaging features are inconclusive.

Paused

- CEA should not be used to establish the grade of malignancy among IPMN-suspected lesions.

Gastroenterology 2015;148:819–822

AGA SECTION

American Gastroenterological Association Institute Guideline on the Diagnosis and Management of Asymptomatic Neoplastic Pancreatic Cysts

Santhi Swaroop Vege,[1] Barry Ziring,[2] Rajeev Jain,[3] Paul Moayyedi,[4] and the Clinical Guidelines Committee

2. The AGA suggests that patients with pancreatic cysts <3 cm without a solid component or a dilated pancreatic duct undergo MRI for surveillance in 1 year and then every 2 years for a total of 5 years if there is no change in size or characteristics. *(Conditional recommendation, Very low quality evidence)*

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AGA SECTION

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3. The AGA suggests that pancreatic cysts with at least 2 high-risk features, such as size ≥3 cm, a dilated main pancreatic duct, or the presence of an associated solid component, should be examined with EUS-FNA. (*Conditional recommendation, Very low quality evidence)*

Biliary Drainge

What to do when ERCP Fails

EUS-Drainage

- Bile duct drainage, particularly in malignant obstruction distal to hilum after failed ERCP
- Gallbladder drainage: acute cholecystitis in nonsurgical candidates

EUS-Biliary Drainage

- Percutaneous Biliary Drainage or Surgery traditionally performed if ERCP fails in patients with biliary obstruction

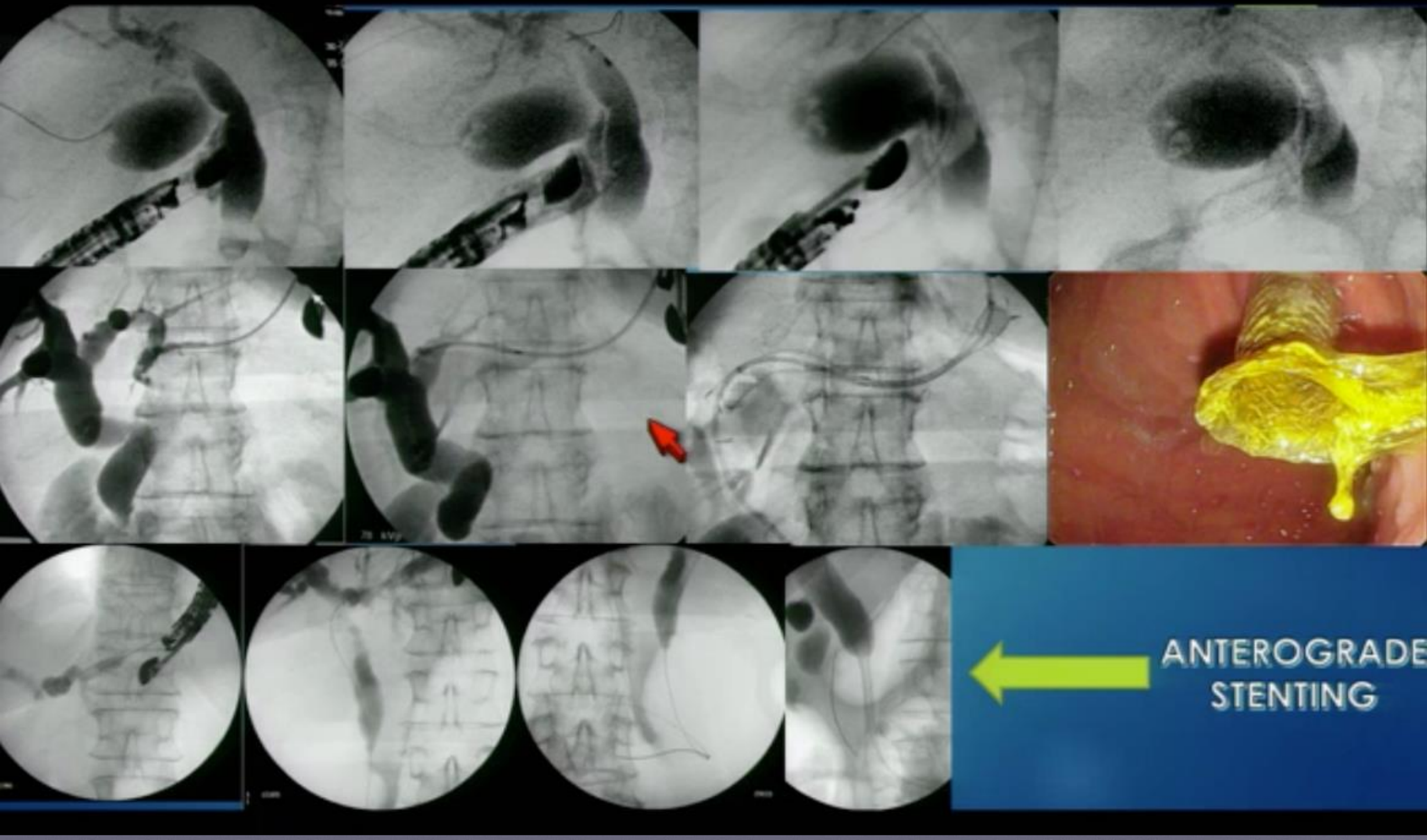
- In patients with inoperable distal bile duct malignancy these options are unattractive

