

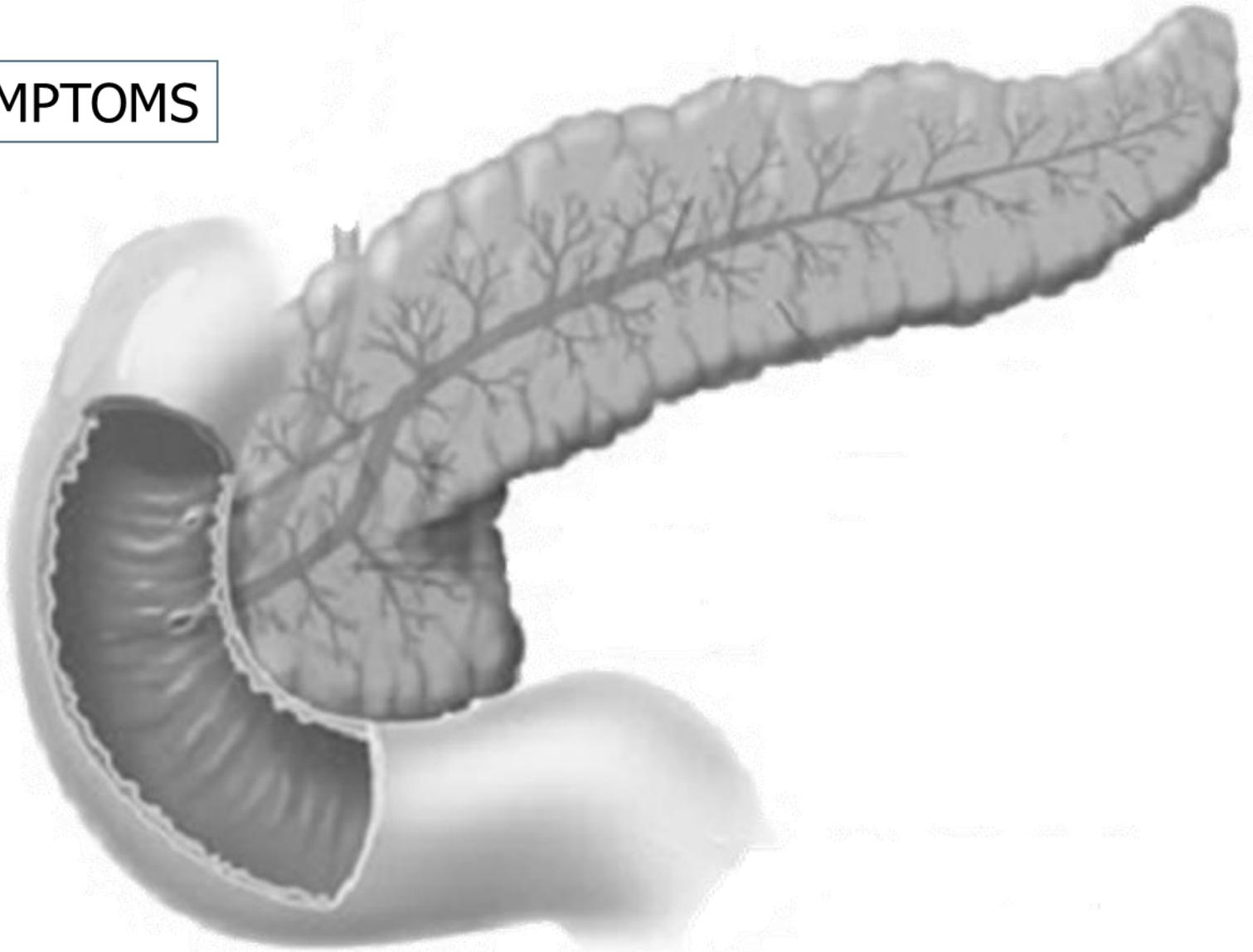
Endoscopia e lesione solide del pancreas