- Several prior reports have suggested EUS-biliary drainage may be well tolerated

Multicenter Randomized Phase II Study Percutaneous Biliary Drainage vs EUS Guided Biliary Drainage : Results of the Intermediate Analysis

MARC GIOVANNINI , ERWAN BORIES , BERTRAND NAPOLEON , MARC BARTHET , FABRICE CAILLOL , CHRISTIAN PESENTI

ENDOSCOPY UNIT, HOPITAL JEAN MERMOZ, LYON, FRANCE; ENDOSCOPY UNIT, PAOLICALMETTES INSTITUTE, MARSEILLE, FRANCE; HEPATO-GASTROENTEROLOGY UNIT, HOPITAL NORD, MARSEILLE, FRANCE


ANTEROGRADE
STENTING

EUS-BD Study

- Stopped early after 21/20 patients in Radiology/EUS arms
- Although both techniques achieve drainage, the complication rate in Radiology arm is higher

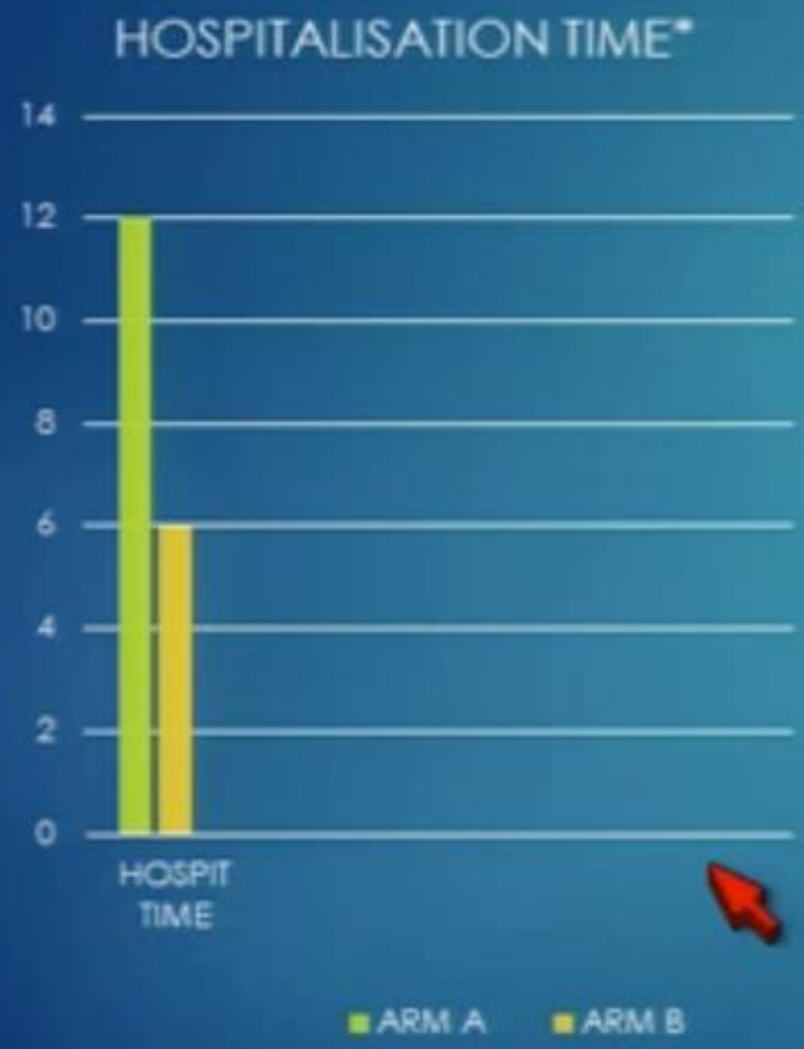
RESULTS (1)

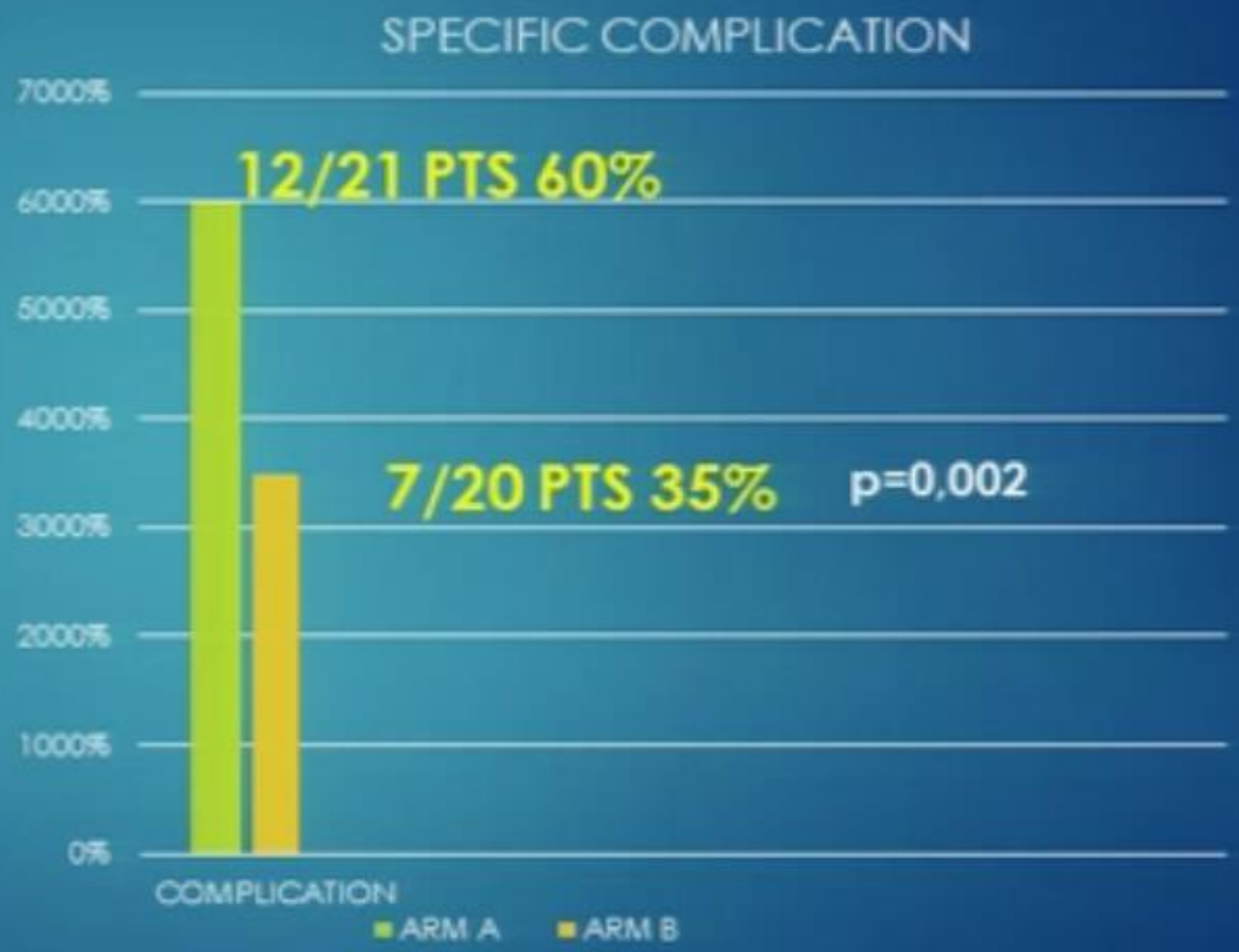
- **Biliary access** was successful in100% in the Arm A and in 95% in the Arm B.

- **Technical success** was respectively 17/21 (85%) in the Arm A and 19/20 (95%) in the Arm B.

- **No difference** was showed regarding the decrease of the bilirubin level after the drainage in the two arms.

RESULTS (2)