Carlo Fabbri

**U.O. di Gastroenterologia ed Endoscopia Digestiva
OSPEDALE BELLARIA-MAGGIORE
BOLOGNA**

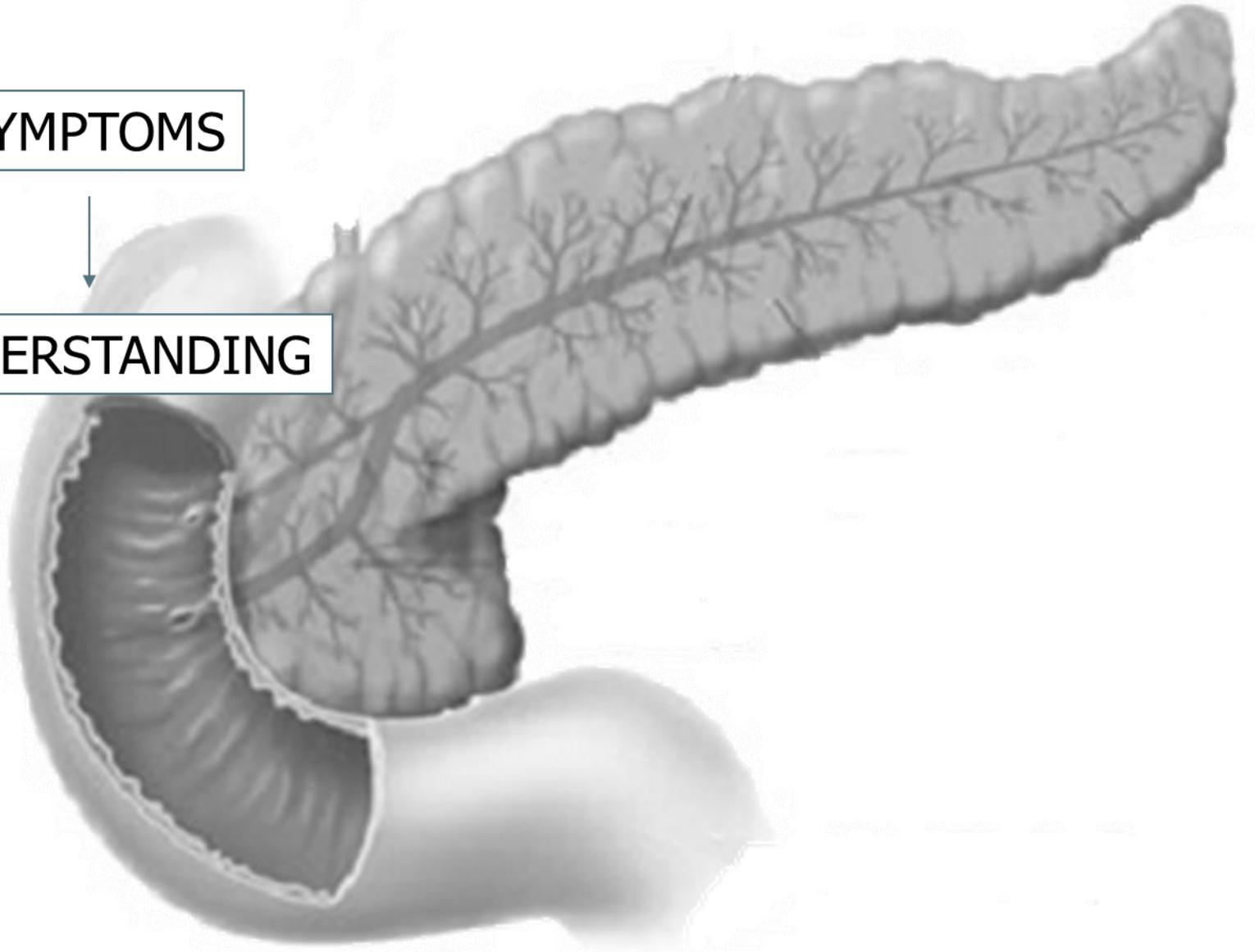
SYMPTOMS



SYMPTOMS



UNDERSTANDING



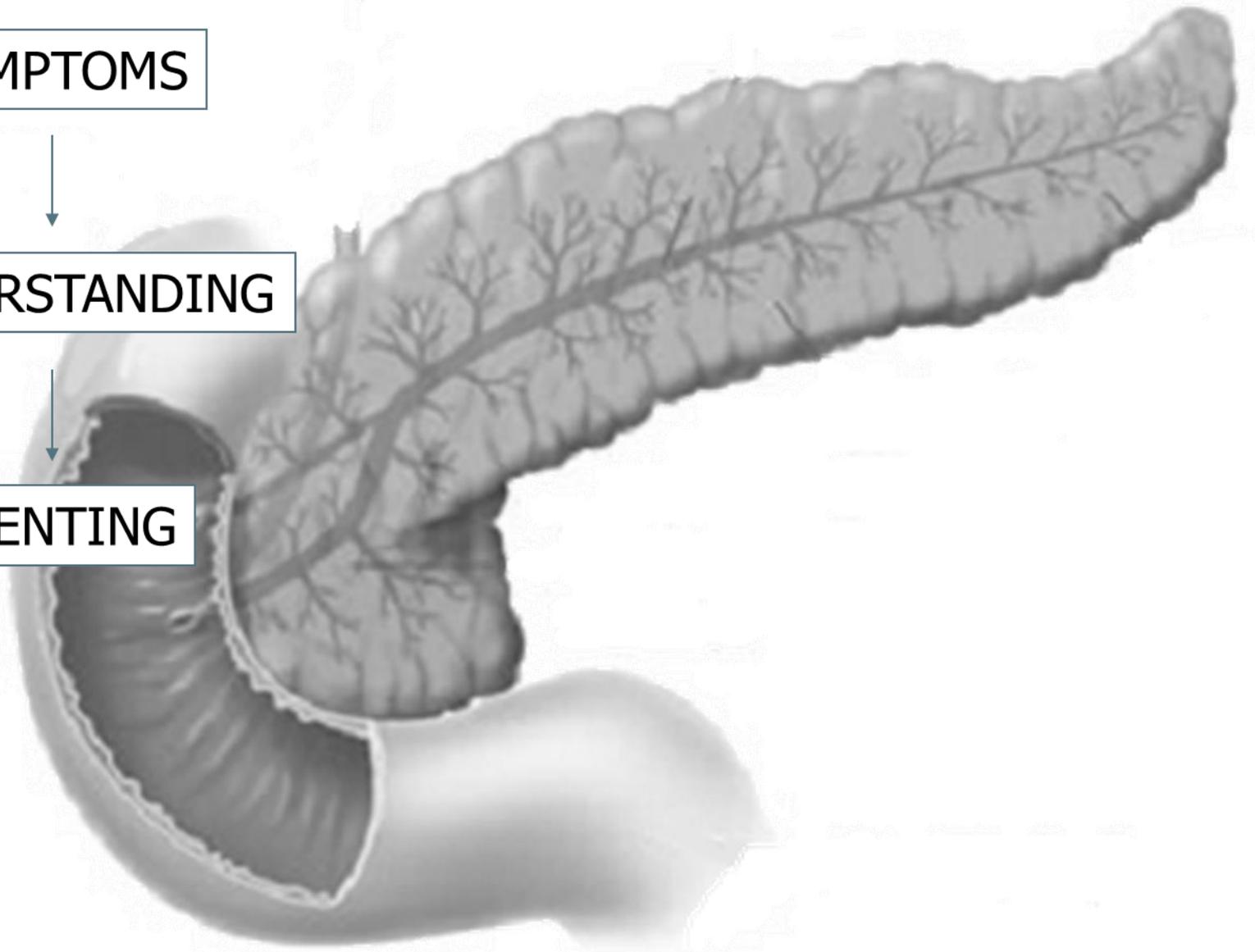
SYMPTOMS



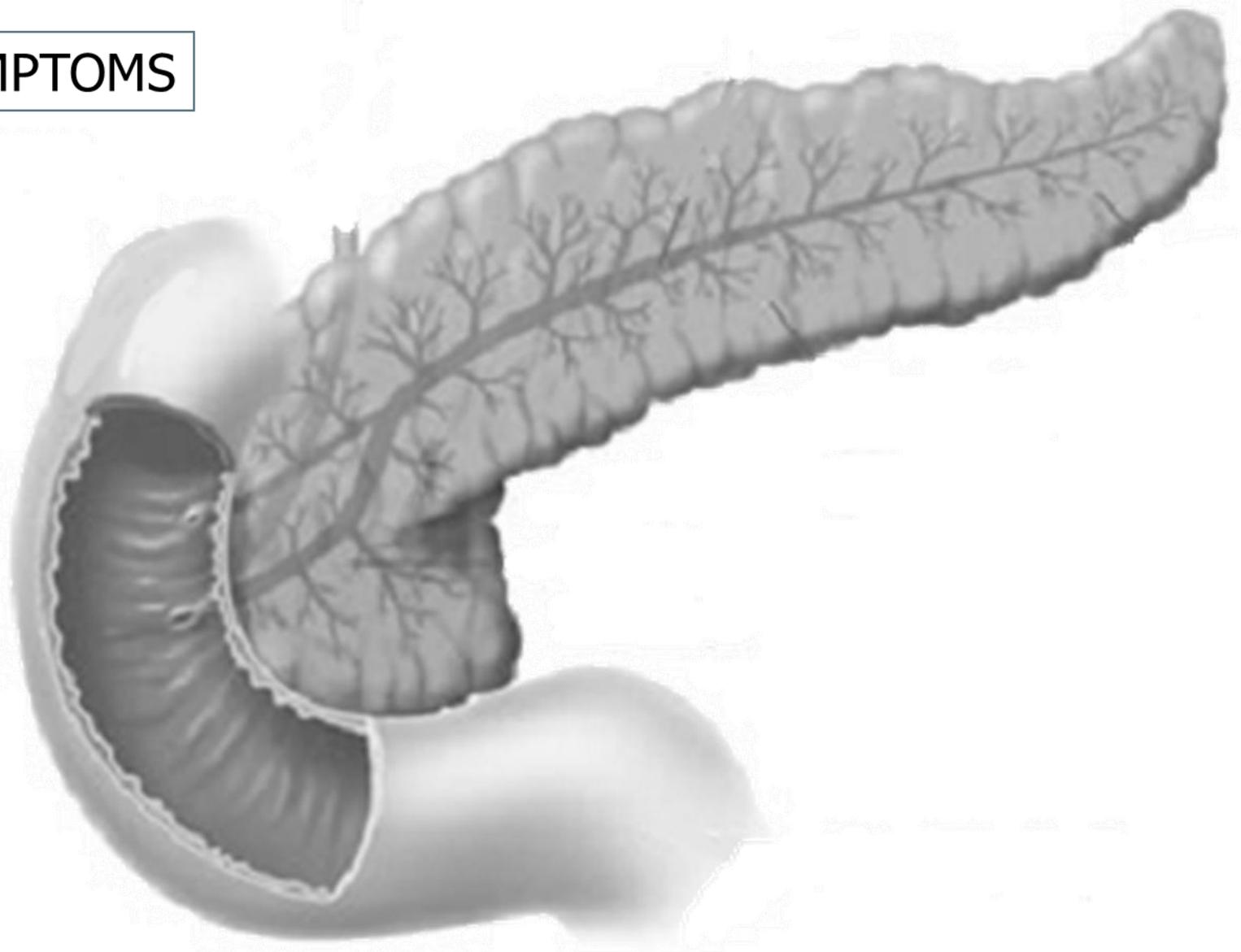
UNDERSTANDING



STENTING



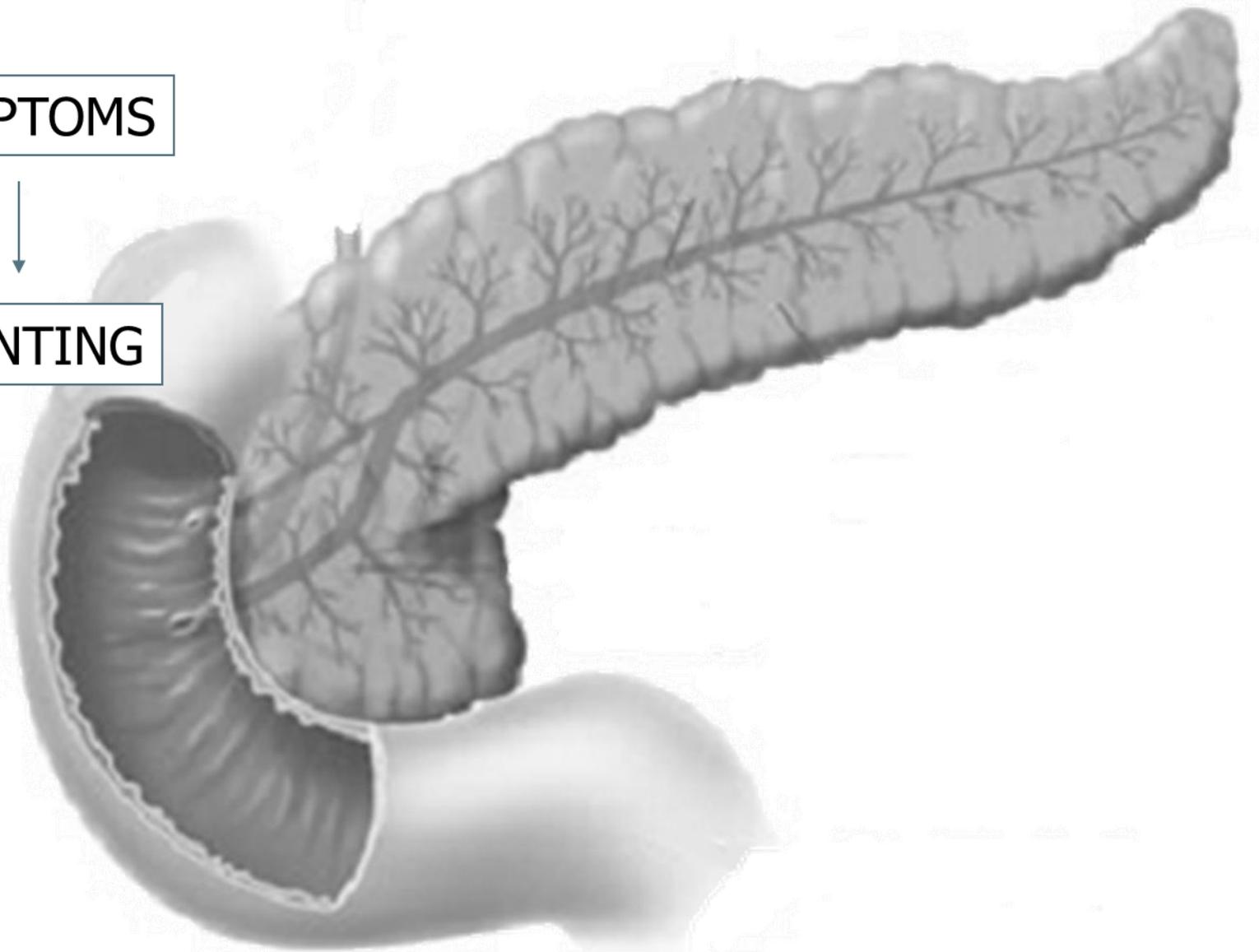
SYMPTOMS



SYMPTOMS



STENTING



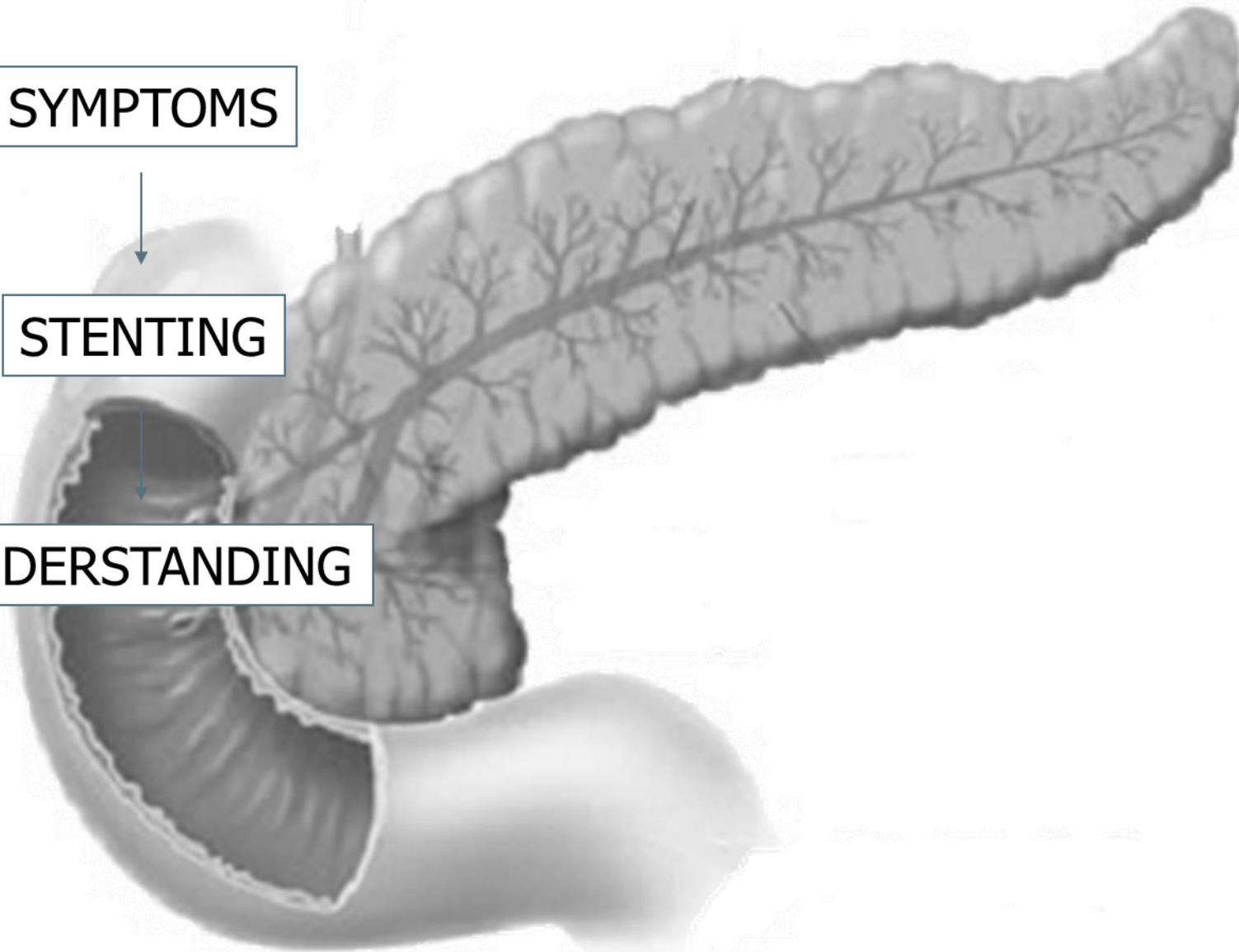
SYMPTOMS



STENTING



UNDERSTANDING



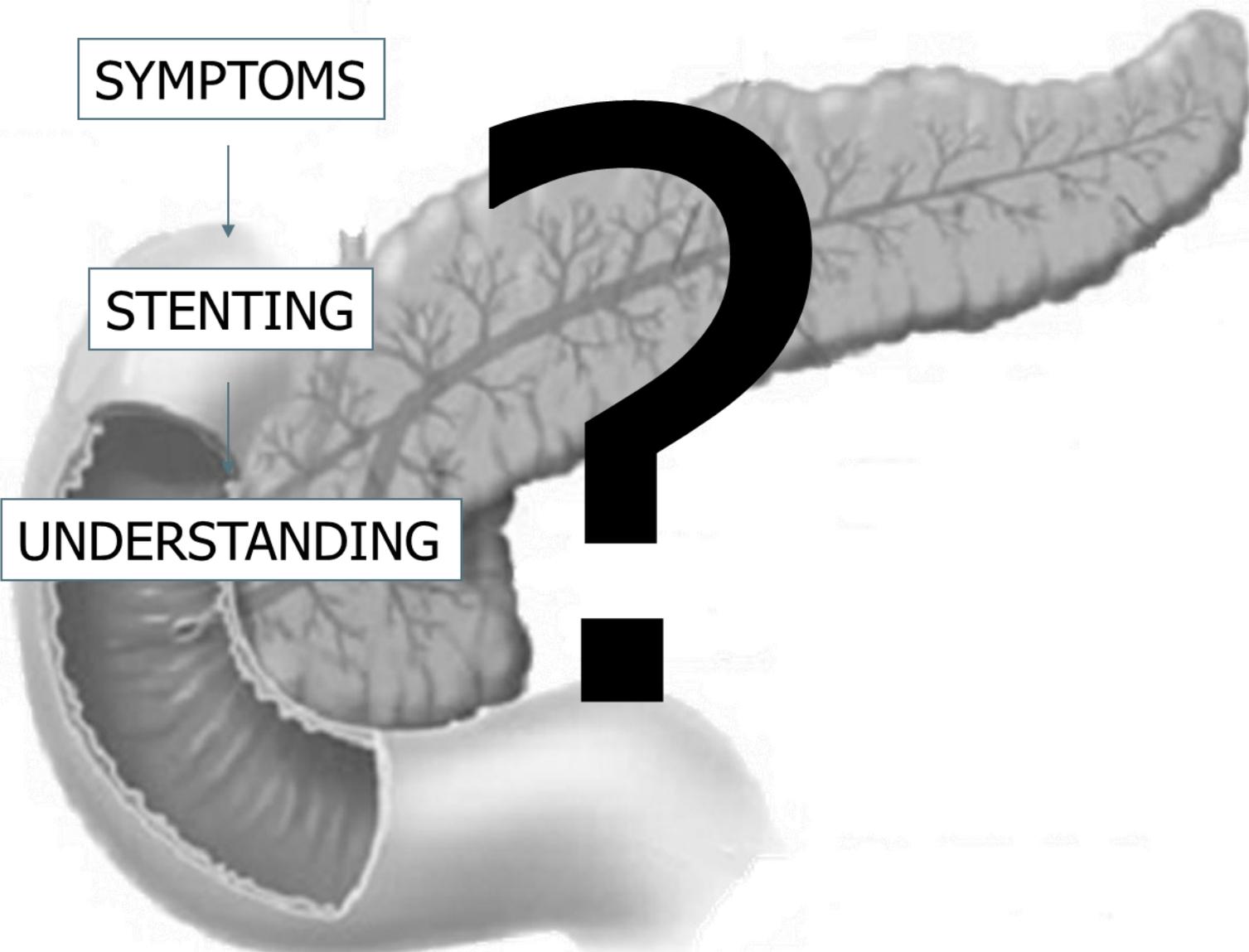
SYMPTOMS



STENTING



UNDERSTANDING



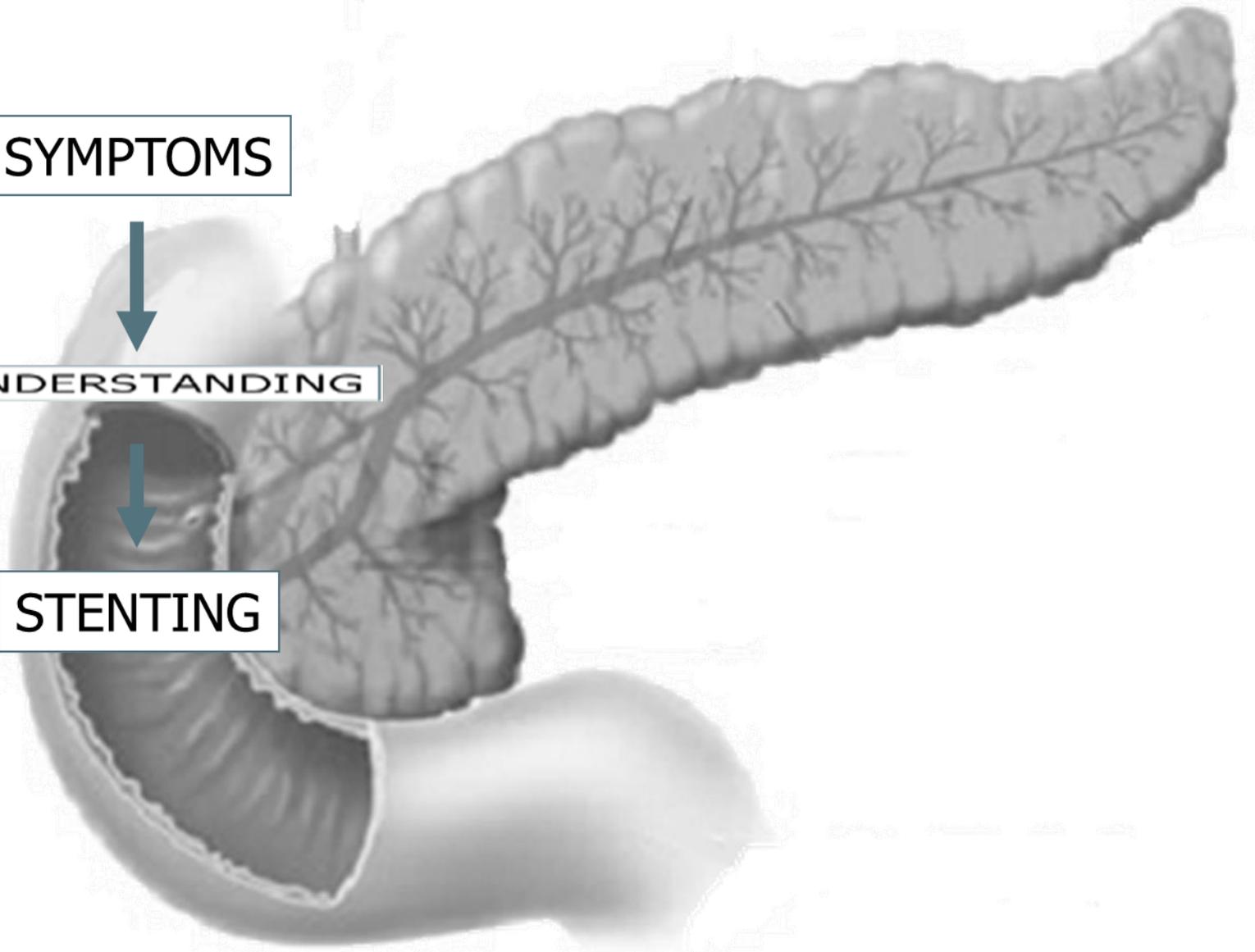
SYMPTOMS

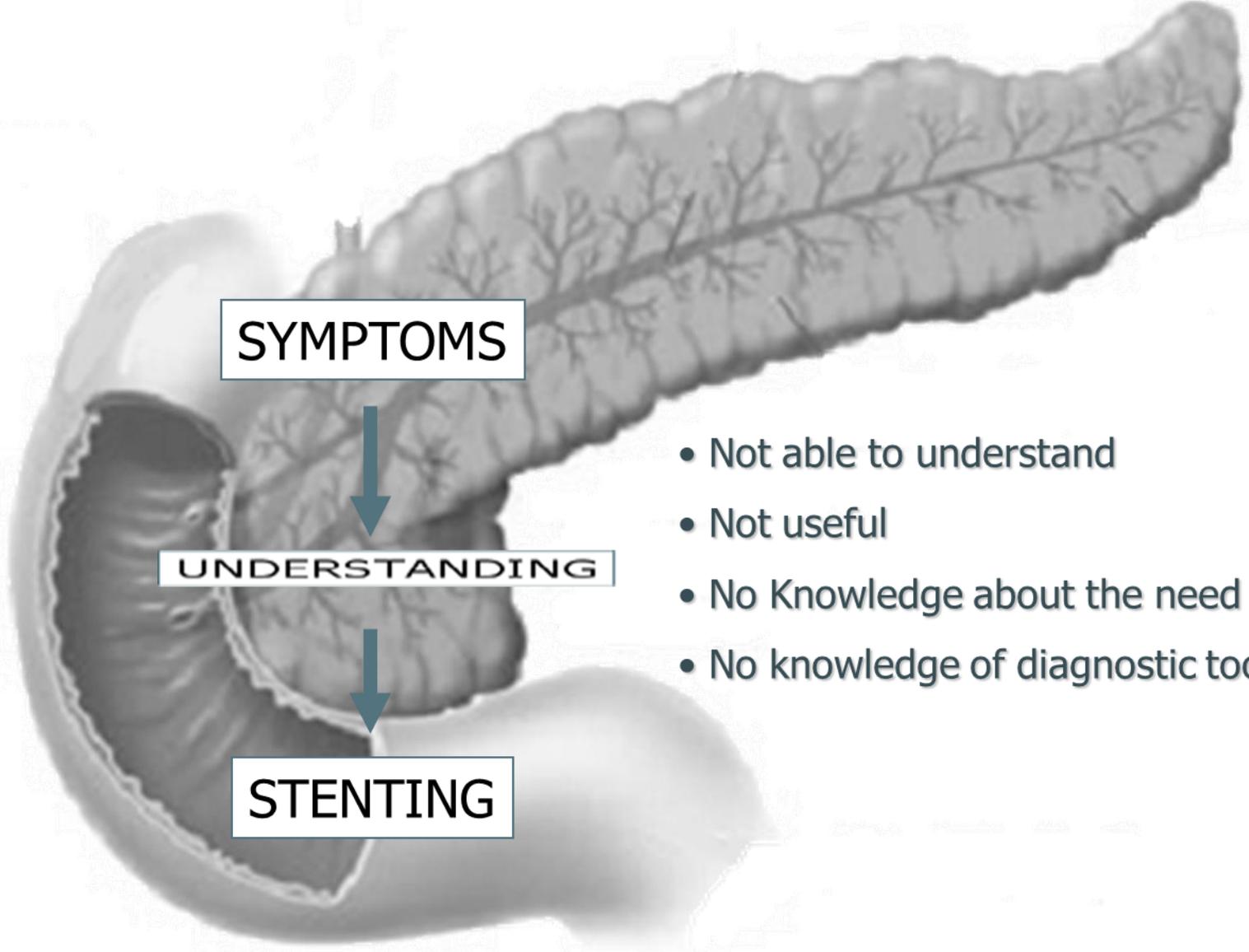


UNDERSTANDING



STENTING





SYMPTOMS



UNDERSTANDING



STENTING

- Not able to understand
- Not useful
- No Knowledge about the need of understanding
- No knowledge of diagnostic tools



**Indicazioni
Tecniche
Complicanze**

Causes of malignant bile duct strictures

Intrahepatic bile ducts	Cholangiocarcinoma Hepatocellular carcinoma Metastatic disease
Extrahepatic bile duct	Cholangiocarcinoma Pancreatic cancer Ampullary malignancy Gallbladder cancer Metastatic disease
Hilar region	Cholangiocarcinoma Bulky porta hepatis lymphadenopathy



Preprocedural checklist

- Lesion resectability and goals of care
- Life expectancy given stage of disease and comorbidities
- Location and length of the lesion
- Plastic versus self-expanding metal stent
- Covered versus uncovered
- Cost comparisons
- Physician comfort level with the procedure



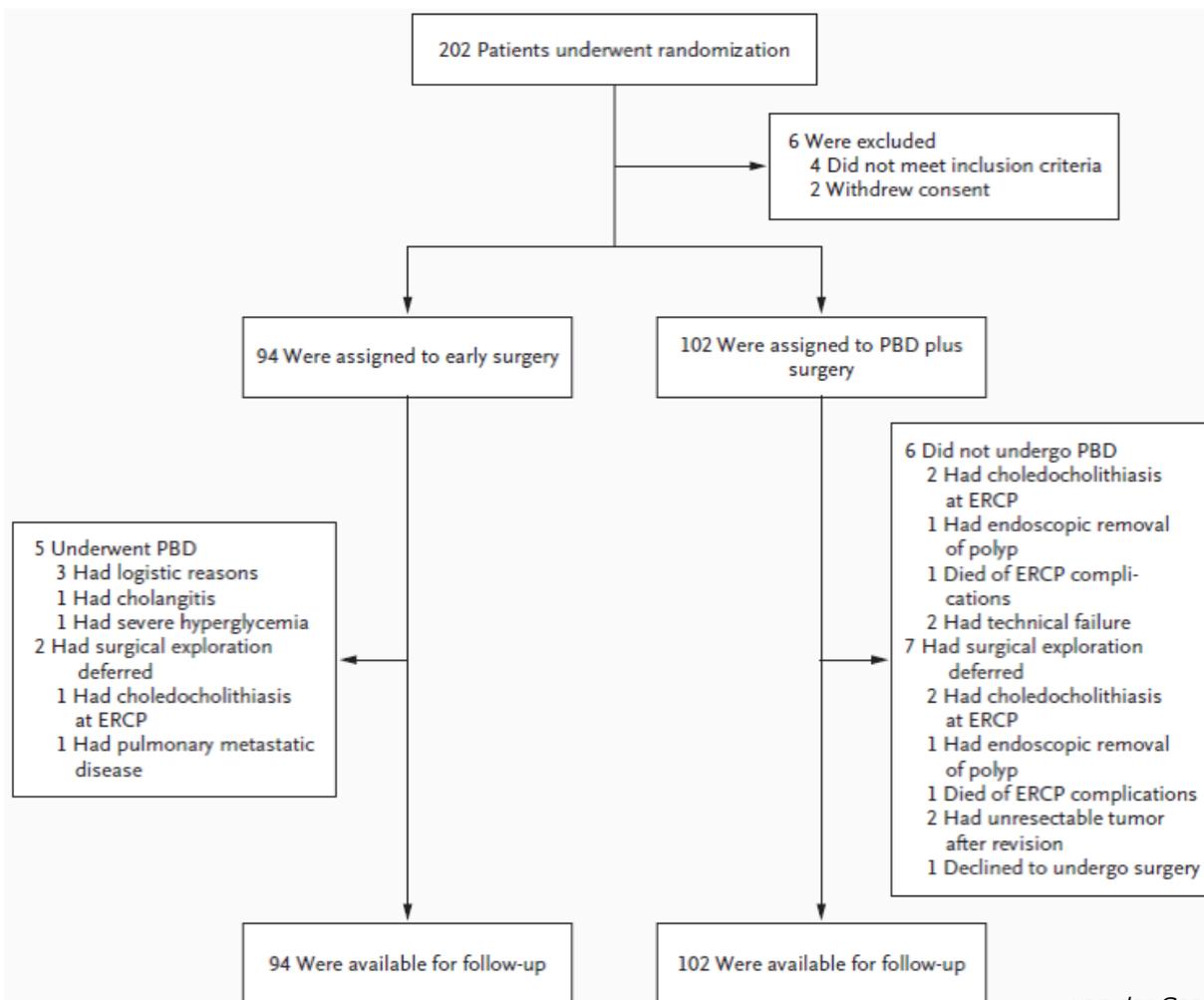
Wang Q, Gurusamy KS, Lin H, Xie X, Wang C



**THE COCHRANE
COLLABORATION®**

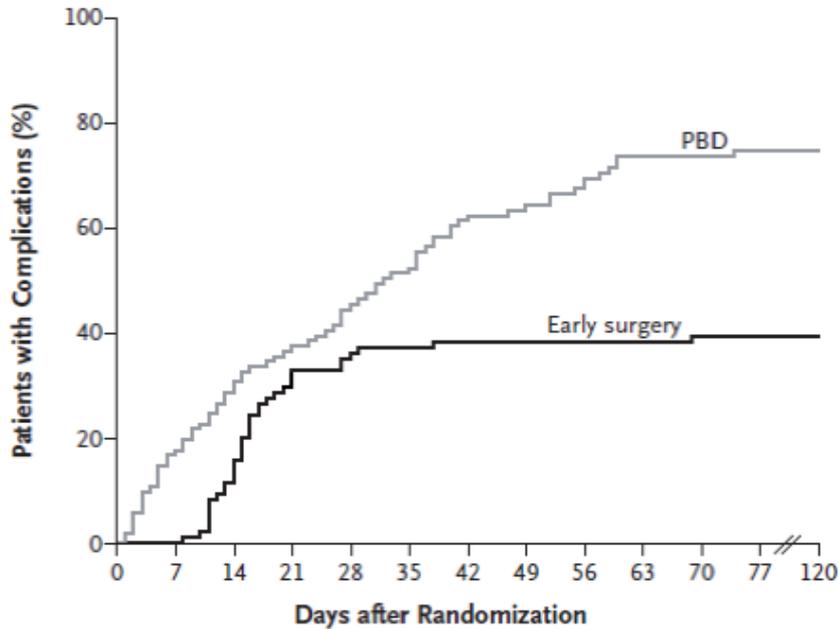
ORIGINAL ARTICLE

Preoperative Biliary Drainage for Cancer of the Head of the Pancreas



ORIGINAL ARTICLE

Preoperative Biliary Drainage for Cancer of the Head of the Pancreas



Rates of serious complications

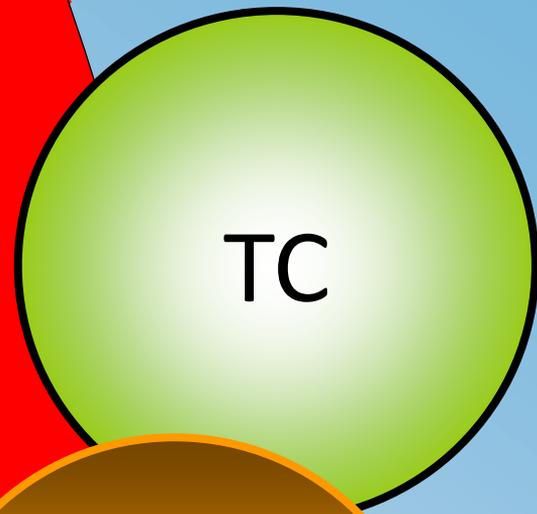
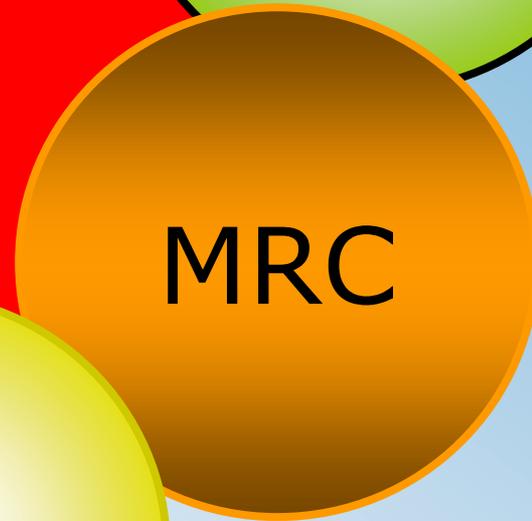
- 39% (37 patients) in the early-surgery
- 74% (75 patients) in the biliary-drainage