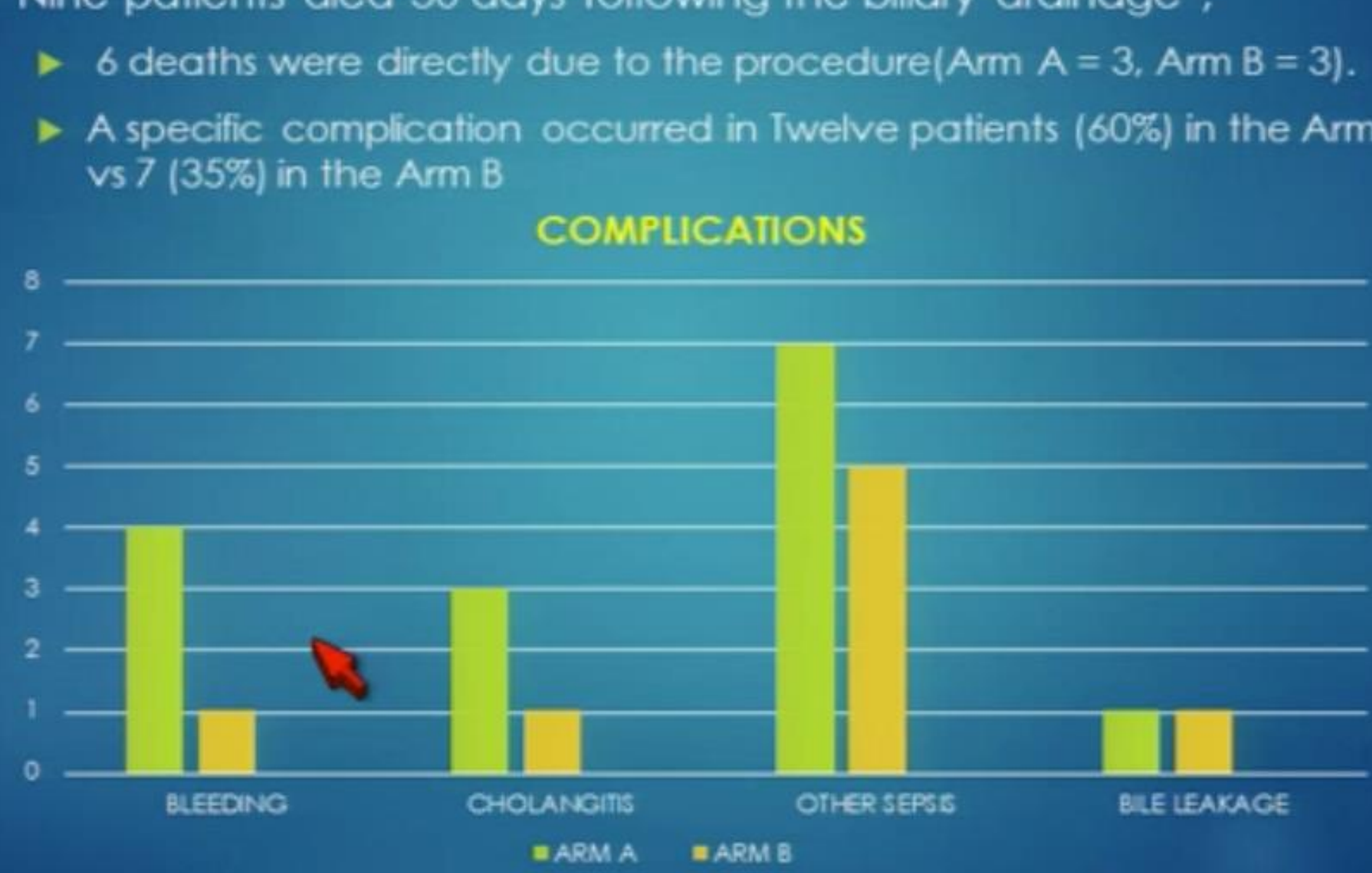




* p=0,02

RESULTS (3)

- Nine patients died 30 days following the biliary drainage ,
  - 6 deaths were directly due to the procedure(Arm A = 3, Arm B = 3).
  - A specific complication occurred in Twelve patients (60%) in the Arm A vs 7 (35%) in the Arm B



CONCLUSION

- **Complication rate was higher in the Arm A/PTBD (60%) vs Arm B/EGD (35%)**
- We have decided to stop the Arm A and to continue to include patients only in the EGD Arm up to reach the total number of 55 patients.

Acute Cholecystitis

A Role For Endoscopy?

Acute Cholecystitis

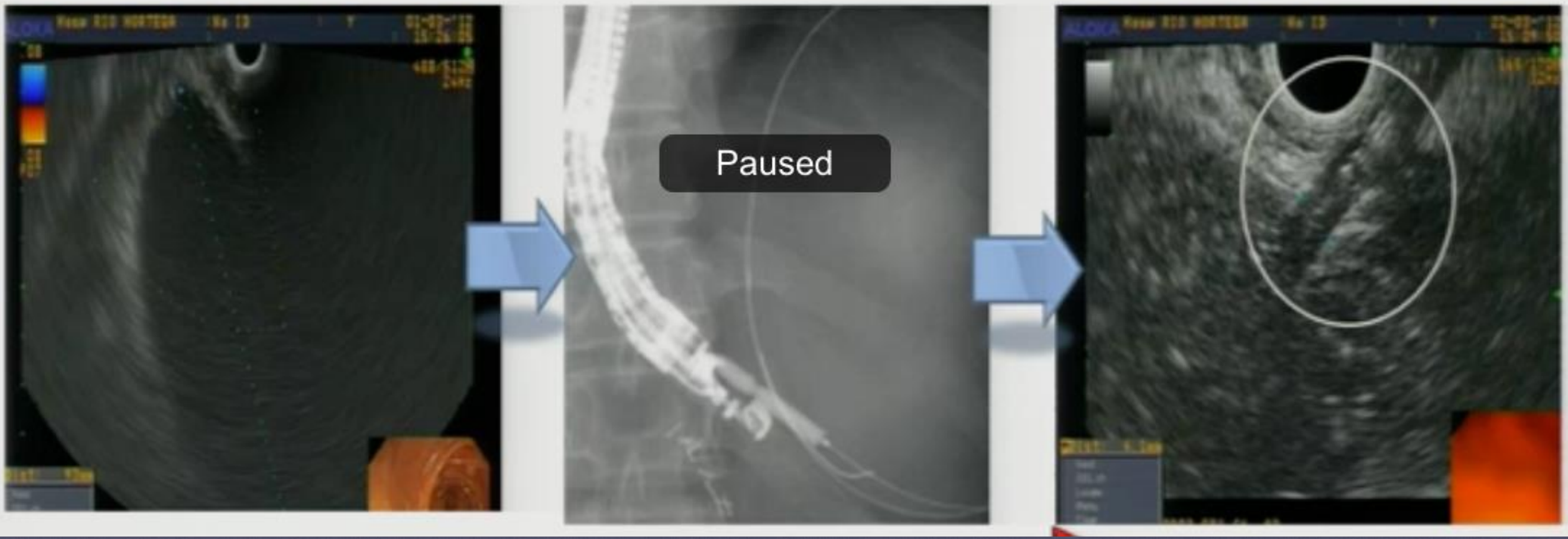
- Lap Cholecystectomy in operative candidates
- Traditionally: cholecystostomy tube either to delay surgery or instead of surgery in unfit
- Alternatives include ERCP with gallbladder stenting or EUS with stent placement between gallbladder and stomach or duodenum
- Limited data suggests EUS approach safe

EUS-Gallbladder Drainage

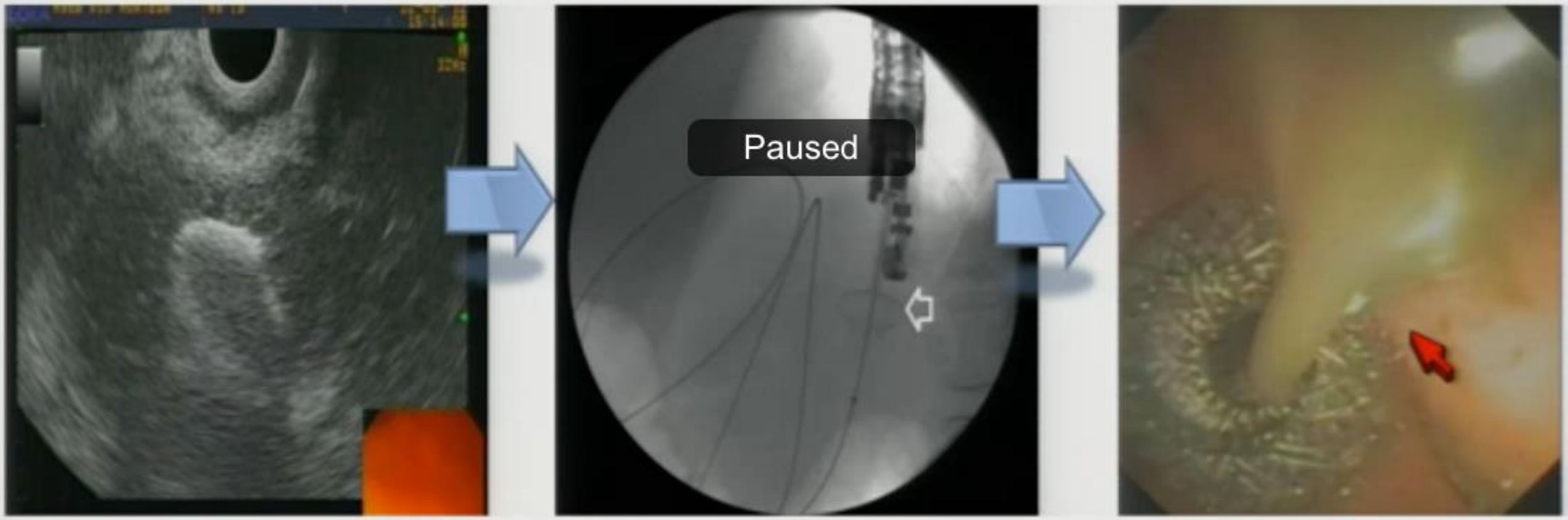
- Retrospective review 2012-2014, 2 centers (Hong Kong & Spain)
- 58 patients with acute cholecystitis deemed unfit for surgery treated with EUS-GB-Drainage, matched with controls (age/sex/ASA class) who underwent Percutaneous Cholecystectomy
- Linear EUS -> Puncture GB with needle -> Place Lumen Apposing Metal Stent