P < 0.001

No. at Risk	
PBD	102 84 72 64 56 49 38 36 32 26 25 24 23
Early surgery	94 83 66 61 59 58 58 58 57 55 55 54



Non endoscopic biliary imaging modalities



Endoscopic biliary imaging modalities

EUS

ERC

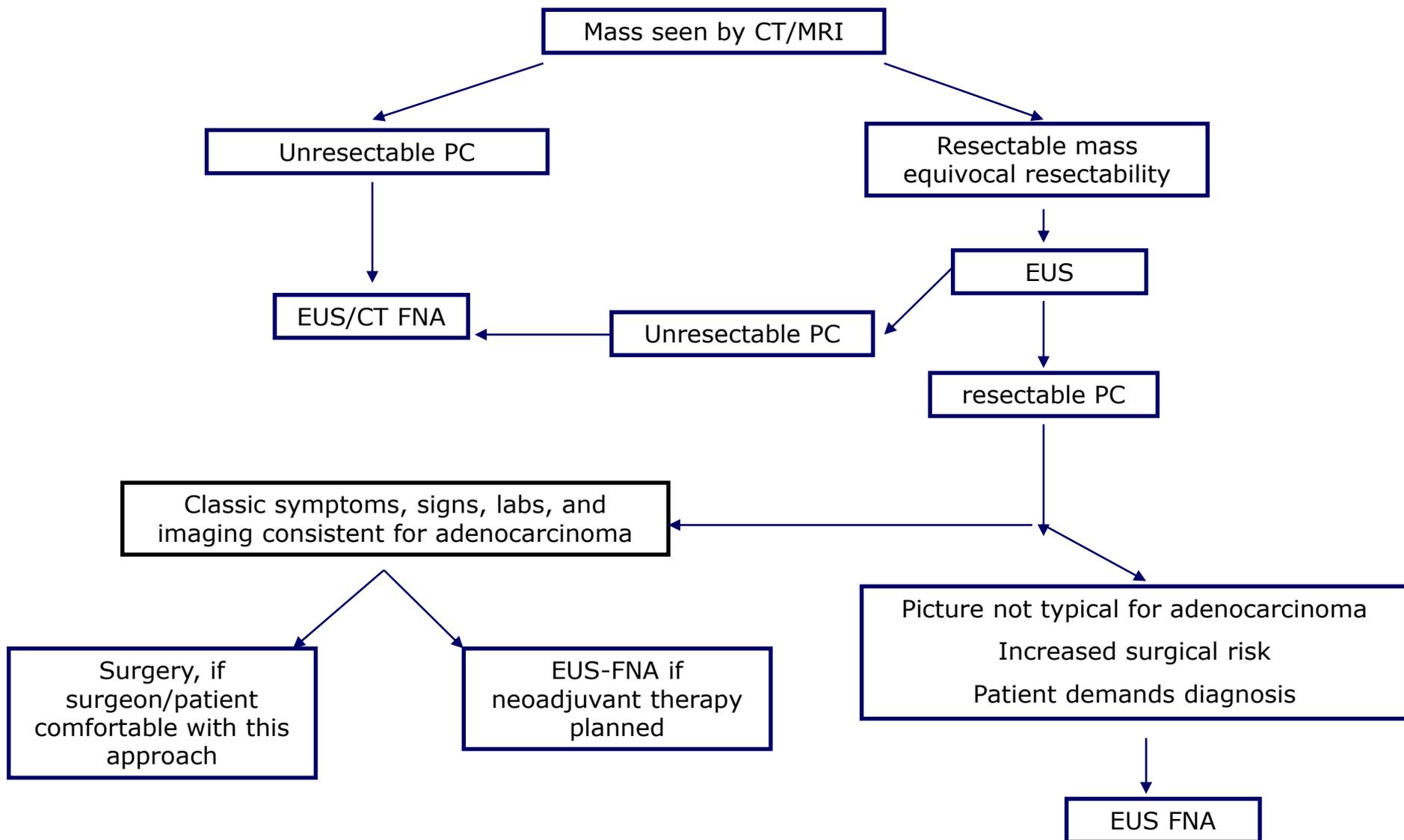
ERC+
Technologies

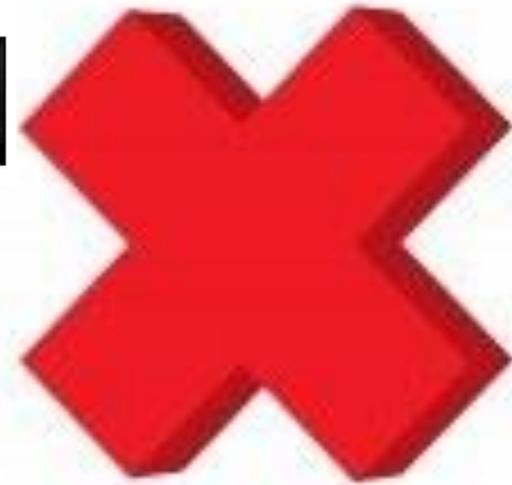
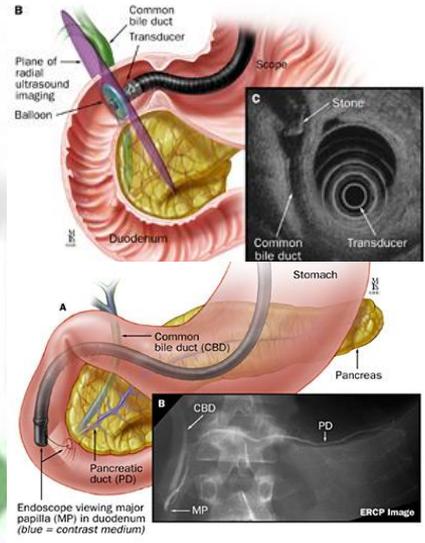
EUS
Directed
ERC



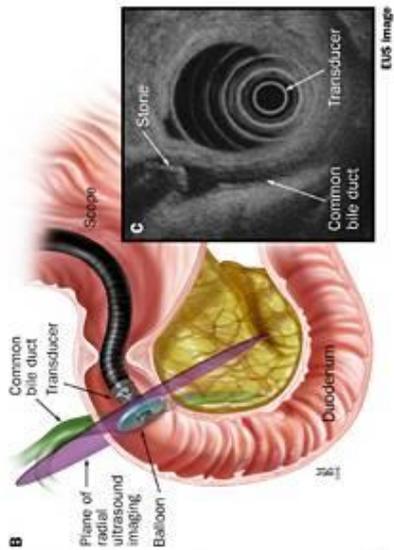


Algorithm for Suspected Panc Mass

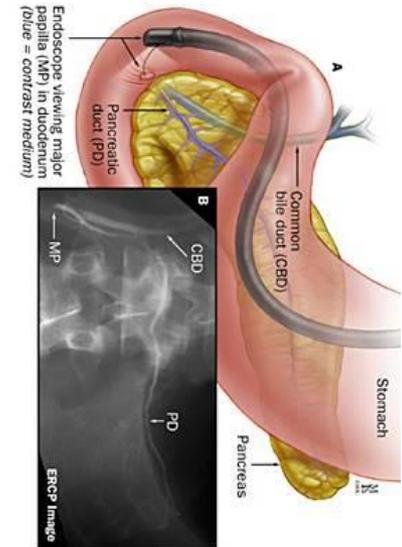


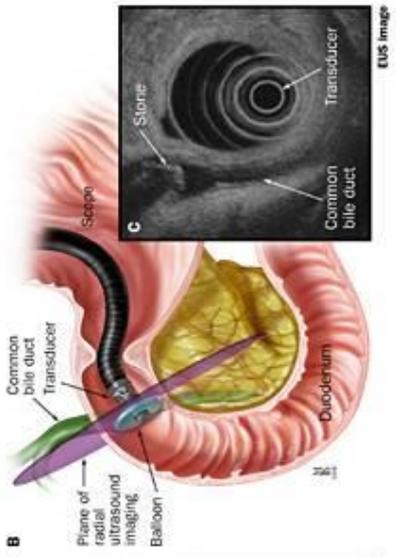
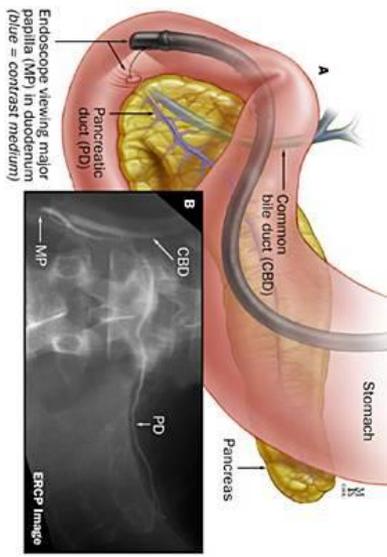


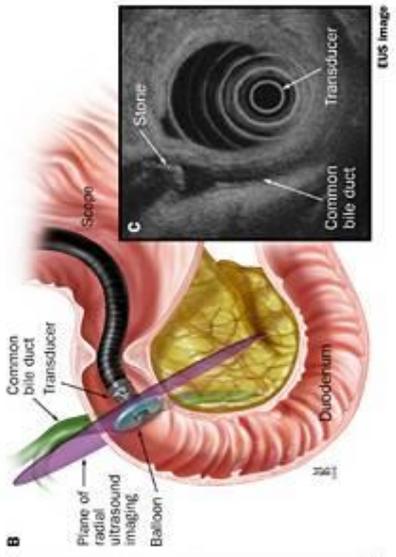
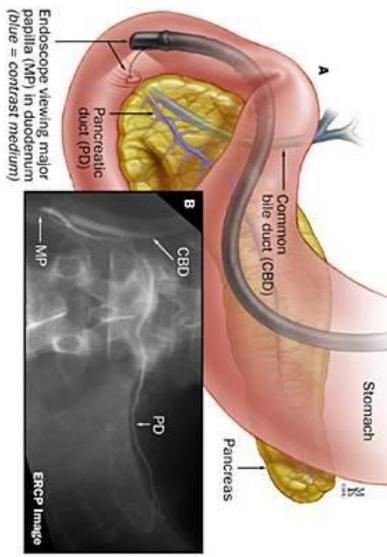
TABELLINE



1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100







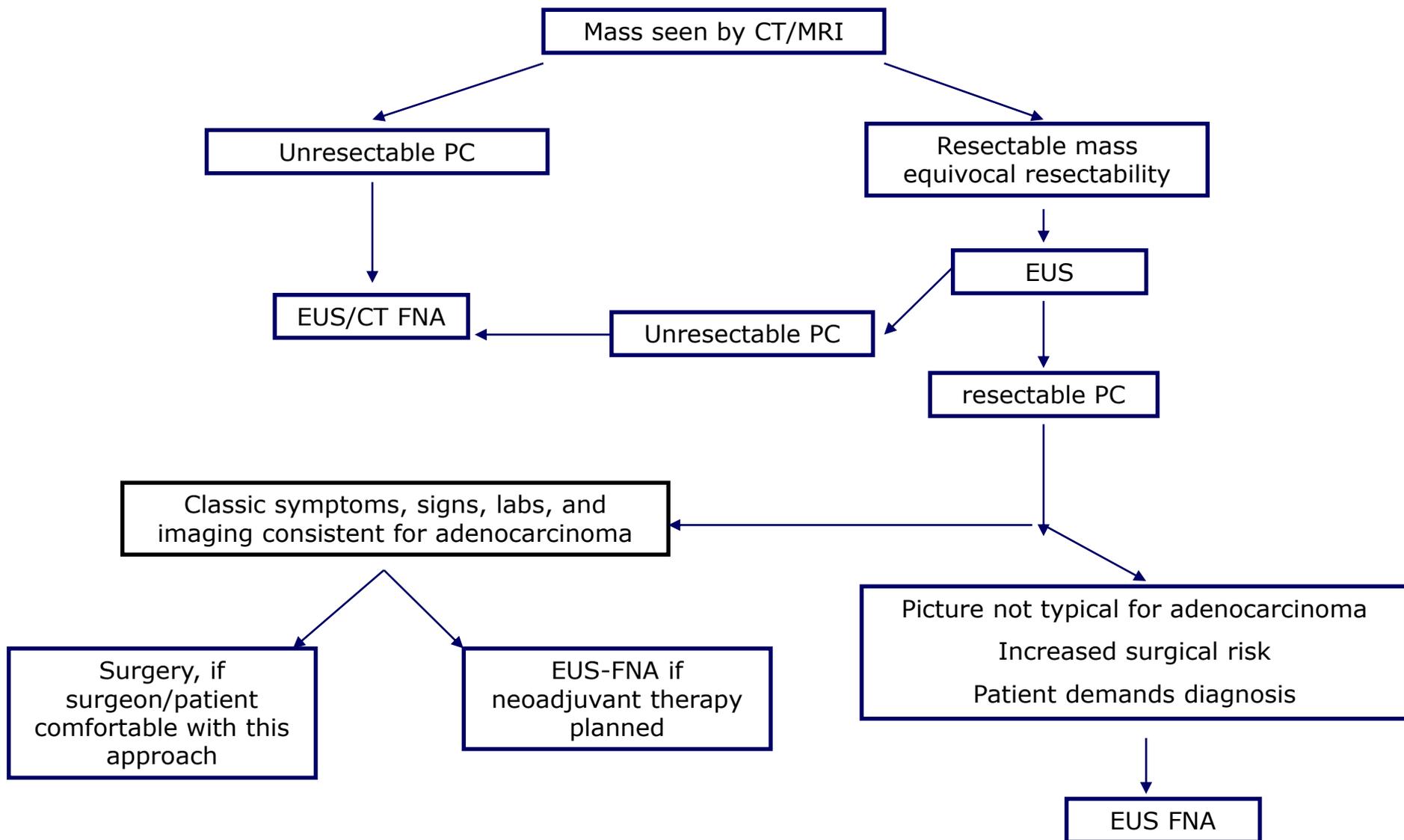
Endoscope viewing major papilla (MP) in duodenum (blue = contrast medium)

ERCP Image

EUS Image



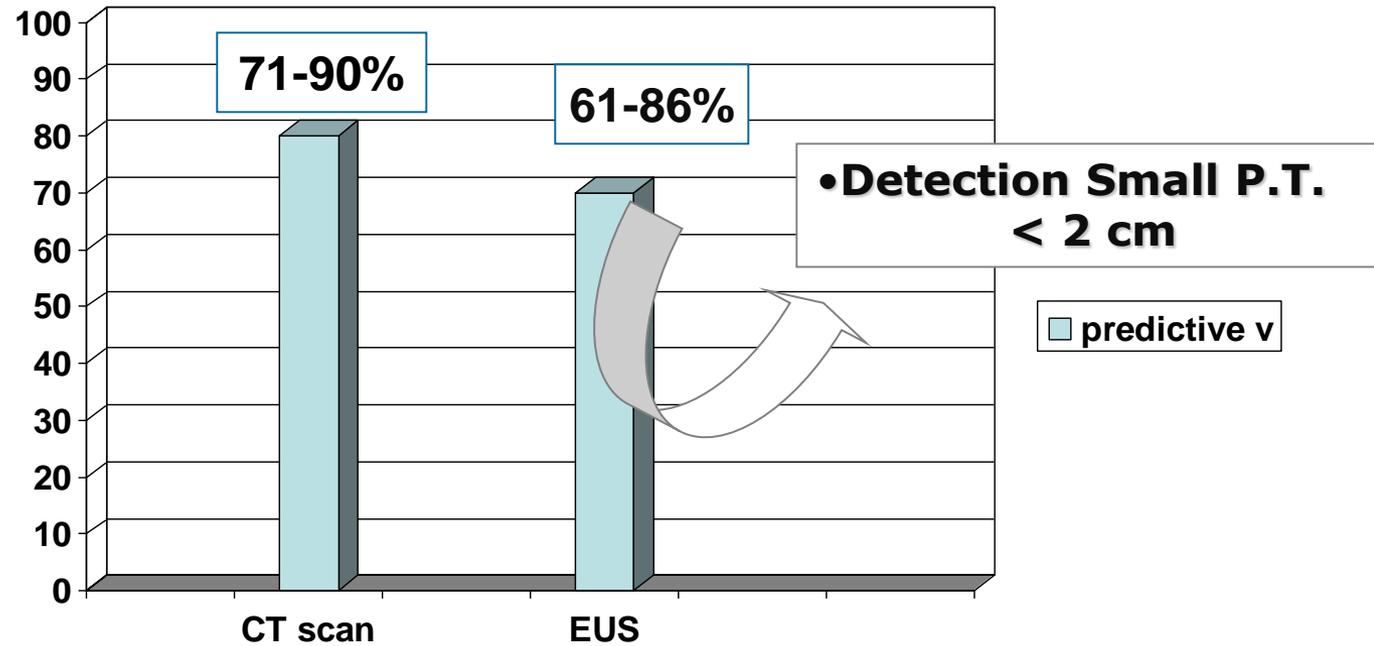
Algorithm for Suspected Panc Mass





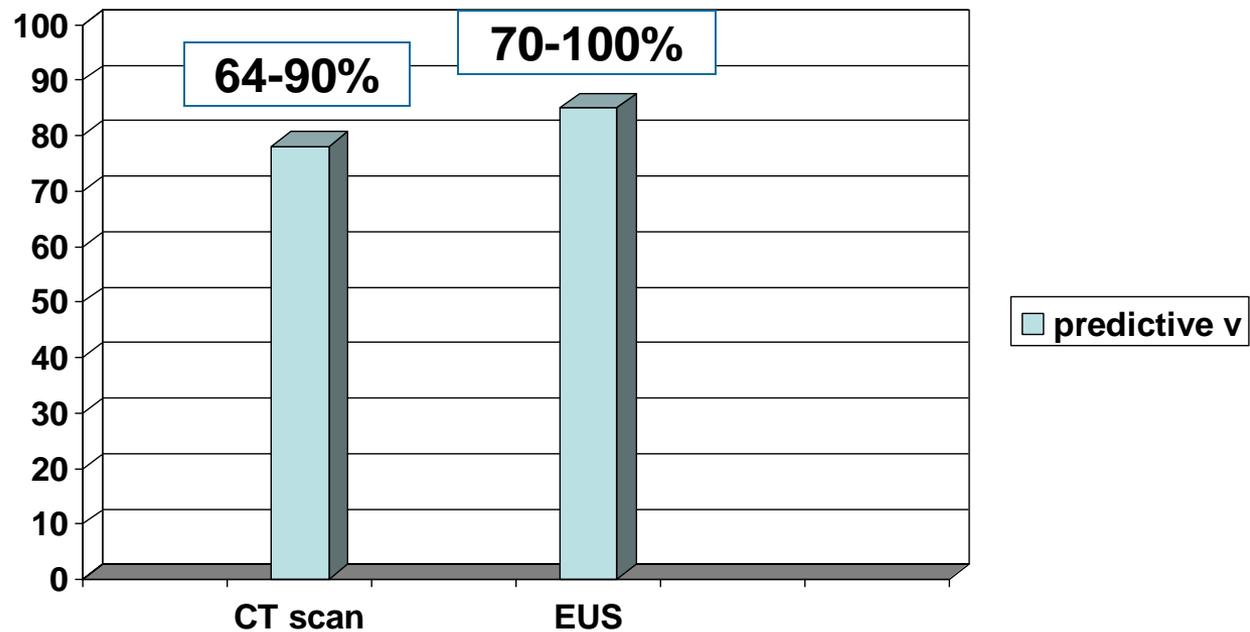
Staging of Solid Pancreatic Tumors

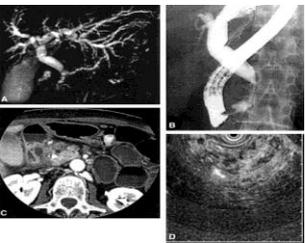
Resectability



Staging of Solid Pancreatic Tumors

Unresectability



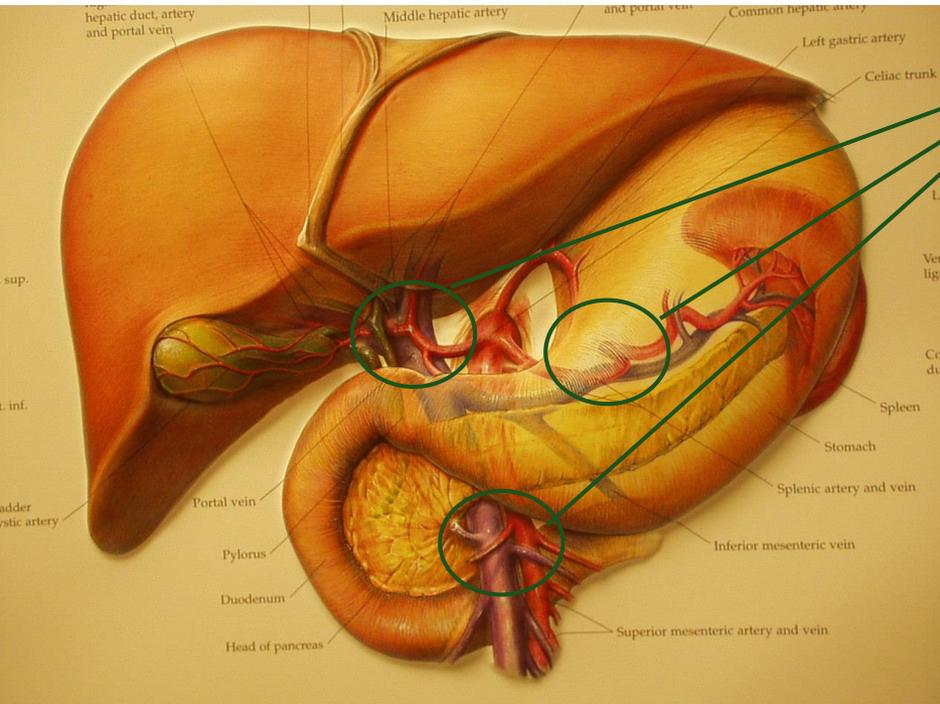


Pancreatic Cancer

DIAGNOSTIC ACCURACY

	EUS	TC
Detection	97%	73%
Resecability	91%	83%
Vascular Invasion	91%	64%

Pancreatic Cancer



Vascular Invasion

Sensitivity: **50-90%**

Specificity: **90-100%**

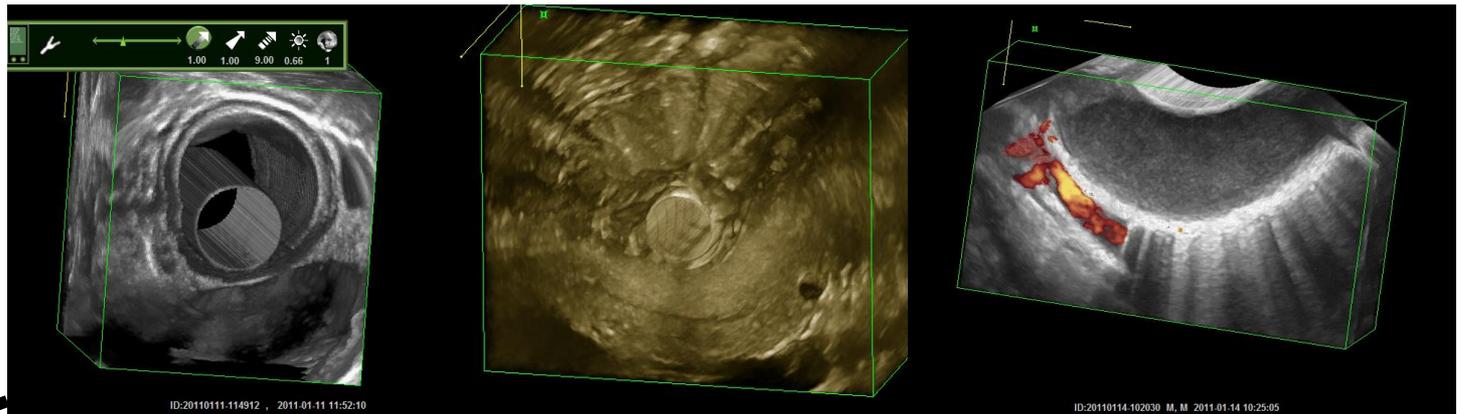
PV/confluence: EUS superior

SMV: Equivalent (~CT)

Celiac trunk: Equivalent (~CT)

HA, SMA: CT superior

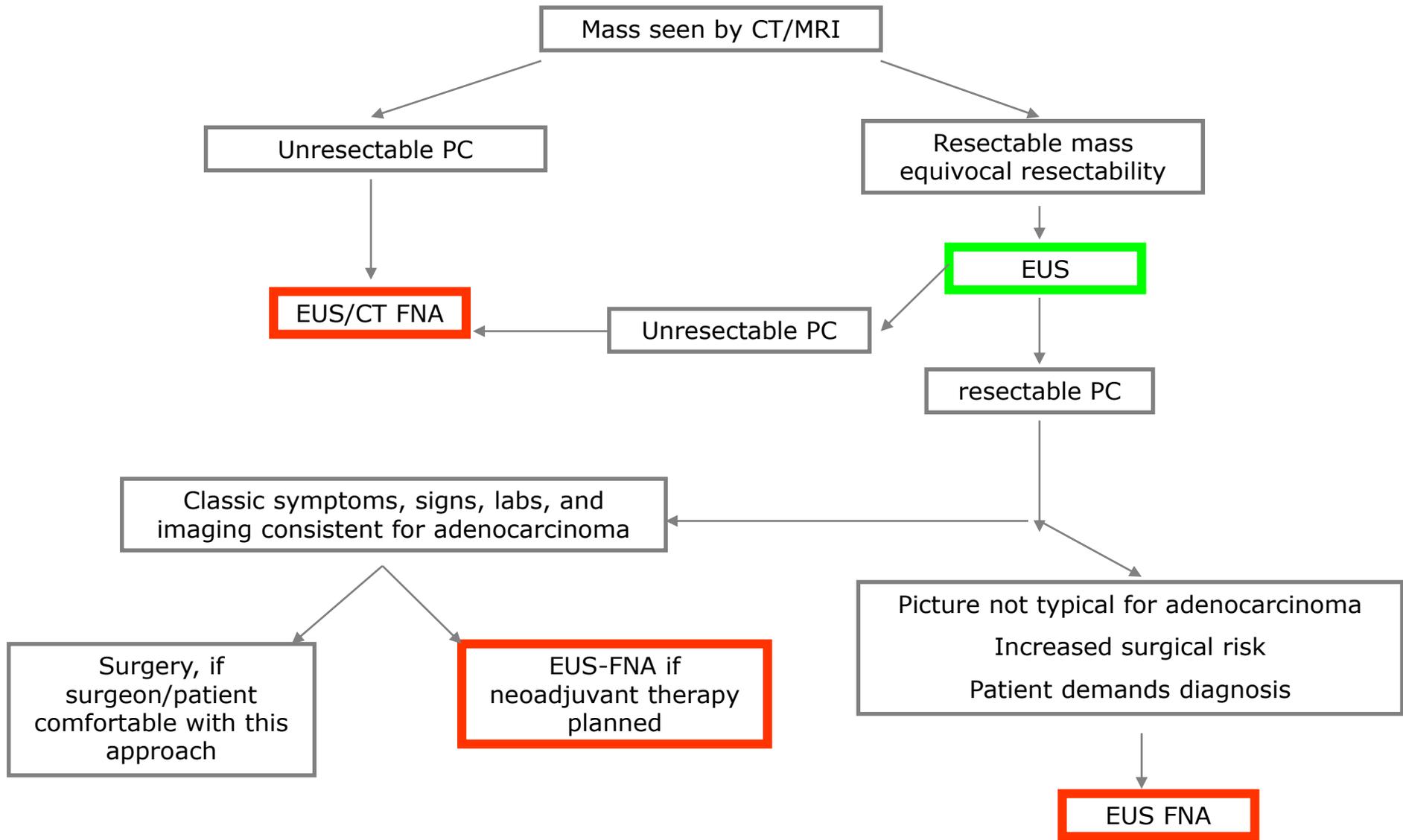
Three-Dimensional Linear Endoscopic Ultrasound Feasibility of a Novel Technique Applied for the Detection of Vessel Involvement of Pancreatic Masses



	Linear EUS	3D	Surgery
Tumor invasion	10 (3FP) + (1FP) (+1)	6 (+1)	7
Tumor compression	6 (+2) + (+1)	10 (-1)(1FN) (+1)	9
No vessel involvement	6 (+1) (1FN)	6 (+1) (-1)	6

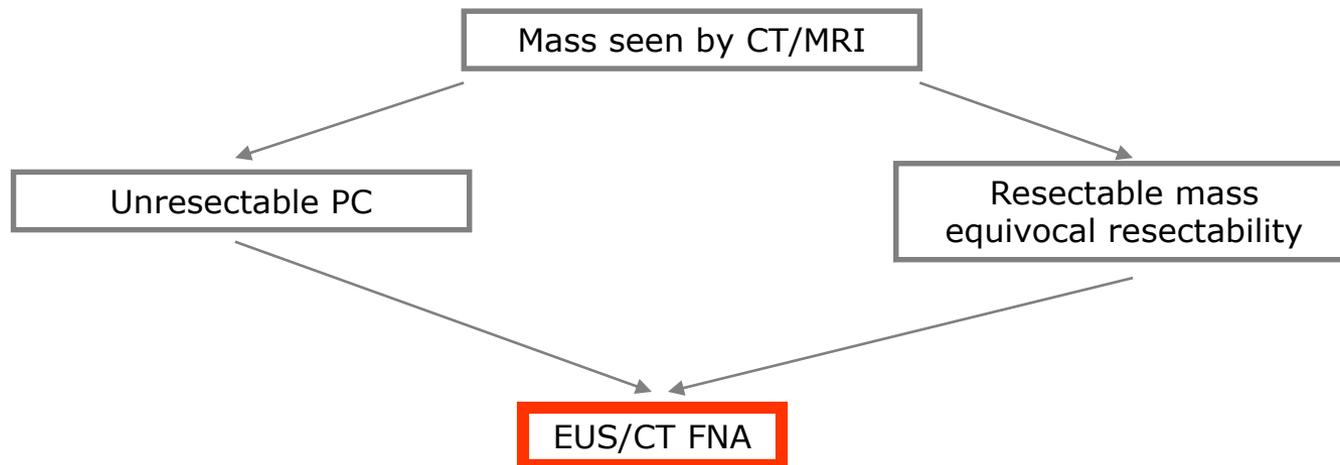


Algorithm for Suspected Panc Mass





Algorithm for Suspected Panc Mass



Indications for the use of EUS-FNA

- ✓ To document a diagnosis of malignancy in a patient with an unresectable mass as a prerequisite for adjuvant chemotherapy or radiation therapy
- ✓ To exclude other tumor types
- ✓ patients who are reluctant to undergo major surgery without a definitive diagnosis
- ✓ To document the absence of malignancy when the pretest probability of malignancy is low
- ✓Neoadviant therapy

Pancreatic Cancer

Clinical Impact of EUS-FNA

99 patients eligible for surgery

Metastatic distant lymph nodes	6
Liver metastasis	4
Malignant ascites	1
Retroperitoneal infiltration	1

**EUS FNA influenced
Management in 12%**

Performance of EUS-FNA: Solid Pancreatic Tumors



- Celiac mesenteric region
- Hepatic pedicle
- Entire pancreas
- Lymph nodes
- Aspirate ascitic Fluid
- Left liver node

infonodo-mediasunico.avi

Celiac
Lumboaortic
Retroduodenopancreatic
Superior Mesenteric
Mediastinal

Performance of EUS-FNA: Solid Pancreatic Tumors

- Celiac mesenteric region
- Hepatic pedicule
- Entire pancreas
- Lymph nodes
- Aspirate ascitic Fluid
- Left liver node

Peritoneal
Carcinomatosis



Performance of EUS-FNA: Solid Pancreatic Tumors

- Celiac mesenteric region
- Hepatic pedicule
- Entire pancreas
- Lymph nodes
- Aspirate ascitic Fluid
- Left liver node



Small metastasis
Sensibility: 100%

Resectable Tumors Should FNA be performed?

503 pts

Adenocarcinoma	78,5%
Mucinous cystic neoplasm	5,4%
Metastatic tumor	3,9%
Neuroendocrine tumor	3,8%
Poorly differentiated carcinoma	3,0%
Lymphoma	2,8%
Serous Cystadenoma	1,8%
Solid pseudopapillary tumor	0,8%

Resectable Tumors

Should FNA be performed?

Adenocarcinoma	78,5%
Mucinous cystic neoplasm	5,4%

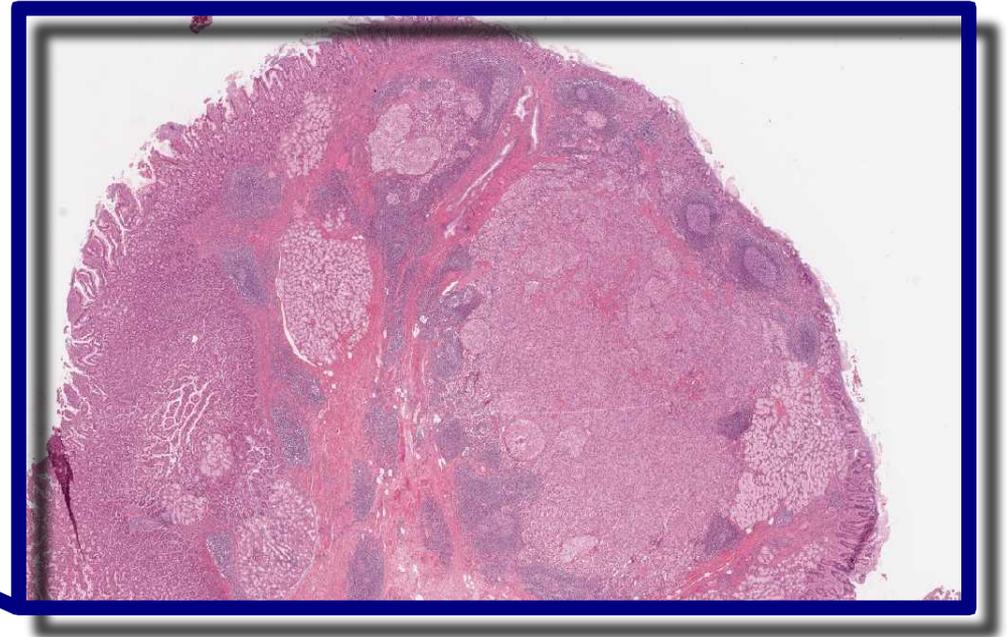
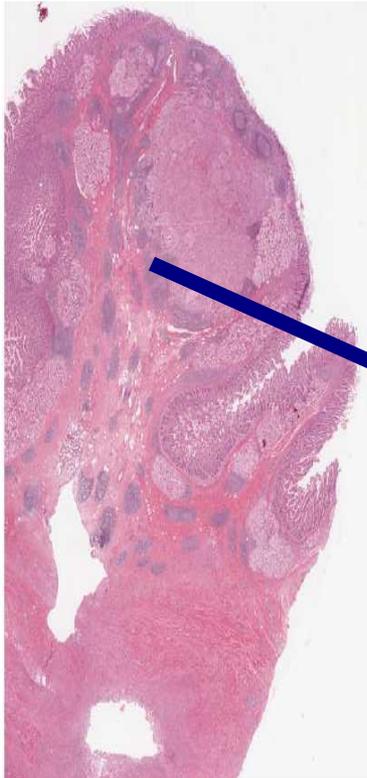
Benign lesions

- Pseudotumor Chronic pancreatitis
- Groove pancreatitis
- PAI tipo I e II

Solid pseudopapillary tumor)	0,8%
------------------------------	------

GEP-NETs

Paranganglioma Gangliocitico Ampollare



Chronic pancreatitis

Shounak Majumder, Suresh T Chari

THE LANCET



Chronic calcifying pancreatitis

- Alcohol
- Smoking
- Genetic
- Idiopathic
 - Juvenile-onset
 - Tropical
 - Senile-onset

Chronic obstructive pancreatitis

Stricture

- Blunt trauma
- Endoscopic stenting
- Acute pancreatitis
- Anastomotic stricture

Tumour

- Adenocarcinoma
- IPMN
- Serous cystadenoma
- Islet cell tumour

Steroid-responsive pancreatitis

Autoimmune pancreatitis

- Type 1
- Type 2 (IDCP)

**Steroid-responsive
pancreatitis**

Autoimmune pancreatitis

- Type 1
- Type 2 (IDCP)

	Type 1	Type 2
Median age of onset	Seventh decade	Third decade
Sex difference	Male predominant (3:1)	Equal predisposition (1:1)
Other organ involvement	Common (60%)	None
Inflammatory bowel disease	Less than 10%	About 30%
Serum IgG4 increase (>1.40 g/L)	Commonly present (>80%)	Usually absent (<10%)
Histological hallmarks		
Granulocyte epithelial lesion	Absent	Present
IgG4 staining	Prominent	Scant
Response to corticosteroid treatment	Universal	Universal

EUS-guided FNA for diagnosis of solid pancreatic neoplasms: a meta-analysis

TABLE 2. Classification of FNA cytology*

Classification 1	Classification 2
Inadequate, negative	Inadequate, negative
Benign on EUS-FNA, negative	Benign on EUS-FNA, negative
Suspicious/atypical results on EUS-FNA, negative	Suspicious/atypical results on EUS-FNA, positive
Malignancy on EUS-FNA, positive	Malignancy on EUS-FNA, positive

ic,¹ Mark J. W. McPhail, MRCP, PhD,² Lucia Possamai, MRCP,¹ otis Vlavianos, MD, FRCP,² Kevin J. Monahan, MRCP, PhD³