Teah A et al. DDW 2015

EUS-GB Drainage



EUS-GB Drainage



EUS-GB Drainage

Optional: Insert upper scope through stent and clean up Gallbladder

Results

- EUS had more procedural adverse events than Percutaneous: 17% vs 0% (p = 0.001)
- These events occurred mainly early in the experience: stent malposition, unsuccessful deployment and were overcome to complete the procedures in all cases

RESULTS

- **Secondary outcomes (I):**

  no statistically significant differences in terms of….

	TECHNICAL SUCCESS	CLINICAL SUCCESS	RECURRENT ACUTE CHOLECYST.	MORTALITY
EGBD	100%	93.1%	0%	0%
PC	100%	100%	3.4%	0.017%
p	**=**	**0.119 (n.s)**	**0.717 (n.s)**	**0.115 (n.s)**

RESULTS

- **Secondary outcomes (II):**

statistically significant **differences**

regarding:

	OVERALL MORBIDITY	UNPLANNED ADMISSIONS
EGBD	25.9%	6.9%
PC	70.7%	70.7%
p	**< 0.001**	**< 0.001**

Tube dislodgement, kinking or blockade

EUS-GB Drainage

- Technically challenging procedure with significant procedural adverse events
- Once patients recover from procedure, they may fare better than percutaneous group with fewer unplanned admissions for tube issues
- Optimal long term management and outcomes are unknown- leave stent in? Remove stent? Effect on subsequent surgery?