EUS-FNA, EUS-guided FNA
*Classification 1 is more s

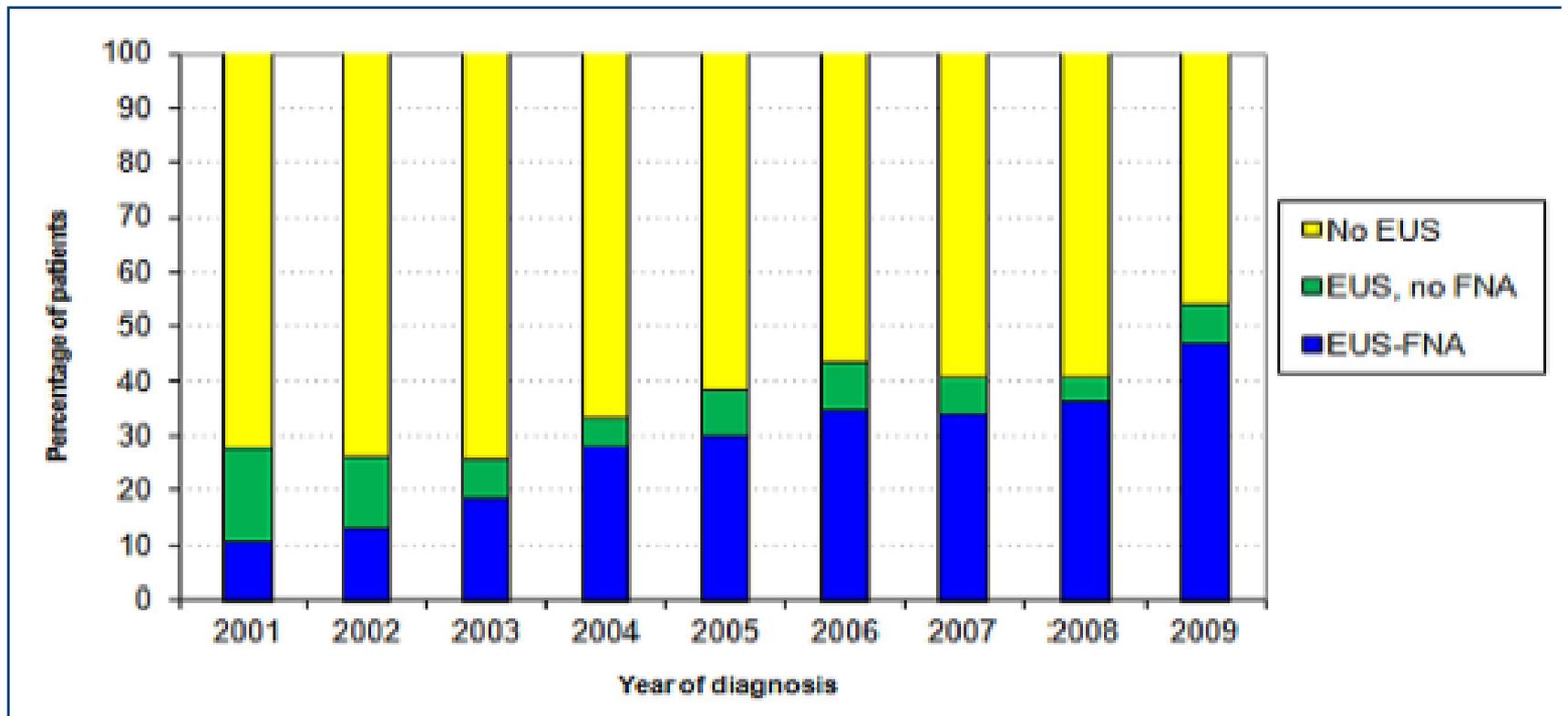
Classif. 1

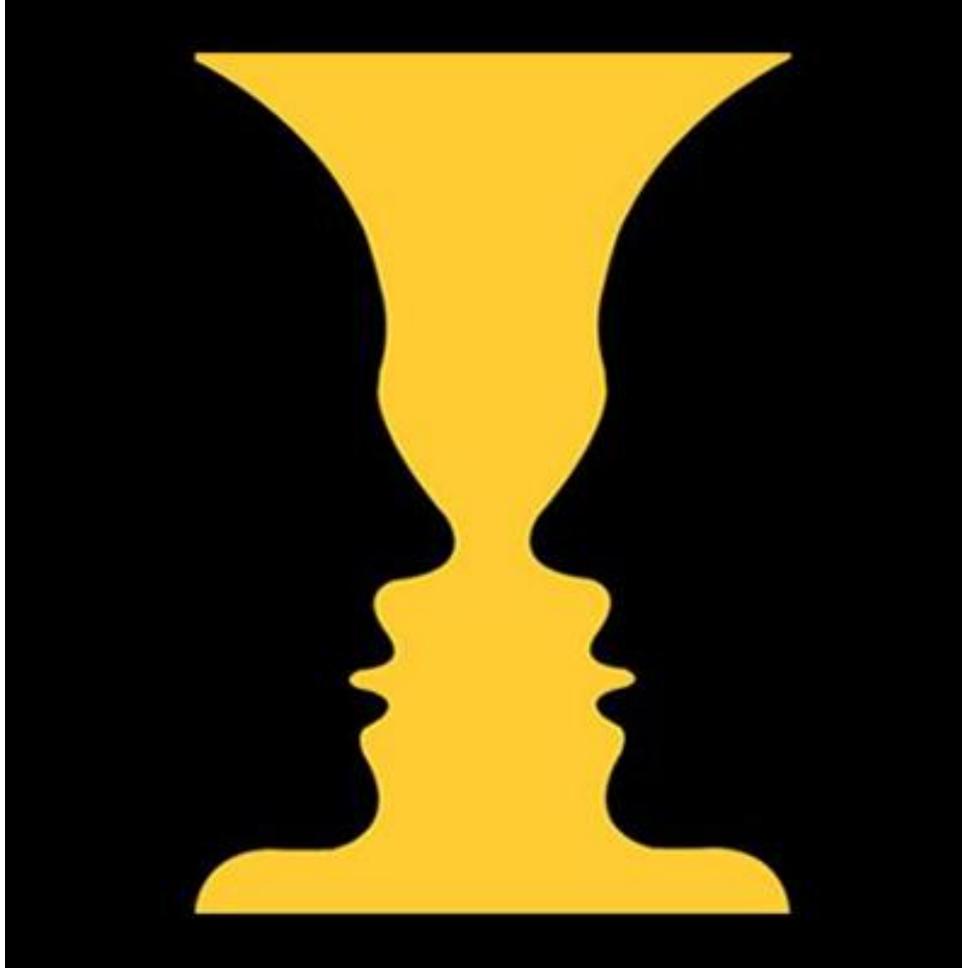
Sensibilità	Specificità	VPP	VPN
85%	98%	99%	64%

Classif. 2

91%	94%	98%	72%
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Trends in the use of EUS-FNA in patients with locoregional pancreatic cancer who underwent curative intent surgery

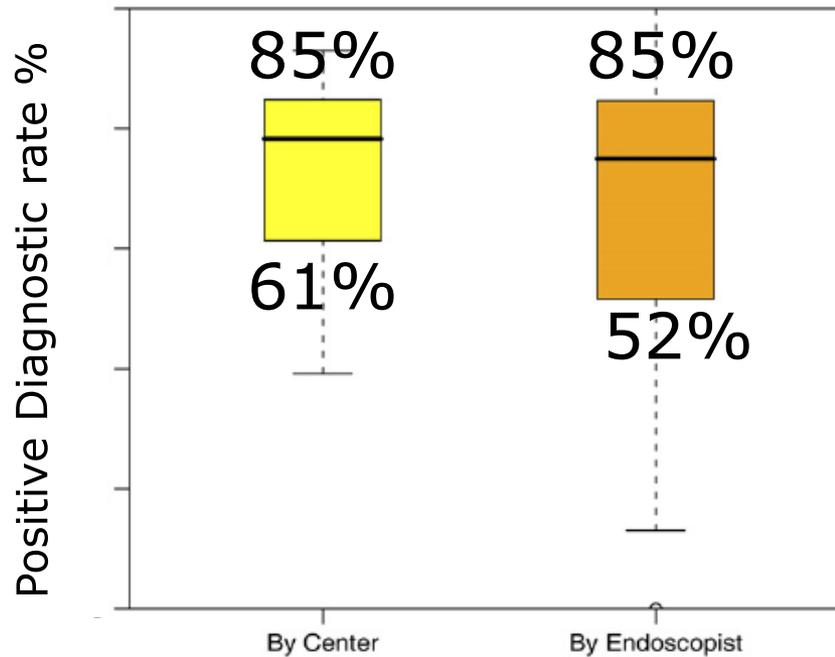


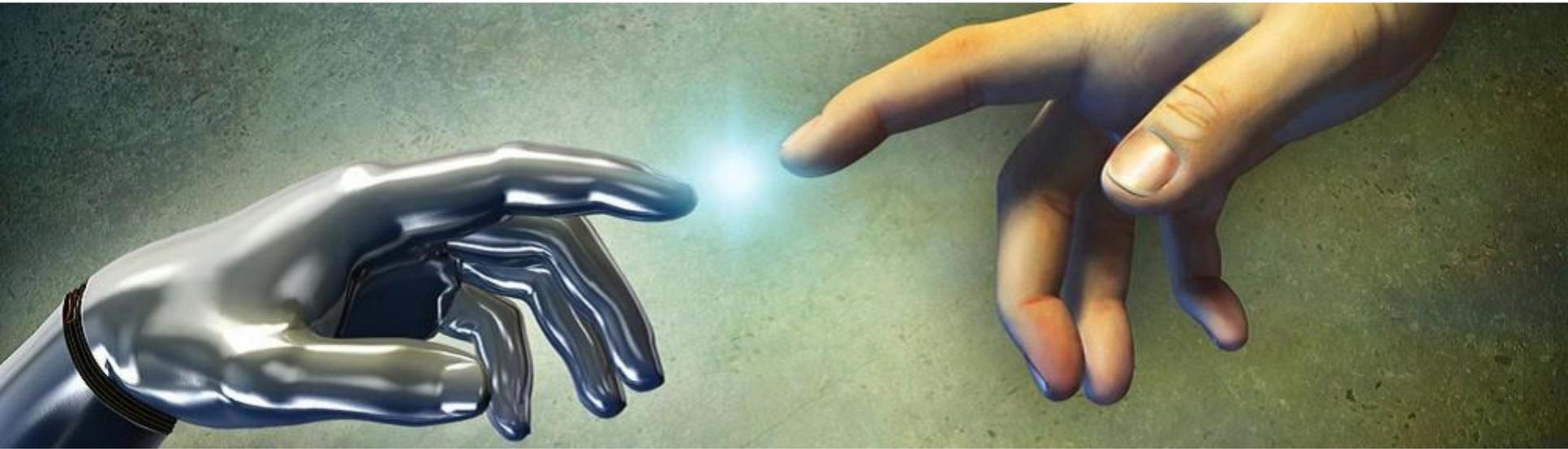


EUS-guided FNA: a benchmark for quality performance measurement

1075 ptz

21 centers/41endoscopist





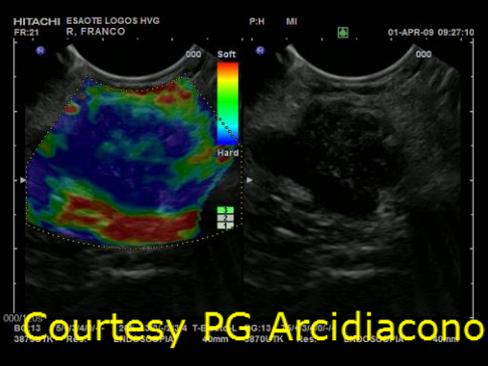
Differential Diagnosis

- ✓ Pancreatic cancer
- ✓ Cholangiocarcinoma



ACCURACY	
EUS	78%
IDUS	86%

P<0.002

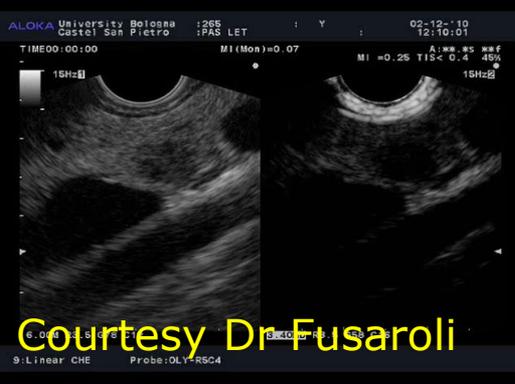


Cancer vs Chronic Pancreatitis Elastosonography

Author (yr)	No. Pts	Sen (%)	Spe (%)	PPV (%)	NPV (%)	Acc (%)
Saftoiu, '08	68	91.4	87.9	88.9	90.6	89.7
Hirche, '08	70	41	53	--	--	45
Giovannini, '09	121	92.3	80	93.3	77.4	89.4
Iglesias-Garcia, '09	130	100	85.5	90.7	100	94
Iglesias-Garcia, '10*	86	100	92.9	96.7	100	97.7

* Second generation EUS elastography

Cancer vs Chronic Pancreatitis Contrast-Enhanced Harmonic EUS



Courtesy Dr Fusaroli

Author (yr)	No. Pts	Sen (%)	Spe (%)	PPV (%)	NPV (%)	Acc (%)	
Hocke, '06	86	73.2	83,3	--	--	--	
Fusaroli, '10	90	Hypoenhancing lesion*	96	64	78	93	82
Hyperenhancing lesion*		39	98	94	68	72	
Hyperenhancing lesion#		69	90	56	95	88	
Napoleon, '10*	35	72	100	100	77	86	
Seicean, '10*	24	80	91.7	92.8	78	--	

Predictors of *Adeno Ca and #NET

CHE-EUS in pancreatic tumors

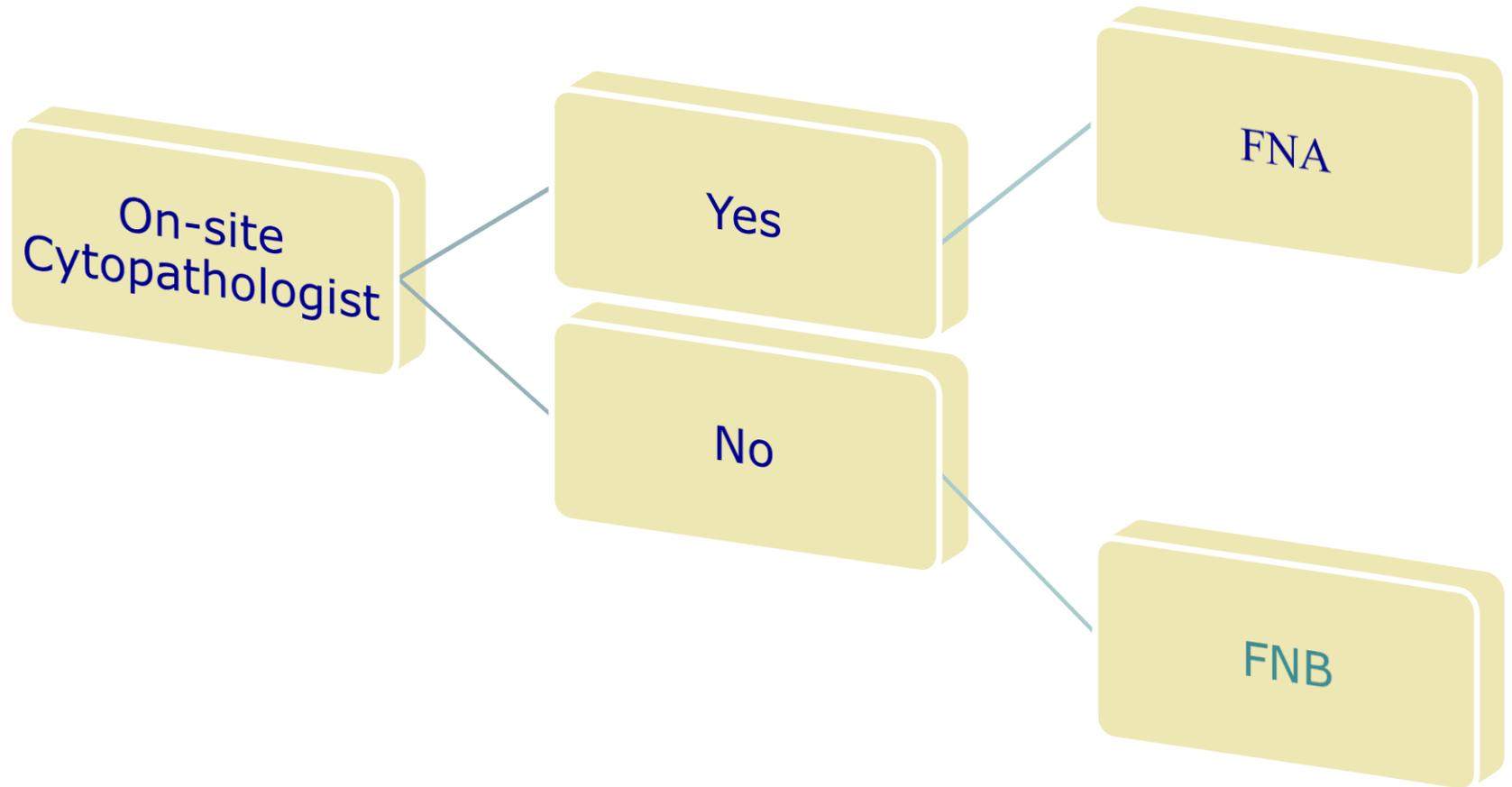
- ✓ Identified pancreatic tumor
- ✓ Increased detection (difficult cases)
- ✓ Help EUS-FNA
- ✓ Rule out cancer

NEDDLES

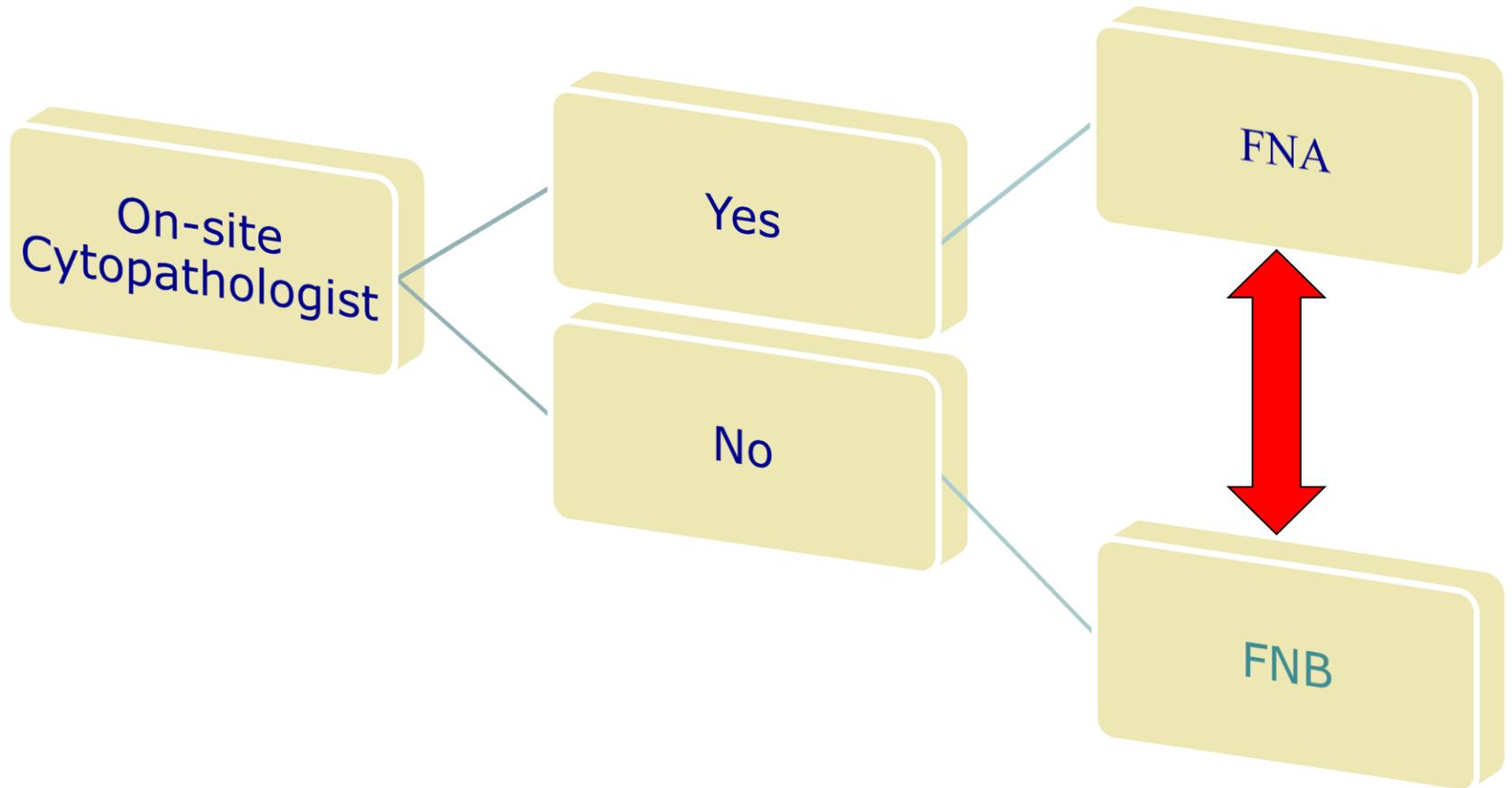


- 25 G
- 22 G
- 19 G
- Tru-cut
- Echo-Brush

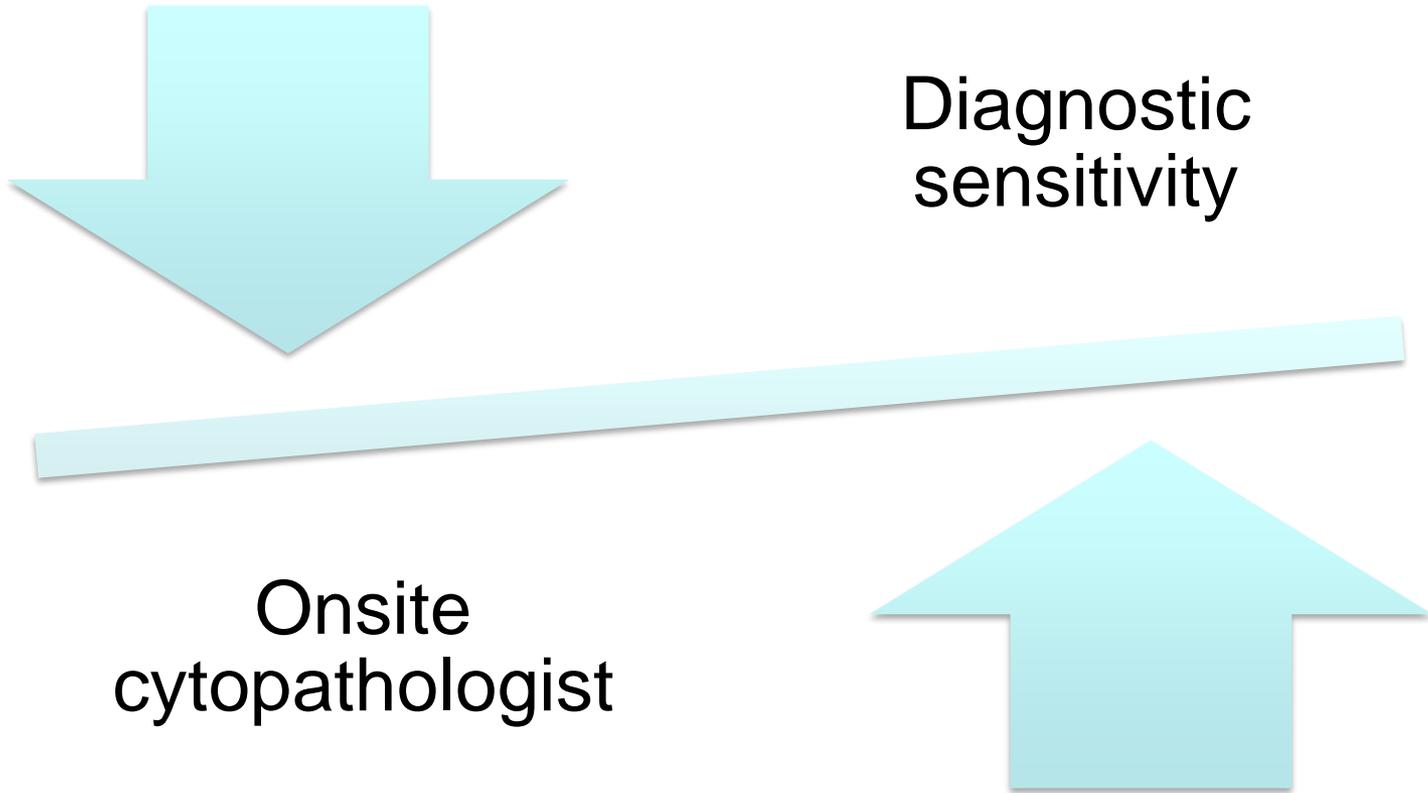
ROSE: the big dilemma



ROSE: the big dilemma



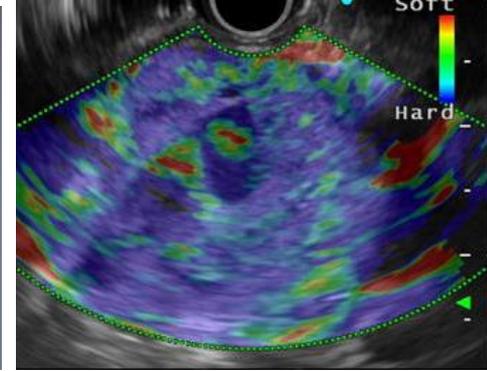
Do you have a onsite pathologist?



Survey

Available	Normal	Selected cases
ROSE	28%	15.1%

Technical aspects NEEDLES



Boston
Scientific

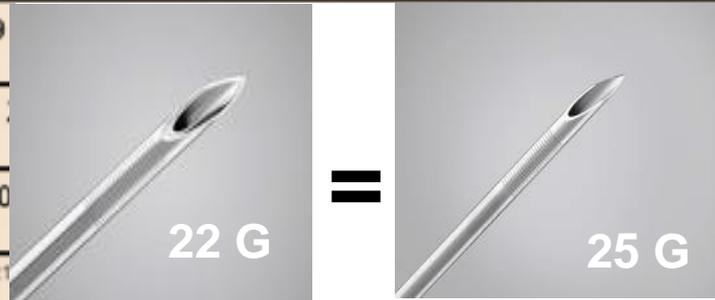


Adequacy of cytologic diagnosis for comparative use of different size needles

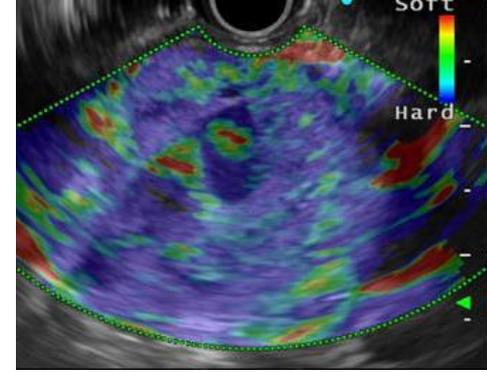
Author, Year	No of Patients	Type of Study	Needle Used	Accuracy of Diagnosis for Cytology
Yusuf et al, ²⁰ 2009	302 (pancreatic mass)	Retrospective	25 G	84% (Sensitivity)
	540 (pancreatic mass)		22 G	92% (Sensitivity)
Sakamoto et al, ²² 2009	24 (pancreatic mass)	Prospective	25 G	91.5%
			22 G	79.7%
			19 G trucut	51.4%
Imazu et al, ³⁷ 2009	43 (miscellaneous)	Prospective	25 G	81%
			22 G	76%
Lee et al, ³⁸ 2009	12 (11 pancreatic mass)	Randomised	25 G 22 G	No difference
Siddiqui et al, ³⁹ 2009	67 (pancreatic mass)	Randomised	25 G	95%
	64 (pancreatic mass)		22 G	87%
Fabbri et al, ⁴⁰ 2011	50 (pancreatic mass)	Randomised	25 G	94%
			22 G	86%
Camellini et al, ²¹ 2011	63 (miscellaneous)	Randomised	25 G	87%
	64 (miscellaneous)		22 G	89%
Kida et al, ²⁷ 2011	47 (miscellaneous)	Prospective	25 G	75%
			22 G	66%
Vilmann et al, ⁴¹ 2013	135 (59 pancreas)	Prospective	22 G	89%
			25 G	90%
Song et al, ⁴² 2010	60 (pancreatic mass)	Randomised	19 G	84%
	57 (pancreatic mass)		22 G	78%
Songür et al, ⁴³ 2011	35 (mediastinal lymph node)	Prospective	19 G	96%
	22 (pulmonary mass)		22 G	92%

Adequacy of cytologic diagnosis for comparative use of different size needles

Author, Year	No of Patients	Type of Study	Needle Used	Accuracy of Diagnosis for Cytology
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Imazu et al, ³⁷ 2009	43 (miscellaneous)	Prospective	25 G	81%
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Lee et al, ³⁸ 2009				No difference
Siddiqui et al, ³⁹				95%
				87%
Fabbri et al, ⁴⁰ 20				94%
				86%
Camellini et al, ²¹	64 (miscellaneous)		22 G	87%
			22 G	89%
Kida et al, ²⁷ 2011	47 (miscellaneous)	Prospective	25 G	75%
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			25 G	90%
Song et al, ⁴² 2010	60 (pancreatic mass)	Randomised	19 G	84%
	57 (pancreatic mass)		22 G	78%
Songür et al, ⁴³ 2011	35 (mediastinal lymph node)	Prospective	19 G	96%
	22 (pulmonary mass)		22 G	92%



Technical aspects NEEDLES



Feasibility
65%

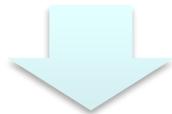
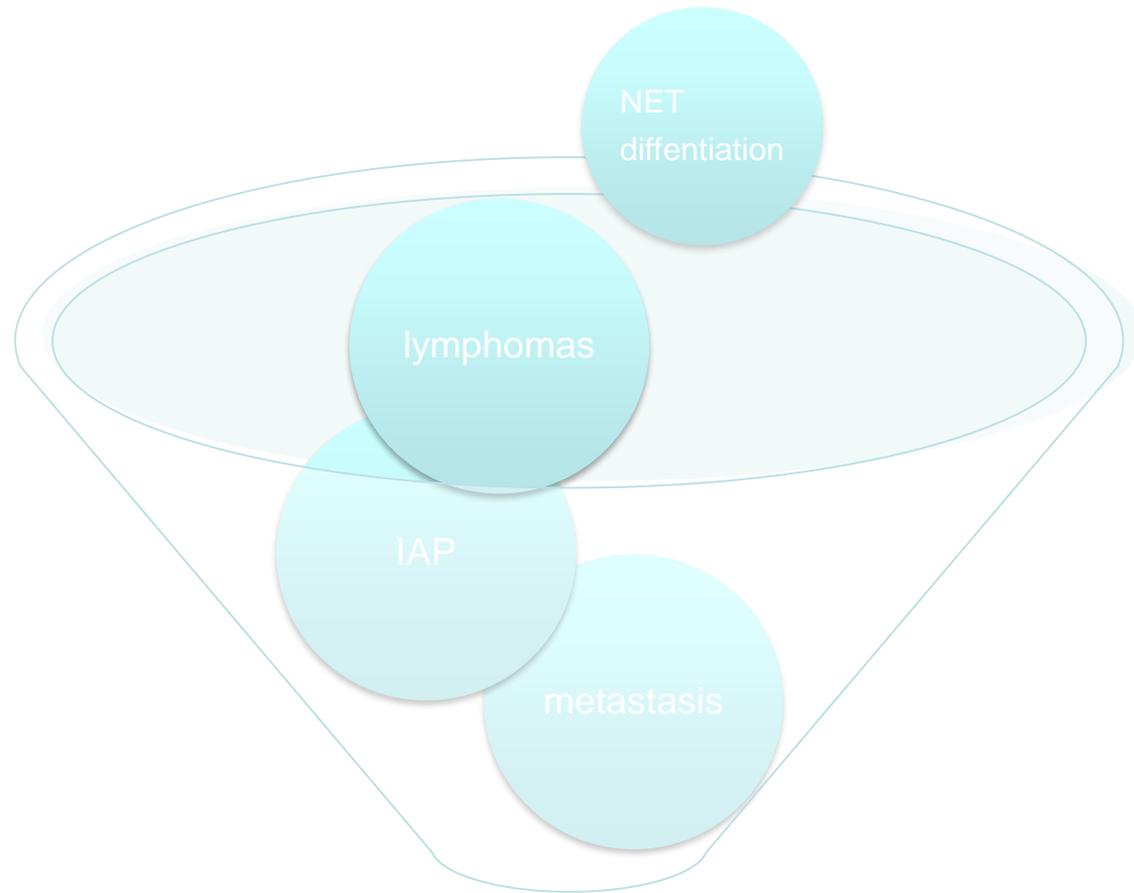
Not
relevant
41%

Immuno
Isto
chemistry
91%

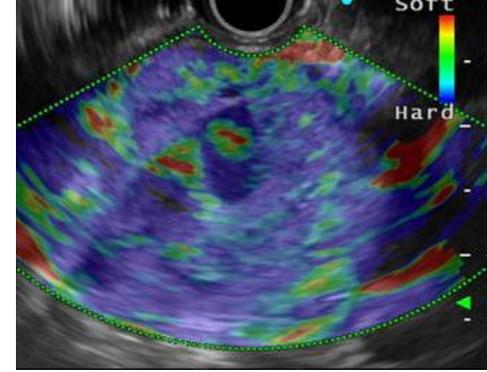
Overall
diagnostic
yield
52%

19g





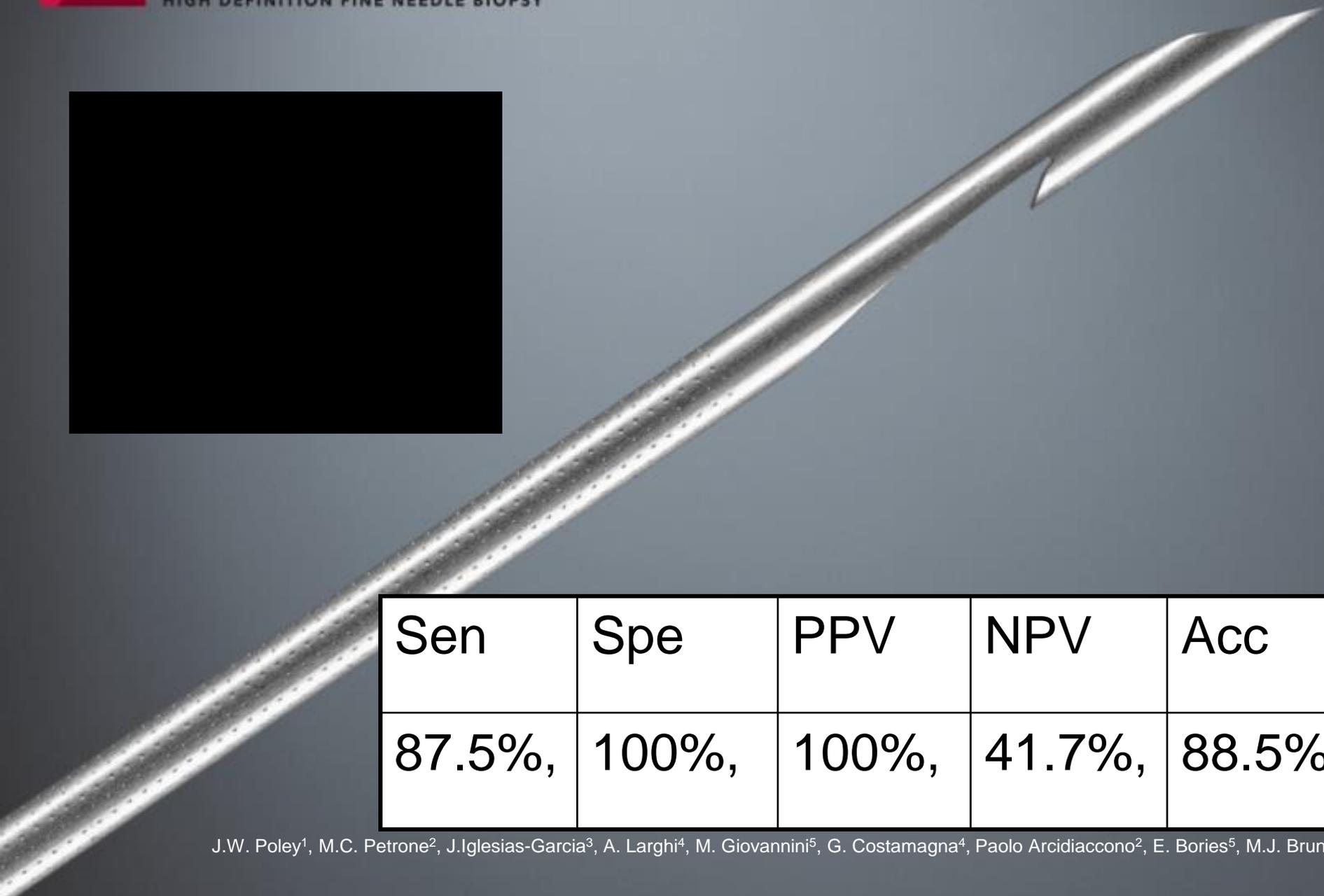
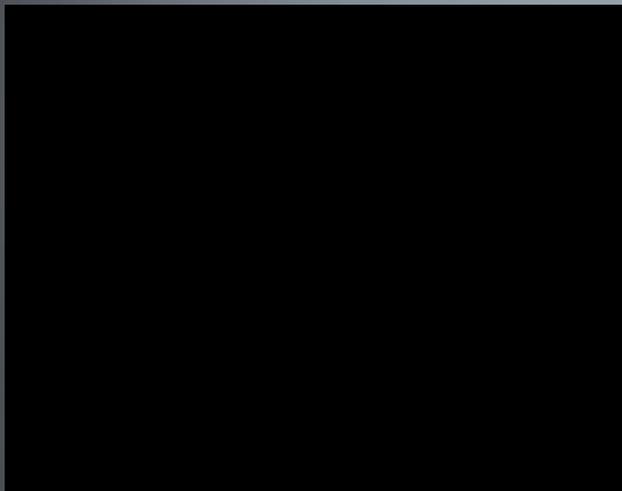
Rare Conditions





EchoTip ProCore™

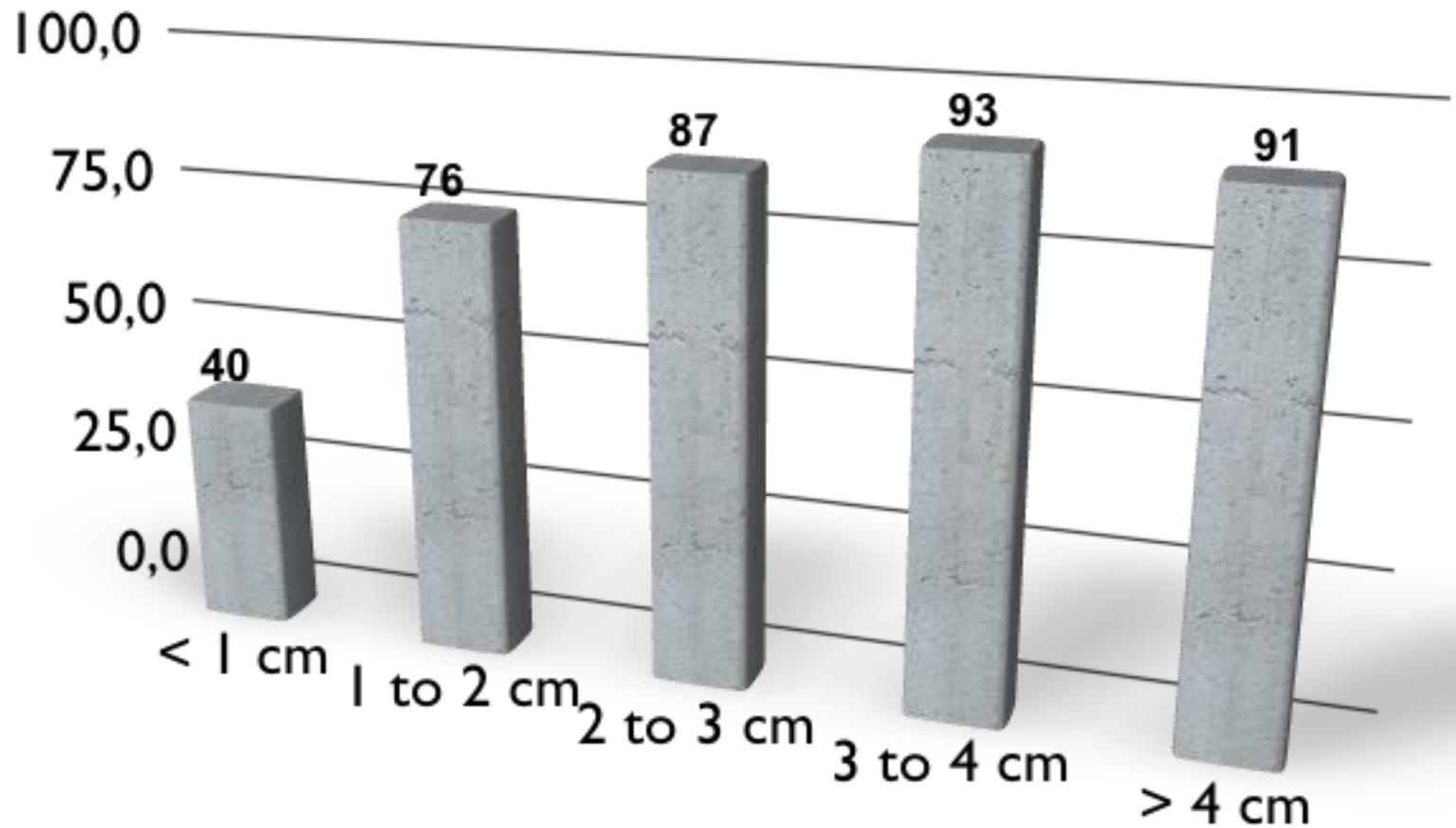
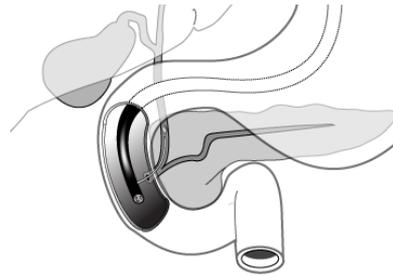
HIGH DEFINITION FINE NEEDLE BIOPSY