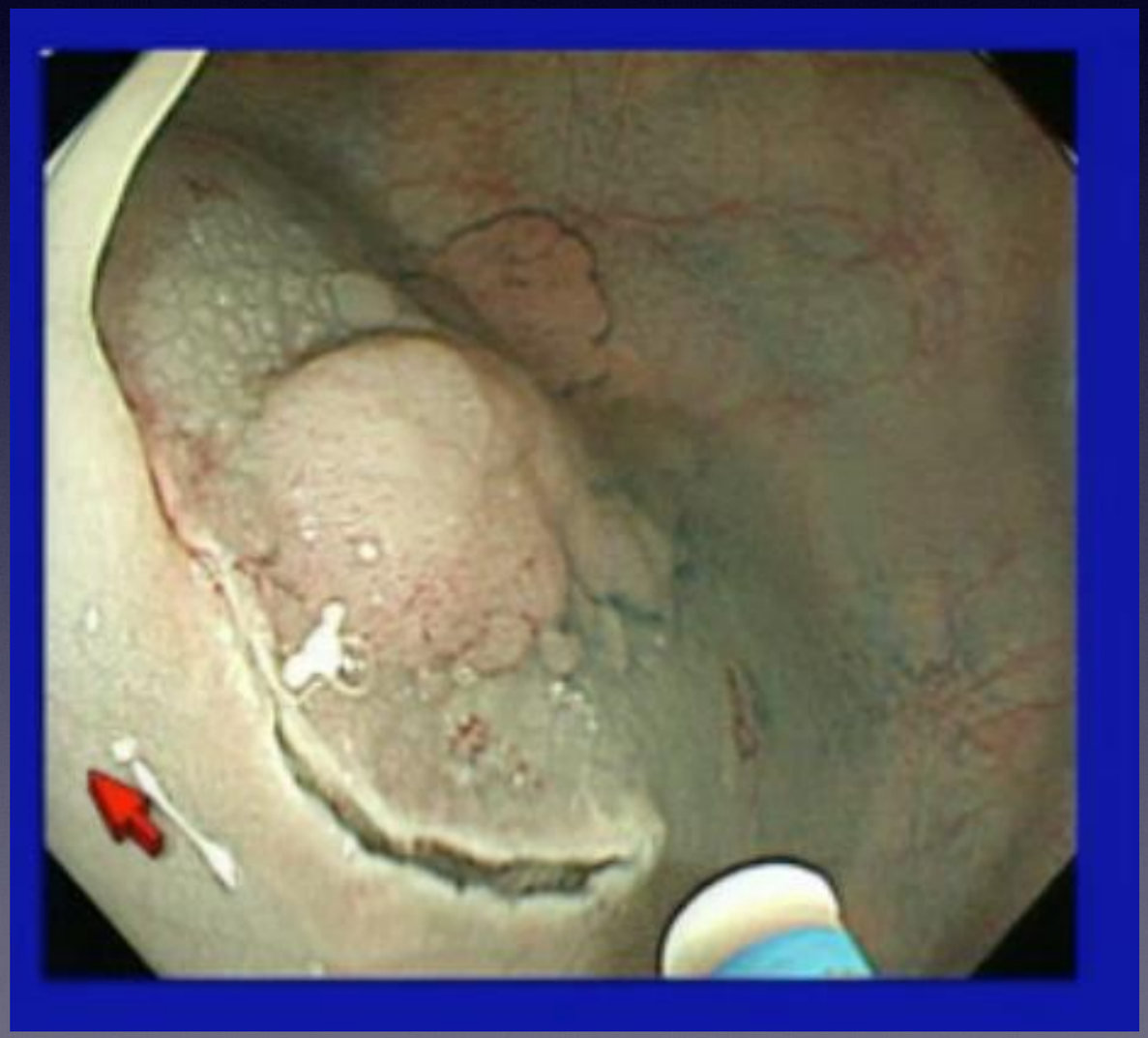
Endoscopic Resection

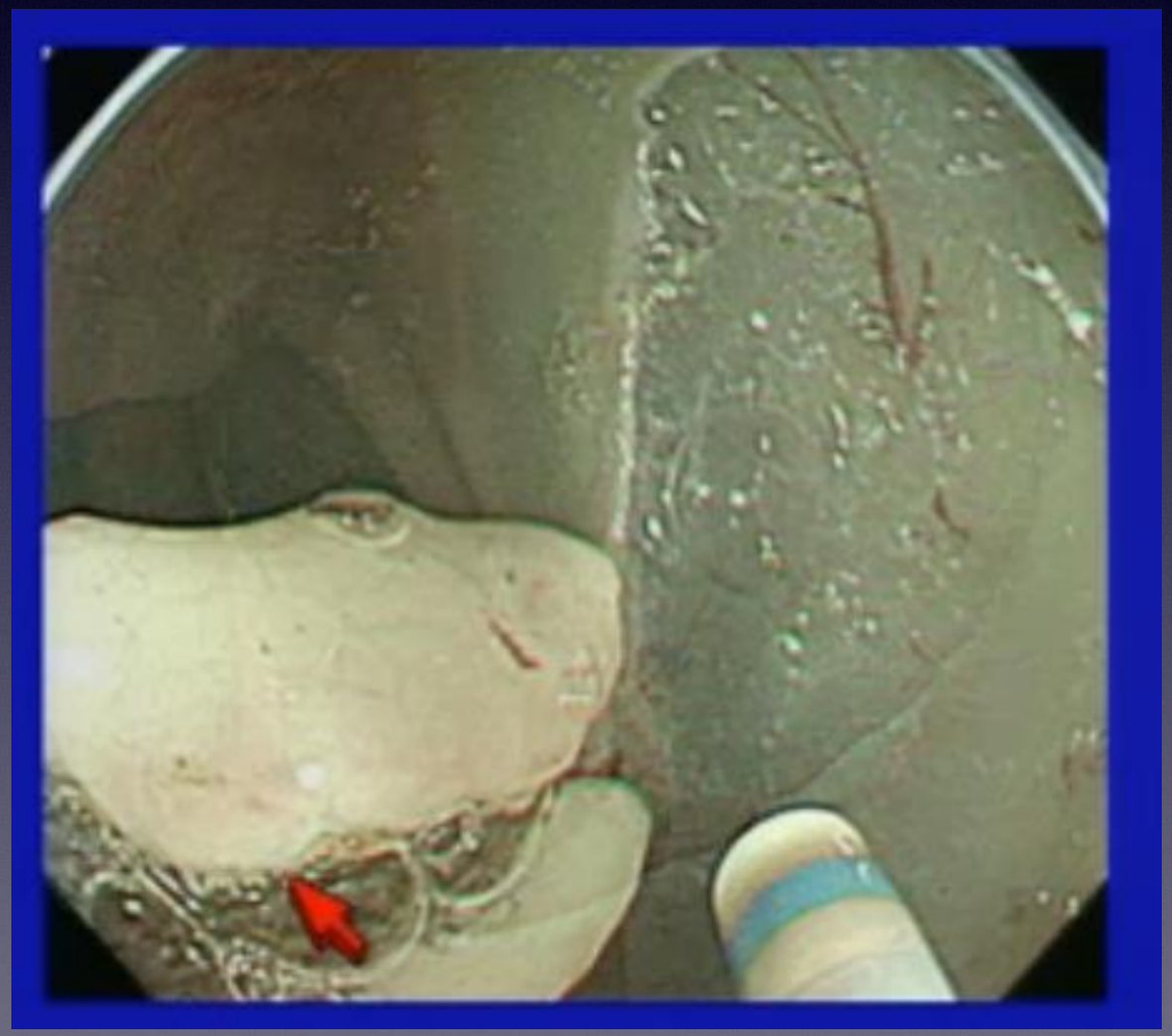
When to Bring Out the Knife?