Sen	Spe	PPV	NPV	Acc
87.5%,	100%,	100%,	41.7%,	88.5%

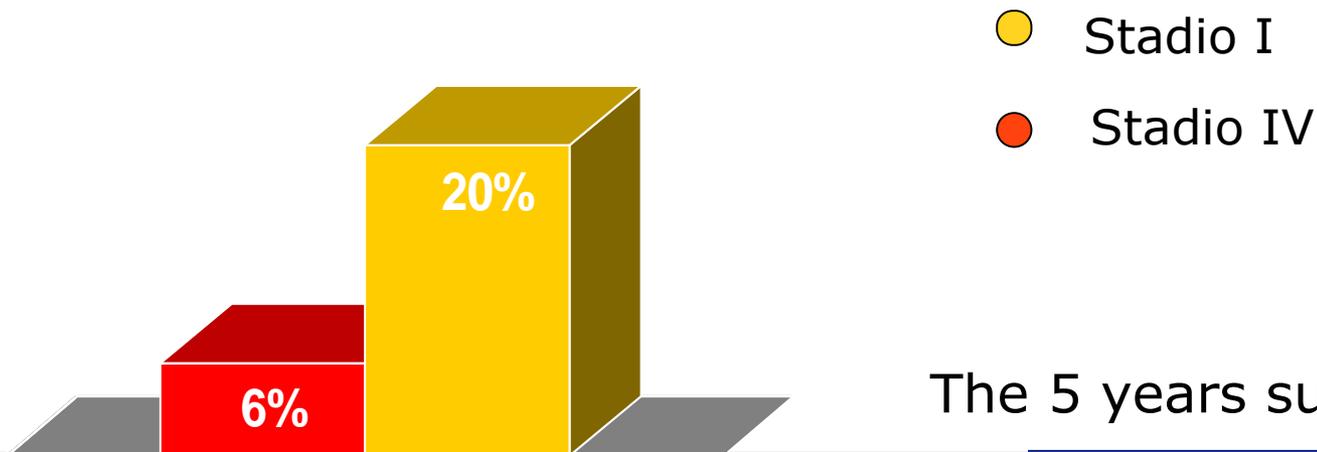


■ sensitivity



Surgical outcomes

15%–20%: candidates for pancreatectomy at the time of diagnosis



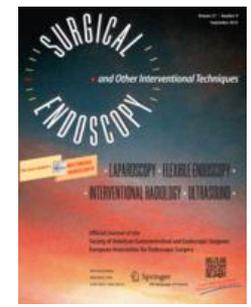
The 5 years survival rate



EUS-FNB of Small Solid Pancreatic Lesions using a 22-Gauge Needle with Side Fenestration

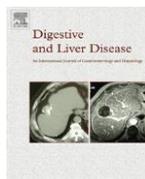
Number of patients	68
Age (years± SD) (range)	65.7±11.2 (39-85)
Sex (M/F)	30/38
Size of lesions (mean mm ± SD) (range)	16.5±4.5 (5-20)
Location	
Head (%)	29 (42.6)
Uncinate process (%)	3 (4.4)
Body (%)	31 (45.6)
Tail (%)	5 (7.4)
Number of passes (mean ± SD) (range)	1.5±0.6 (1-3)
Diagnostic categories	
Positive for malignancy (%)	44 (64.7)
Suspicious for malignancy (%)	4 (5.9)
Negative for malignancy (%)	10 (14.7)
Non-diagnostic/inadequate (%)	10 (14.7)
Presence of tissue core (%)	36/68 (52.9)
Diagnostic categories based on tissue core alone	
Positive for malignancy (%)	30 (44)
Suspicious for malignancy (%)	2 (3)
Negative for malignancy (%)	4 (5.9)
Non-diagnostic/inadequate (%)	32 (47.1)
Diagnostic efficacy	
Accuracy	82%
Sensitivity	80%
Specificity	100%
Positive predictive value	100%
Negative predictive value	40%
Destiny	
Surgical resection (%)	37 (54.5)
Patients in follow-up (%)	31 (45.5)
Final diagnosis	
Adenocarcinoma (%)	38 (55.9)
Neuroendocrine tumours (%)	8 (11.7)
Metastatic lesions (%)	2 (3)
Benign lesions (%)	20 (29.4)

2014



Endoscopic ultrasound-guided fine needle aspiration and biopsy using a 22-gauge needle with side fenestration in pancreatic cystic lesions

Luca Barresi^{a,*}, Ilaria Tarantino^a, Mario Traina^a, Antonino Granata^a, Gabriele Curcio^a, Neville Azzopardi^a, Paola Baccharini^b, Rosa Liotta^c, Adele Fornelli^b, Antonella Maimone^d, Elio Jovine^e, Vincenzo Cennamo^d, Carlo Fabbri^d

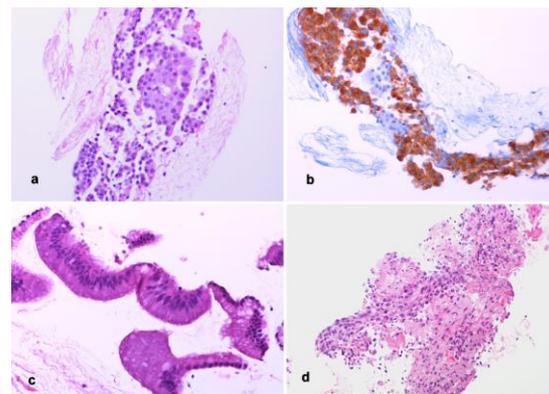


2013



Fine needle aspiration and biopsy cytohistologic diagnosis.

Inadequate specimens	21 (35%)
Mucinous cysts with no malignancy	20 (33.3%) ^a
Mucinous carcinoma (in situ or invasive)	6 (10%)
Ductal adenocarcinoma with cystic degeneration	2 (3.3%)
Neuroendocrine cystic tumour	3 (5%)
Solid pseudopapillary tumour	1 (1.6%)
Benign PCLs	7 (11.6%) ^b



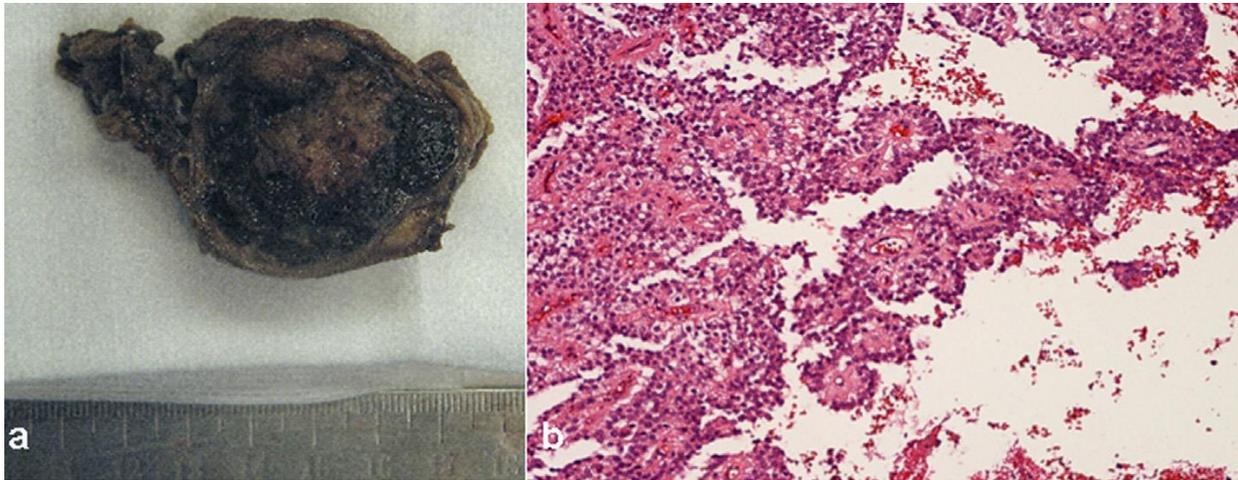
	CEA \geq 192 ng/ml	CEA \leq 192 ng/ml	Unavailable
Mucinous PCLs (n = 29)	9 (32.1%)	7 (26.9%)	13 (44.8%)
Mucinous malignant cysts (n = 9)	4 (44.4%)	2 (22.2%)	3 (33.3%)

K-ras mutation

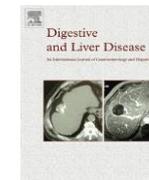
	Present	Absent	Unavailable
Mucinous PCLs (n = 29)	5 (17.8%)	7 (25%)	17 (58.6%)
Mucinous malignant cysts (n = 9)	1 (11.1%)	4 (44.4%)	4 (44.4%)



Preoperative diagnosis of a solid pseudopapillary tumour of the pancreas by Endoscopic Ultrasound Fine Needle Biopsy: A retrospective case series



Antonella Maimone^a, Carmelo Luigiano^b, Paola Baccharini^c, Adele Fornelli^d,
Vincenzo Cennamo^a, Annamaria Polifemo^a, Marta Fiscaletti^e, Dario de Biase^c,
Francesca Jaboli^f, Clara Virgilio^b, Liliana Stelitano^b, Nicola Zanini^g,
Michele Masetti^g, Elio Jovine^g, Carlo Fabbri^{a,*}



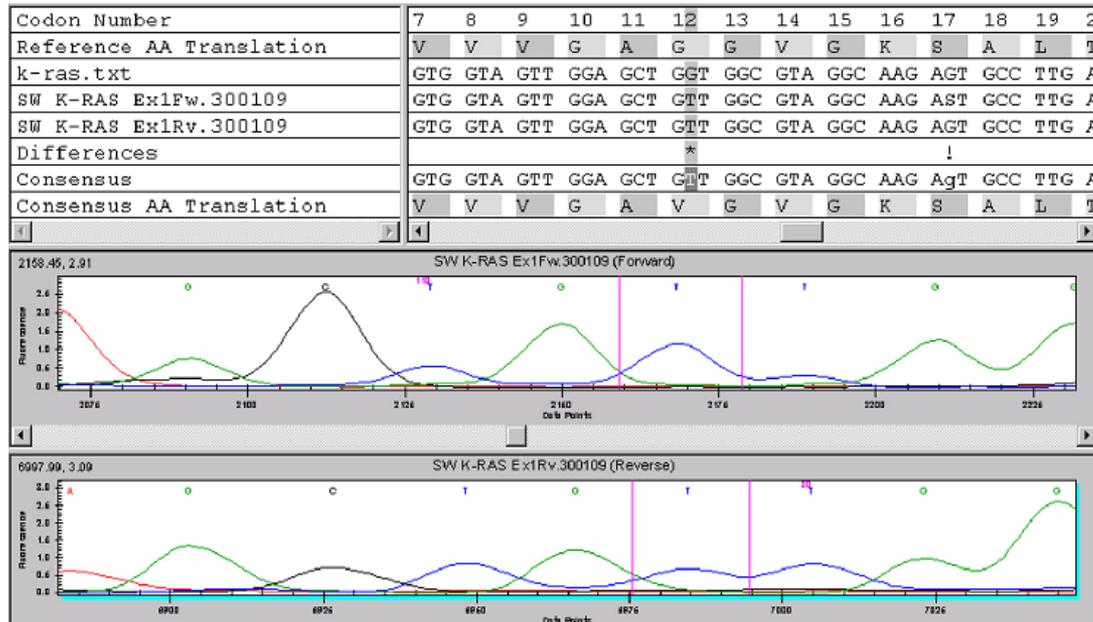
2014

Molecular Techniques

GASTROINTESTINAL ENDOSCOPY Fasanella 2009	<ul style="list-style-type: none">■ Pancreatic endocrine tumor EUS-guided FNA DNA microsatellite loss and mortality
<i>Clinical Gastroenterology and Hepatology</i> Kalid 2009	<ul style="list-style-type: none">■ Differentiating neoplastic from benign lesions of the pancreas: translational techniques
Pathology International Ito 2009	<ul style="list-style-type: none">■ Diagnostic approach to pancreatic tumors with the specimens of endoscopic ultrasound-guided fine needle aspiration
GASTROINTESTINAL ENDOSCOPY De Witt 2009	<ul style="list-style-type: none">■ EUS for pancreatic endocrine tumors: do we need to know our pancreatic endocrine tumor's DNA?

Molecular Techniques

K-ras analysis

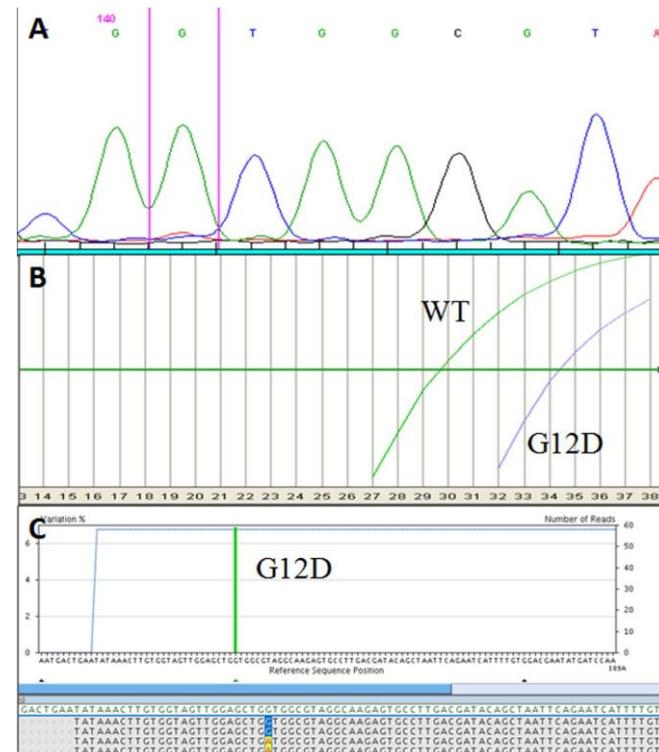


Next Generation Sequencing Improves the Accuracy of *KRAS* Mutation Analysis in Endoscopic Ultrasound Fine Needle Aspiration Pancreatic Lesions

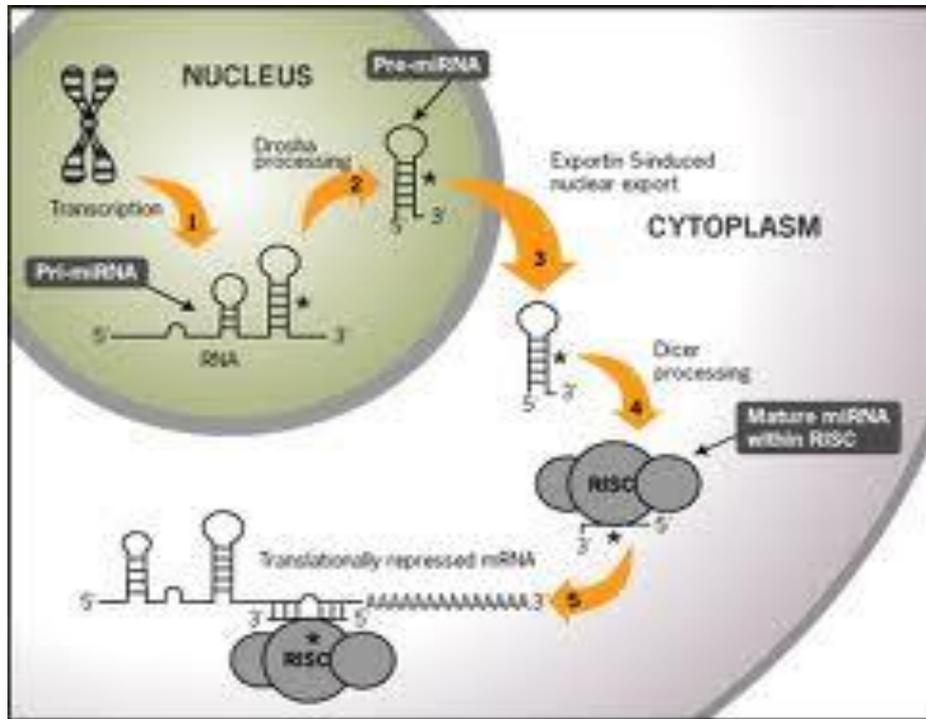
Dario de Biase^{1,2*9}, Michela Visani²⁹, Paola Baccharini¹, Anna Maria Polifemo³, Antonella Maimone⁴, Adele Fornelli⁵, Adriana Giuliani⁶, Nicola Zanini⁷, Carlo Fabbri³, Annalisa Pession^{2†}, Giovanni Tallini^{1†}

Performance	<i>KRAS</i> Ex 2			<i>KRAS</i> Ex 2 and Ex 3		
	454 NGS	ASLNA	Sanger	454 NGS	ASLNA	Sanger
SPEC (%)	100.00	100.00	100.00	100.00	100.00	100.00
SENSIT (%)	52.78	52.78	44.19	73.68	52.78	42.11
PPV (%)	100.00	100.00	100.00	100.00	100.00	100.00
NPV (%)	55.26	55.26	36.84	65.52	55.26	46.34
ACC (%)	70.18	70.18	57.89	82.46	70.18	70.18
FDR (%)	0.00	0.00	0.00	0.00	0.00	0.00

Final End-Point	Number of <i>KRAS</i> mutated samples using:		
	454 NGS (%)	ASLNAqPCR (%)	Sanger (%)
Adenocarcinomatous and pre-neoplastic lesions (n = 38)	28 (73.7)	21 (55.3)	16 (42.1)
PDAC (n = 20)	14 (70)	12 (60)	8 (40)
IPMN (n = 12)	10 (83.3)	5 (41.7)	5 (41.7)
Inop. Neoplasia (n = 6)	4 (66.7)	4 (66.7)	3 (50)
Not-adenocarcinomatous lesions (n = 7)	0 (0)	0 (0)	0 (0)
pNET (n = 5)	0 (0)	0 (0)	0 (0)
SPPT (n = 2)	0 (0)	0 (0)	0 (0)
Benign Lesions (n = 12)	0 (0)	0 (0)	0 (0)
NA (n = 3)	3 (100)	3 (100)	1 (33.3)



The Near Future

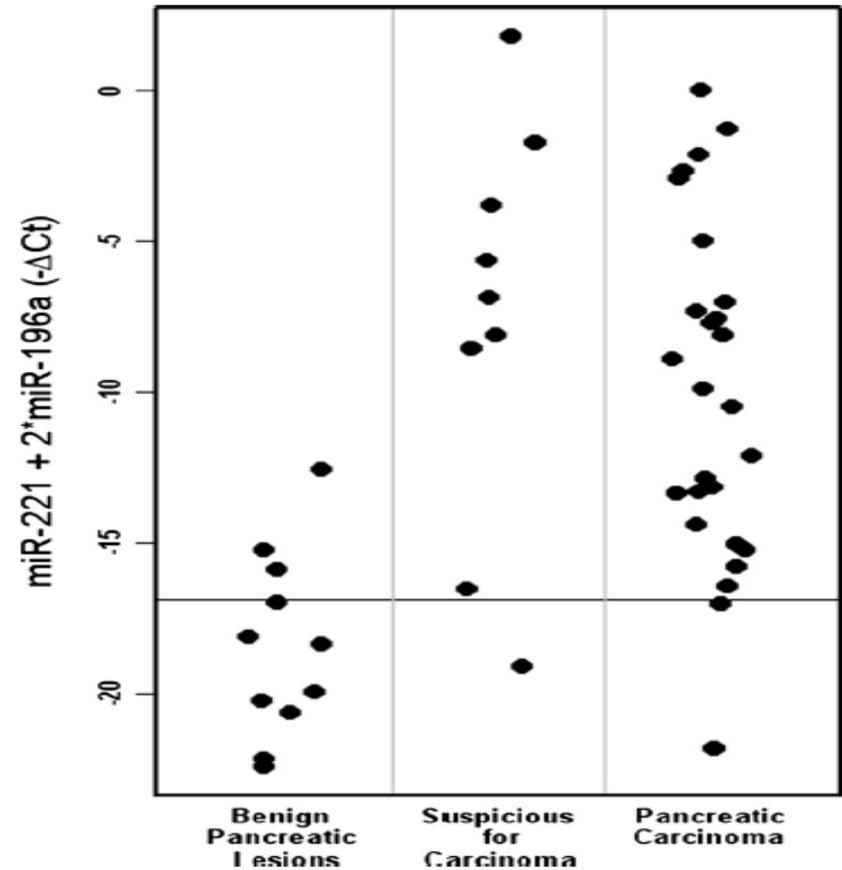


The MicroRNA(miRNAs) regulate the expression of oncogenes and tumors suppressor

The miRNAs have characteristic expression profiles in some carcinomas, and several species are dysregulated in Pancreatic Ductal Adenocarcinoma.

The Near Future

The MiRNA expression have accurately predicted the presence of malignancy in 89% of cancer specimens in the cellblock



NET

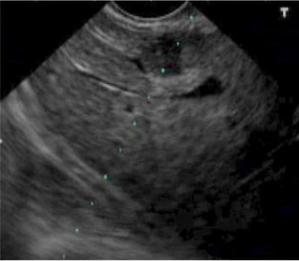
Istotipo	Caratteri lesione	Procedura chirurgica
Insulinoma	< 2 cm, superficiale, No Wirs > 2 cm o coinvolg. Wirsung	Enucleoresezione Resezione
Gastrinoma	Qualsiasi localizzazione Local. Esclusiva linfonodale	Resezione tipica Exeresi linfonodi
Tumori non funzionanti	< 2 cm, superficiale, No Wirs > 2 cm o coinvolg. Wirsung	Enucleoresezione Resezione tipica
VIPoma Glucagonoma SMSoma	Qualsiasi localizzazione	Resezione tipica

Falconi M et al. 2007,



Simultaneous EUS-FNA Diagnosis and TNM Staging of a Pancreatic Neuroendocrine Tumor in a Patient with an Unrecognized MEN Type 1

Francesco Ferrara,¹ Carmelo Luigiano,¹ Antonella Maimone,¹
Marco Bassi,¹ Anna Maria Polifemo,¹ Paola Baccharini,² Vincenzo
Cennamo,³ Nadia Cremonini,⁴ and Carlo Fabbri¹



(a)



(a)



(a)



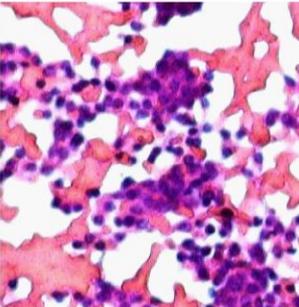
(b)



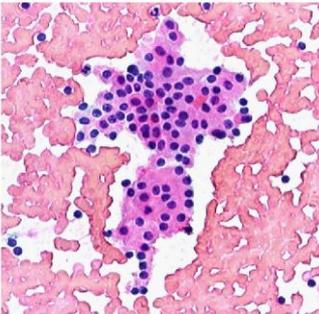
(b)



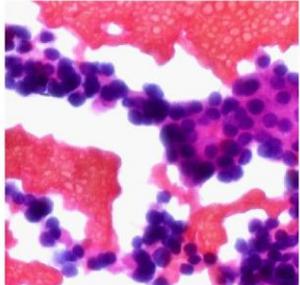
(b)



(c)



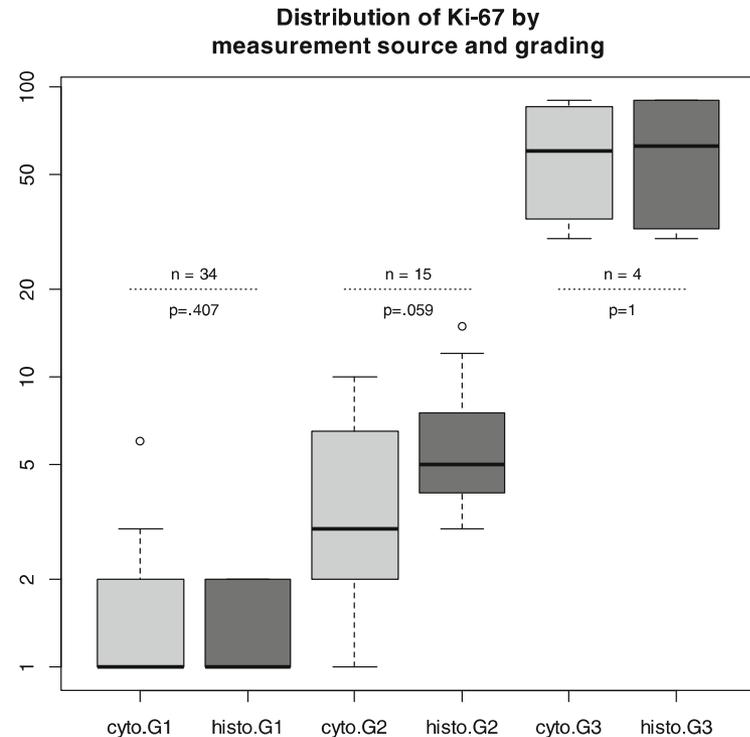
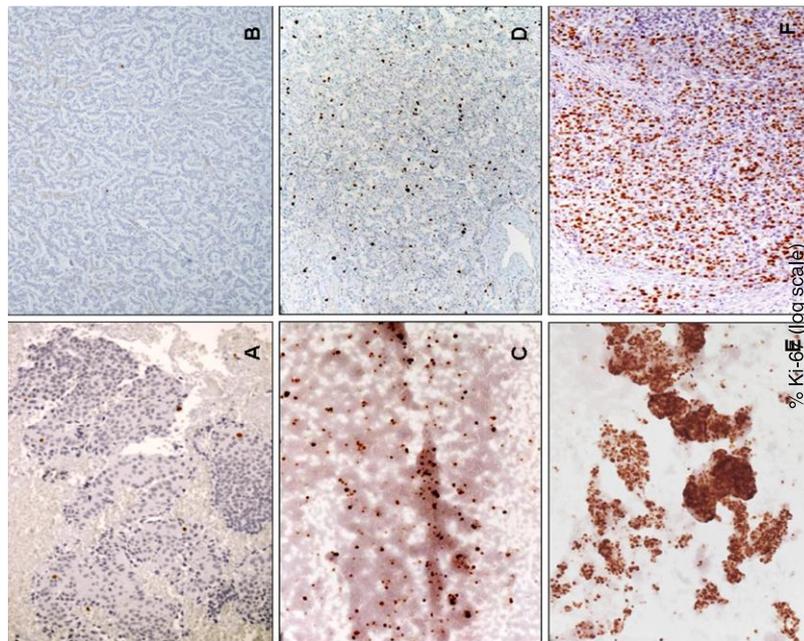
(c)



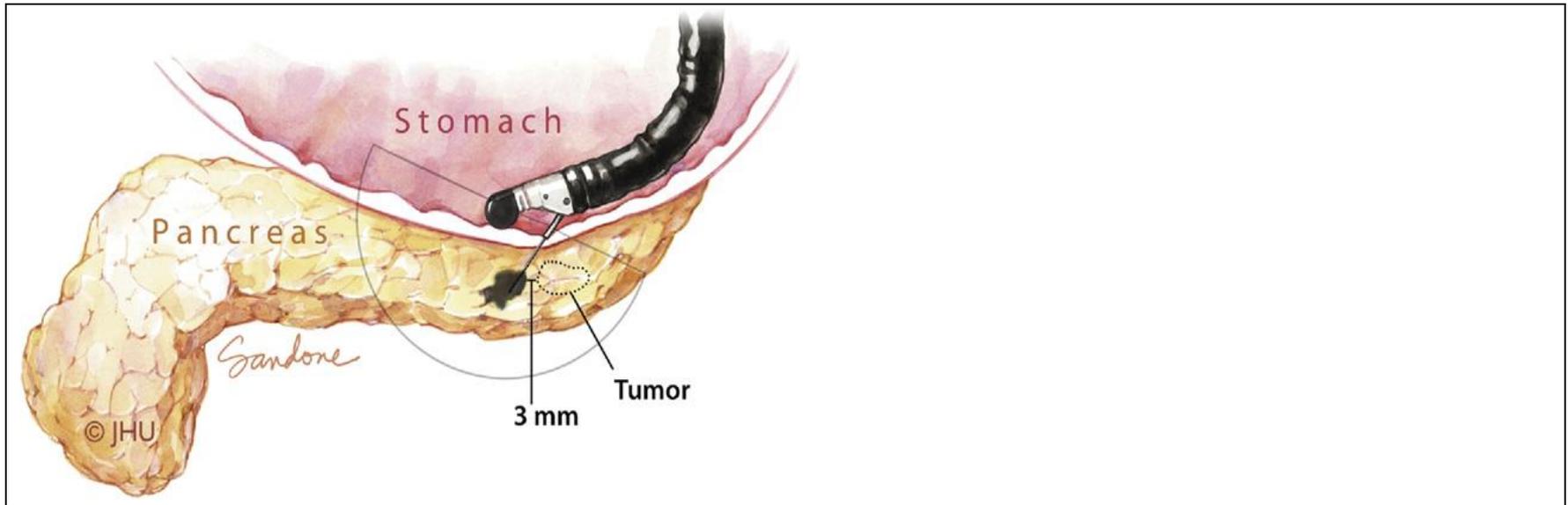
(c)

Ki-67 cytological index can distinguish well-differentiated from poorly differentiated pancreatic neuroendocrine tumors: a comparative cytohistological study of 53 cases

Gabriele Carlinfante • Paola Baccarini • Debora Berretti • Tiziana Casseti •
Maurizio Cavina • Rita Conigliaro • Alessandro De Pellegrin • Luca Di Tommaso •
Carlo Fabbri • Adele Fornelli • Andrea Frasoldati • Giorgio Gardini • Luisa Losi •
Livia Maccio • Raffaele Manta • Nico Pagano • Romano Sassatelli • Silvia Serra •
Lorenzo Camellini



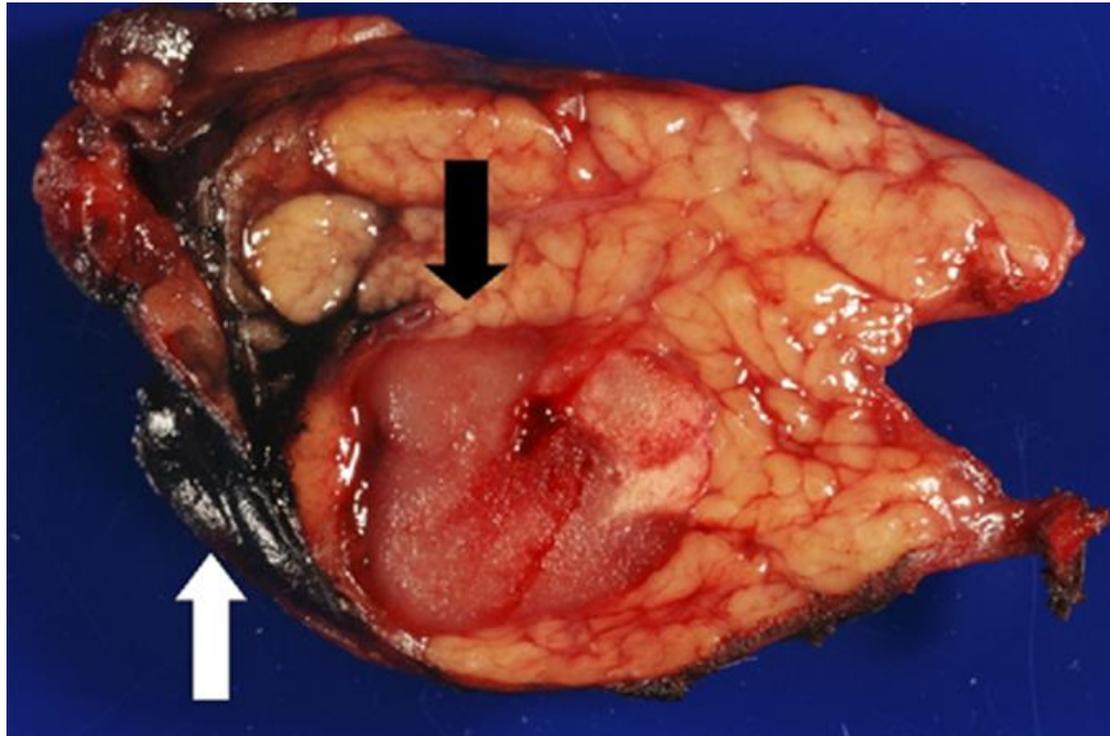
Tattooing before laparoscopic distal pancreatic resection



Pancreatology. 2013 Jul-Aug;13(4):449.

Body tattooing: efficacy of a “new” practice.

[Fornelli A1, Fabbri C, Zanini N, Jovine E.](#)





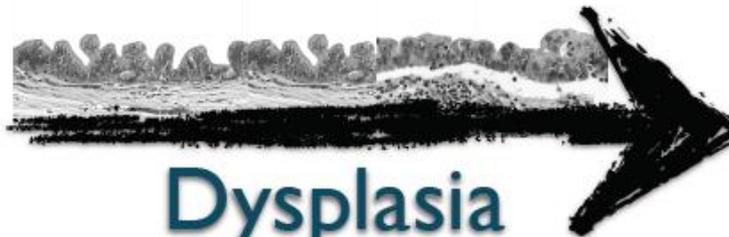
precancerous lesions
of
GI tract

11/11/11



11/11/11

precancerous lesions
of
GI tract



Dysplasia

Screening PC

Potential intervention

< 2 cm

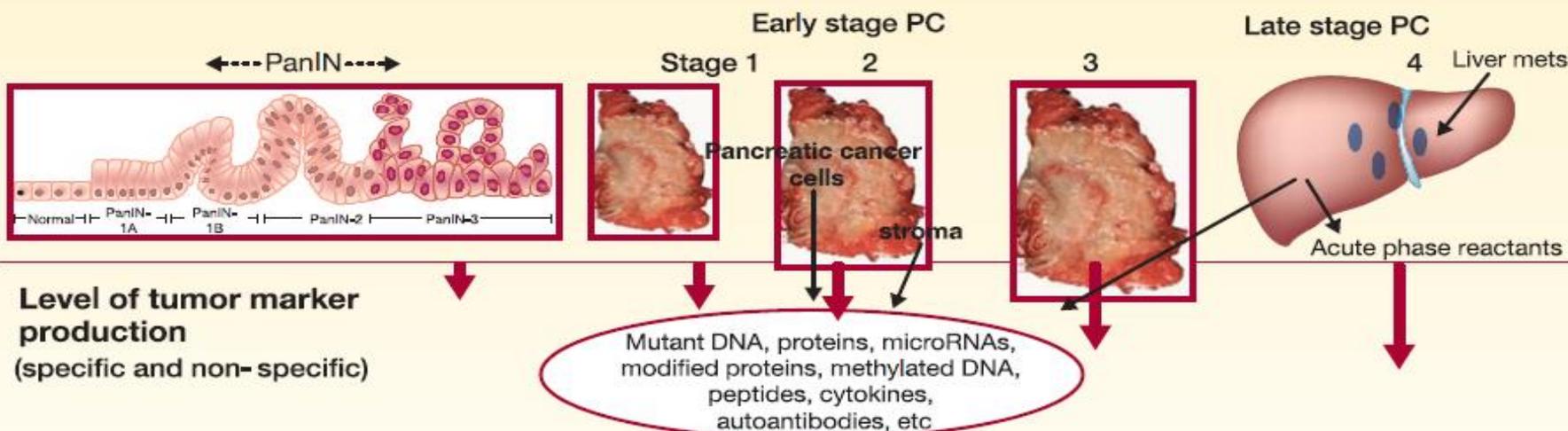
Risk assessment
and
prevention

Screening

Surgical resection
and adjuvant therapy

Palliative
chemotherapy,
other therapies

Natural history of pancreatic cancer development and progression



Level of tumor marker
production
(specific and non-specific)

Clinical presentation

100%
Probability
of symptoms
0

Asymptomatic

Symptomatic



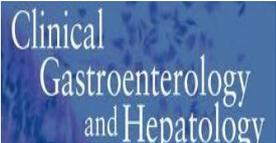
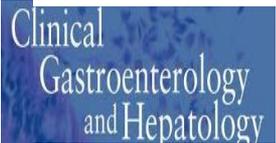
Screening/Follow up

Surgery

Principles of screening

To be considered an important health problem, a disease need not necessary have a high degree of prevalence...

.....but also conditions with serious consequences to the individual may warrant relatively uneconomic screening measures.

N. Pt.s	Tests	Detection Rate	Diagnostic Yield	Sugery	Authors
14	EUS	71%	50%	50%	 Brentnall 1999  Canto 2004
	ERCP	54%			
	CT	33%			
38	EUS ± FNA	76%	5,3%	18%	 Canto 2006
	ERCP	100%			
	CT	N/S			
78	EUS ± FNA	21%	10,2%	8,9%	 Poley 2009 
	CT	N/S			
	CT	N/S			
	ERCP				
44	EUS	23%	23%	7%	 Langer  Ludwing 2011
	MRI/MRCP	N/S			
	CT	N/S			
76	EUS ± FNA	33%	0,76%	7,8%	 Canto 2012
	MRI/MRCP	23,3%			

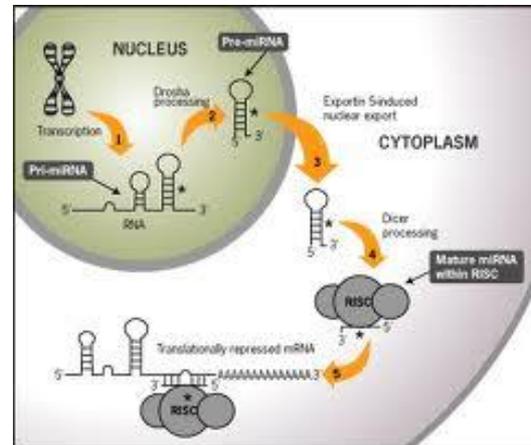
Screening pancreatic cancer

		
<p>Brentnall</p> <p><i>Ann Intern Med</i> 1999</p>	<p>Kimmey</p> <p><i>Gastr Endosc</i> 2002</p>	<p>Langer</p> <p><i>Gut</i> 2009</p>
<p>Canto</p> <p><i>Clin Gastroen Hepatolog</i> 2004</p>	<p>Canto</p> <p><i>Gastroenterology</i> 2012</p>	
<p>Canto</p> <p><i>Clin Gastroen Hepatolog</i> 2006</p>	<p>Al-Sukhni</p> <p><i>J Gastrointest Surg</i> 2012</p>	
<p>Ludwing</p> <p><i>Am J Gastroent</i> 2011</p>		
<p>Poley</p> <p><i>A J Gastroemter</i> 2009</p>		
<p>Verna</p> <p><i>Clinical Cancer Contr</i> 2010</p>		

LO SCREENING DEL FUTURO

Riuscire a identificare una lesione pancreatica **prima della sua manifestazione clinica** darebbe la possibilità di intervenire in tempo utile.

I miRNA sono piccole molecole di RNA non codificanti che regolano l'espressione di numerosi geni.



La loro espressione è **tessuto specifica** e il loro profilo è alterato in tutte le neoplasie



Thanks

Endoscopy could play a new role?



PHOTODYNAMIC THERAPY



Copyright Medlight SA, 2008



Khorsandi

RADIOFREQUENCY ABLATION



Steel

GASTROINTESTINAL
ENDOSCOPY

2011

Endoscopic ultrasound-guided treatments: Are we getting evidence based - a systematic review

Table 1 Level of evidence per subject

Level of evidence	I a	I b	II a	II b	III	IV	Total
EUS-GD of pancreatic fluid collections	1	5	0	16	42	20	84
EUS-guided necrosectomy	1	1	0	0	15	3	20
EUS-guided cholangiography and biliary drainage	0	1	0	7	37	40	85
EUS-guided pancreatography and pancreatic duct drainage	0	0	0	0	9	6	15
EUS-guided gallbladder drainage	0	1	0	3	1	2	7
EUS-GD of abdominal (non-peripancreatic) and pelvic collections	0	0	0	2	3	2	7
EUS-guided Celiac Plexus Neurolysis or Block	4	7	1	5	16	19	52
EUS-guided ethanol ablation	0	1	0	5	13	9	28
EUS-guided tumor ablation	0	0	0	9	4	21	34
EUS-guided fiducial placement	0	0	0	2	10	14	26
EUS-guided vascular intervention	0	1	0	2	15	5	23
Total	6	17	1	51	165	141	381

I *no* CHE AIUTANO
A CRESCERE