Endoscopic Resection

- Endoscopic submucosal dissection commonly performed in Asia to treat early gastric cancer, esophageal cancer and difficult colon polyps
- ESD is difficult to learn, risky and time consuming
- In expert centers, the results are outstanding: en bloc resection with nearly no recurrence

Endoscopic Submucosal Dissection





Precut Technique

- Incision of the mucosa around the lesion is the first step of ESD
- Mucosal incision can facilitate en-bloc resection of challenging polyps up to 35mm with a snare
- Mucosal incision is relatively quick and safe

Precut EMR


En bloc
was done


the snare was adjusted to avoid grasping the proper
muscle layer and then the lesion was resected.

Our Precut-EMR Study

- Compare outcomes of Precut-EMR and ESD for colon polyps < 35mm at an expert Korean center
- Compare outcomes of Precut-EMR at the expert Korean center and Stanford/VA

Results:
Precut-EMR (≥ 20 mm) vs. ESD

Procedure-related variables/outcomes	Korean precut-EMRs (n = 28)	Korean ESDs (n = 56)	P-value
Device for precutting			<0.001
Dual knife	5 (17.86%)	27 (48.21%)	
Flex knife	6 (21.43%)	29 (51.79%)	
Tip of snare	17 (60.71%)	0	
Submucosal injection solution			<0.001
Saline-based solution only	10 (35.71%)	0	
Sodium hyaluronate solution	18 (64.29%)	56 (100%)	
Resection time, minutes, mean ± SD	13.18 ± 7.49	53.11 ± 28.79	<0.001
Grossly en-bloc resection, n (%)	26 (92.86%)	54 (96.43%)	0.598
Histologic complete resection, n (%)	21 (75%)	48 (85.71%)	0.227
Postprocedural hemorrhage, n (%)	1 (3.57%)	0	0.333
Perforation, n (%)	2 (7.14%)	4 (7.14%)	1.000
Follow-up period, median, month, (range)	13.85 (6.14–39.13)	12.81 (6.18–45.31)	
Recurrence	0 of 21 followed patients	0 of 39 followed patients	NA

Results:
Precut-EMRs (≥ 10 mm)

Procedure-related variables/outcomes	Korean precut-EMRs (n = 63)	US precut-EMRs (n = 25)	P-value
Device for precutting			<0.001
Dual knife	15 (23.81%)	17 (68%)	
Flex knife	11 (17.46%)	0	
Tip of snare	37 (58.73%)	8 (32%)	
Submucosal injection solution			<0.001
Saline-based solution only	21 (33.33%)	19 (76%)	
Sodium hyaluronate solution	42 (66.67%)	0	
Others (hetastarch, glycerol, methylcelluose)	0	6 (24%)	
Resection time, minutes, mean ± SD	11.29 ± 6.72	21.56 ± 12.95	0.001
Grossly en-bloc resection, n (%)	28 (93.65%)	18 (72%)	0.010
Complications			
Postprocedural hemorrhage, n (%)	1 (1.59%)	0	>0.999
Perforation, n (%)	2 (3.17%)	0	>0.999

And the Winner Is…

Discussion

- For the large colorectal neoplasia ranging 20–35 mm in diameter, precut-EMR achieved a high en bloc resection rate and a high histologic complete resection rate that were comparable with ESD for size-matched lesions.

- Precut-EMR required less than 25% of the procedure time of ESD and did not increase the perforation rate.

Discussion

- Precut-EMRs could be performed "safely" by an American endoscopist having less experience in ESD.
- En bloc resection rate of a US endoscopist's precut EMR data was lower than that of a Korean endoscopist's data.
- Given that the en bloc resection rate of precut EMRs ranged 65.2-67% in the previous Korean and Japanese studies, 72% of en bloc resection rate from US endoscopist's series is encouraging.

DDW 2015 Summary

- Management of pancreatic cysts is changing and there will be much more reliance on MRI, less EUS/FNA

- EUS drainage is emerging as a legitimate alternative to percutaneous drainage for failed ERCP and shows promise for cholecystititis

- ESD techniques such as Precut are making their way into the USA to improve resection of challenging lesions