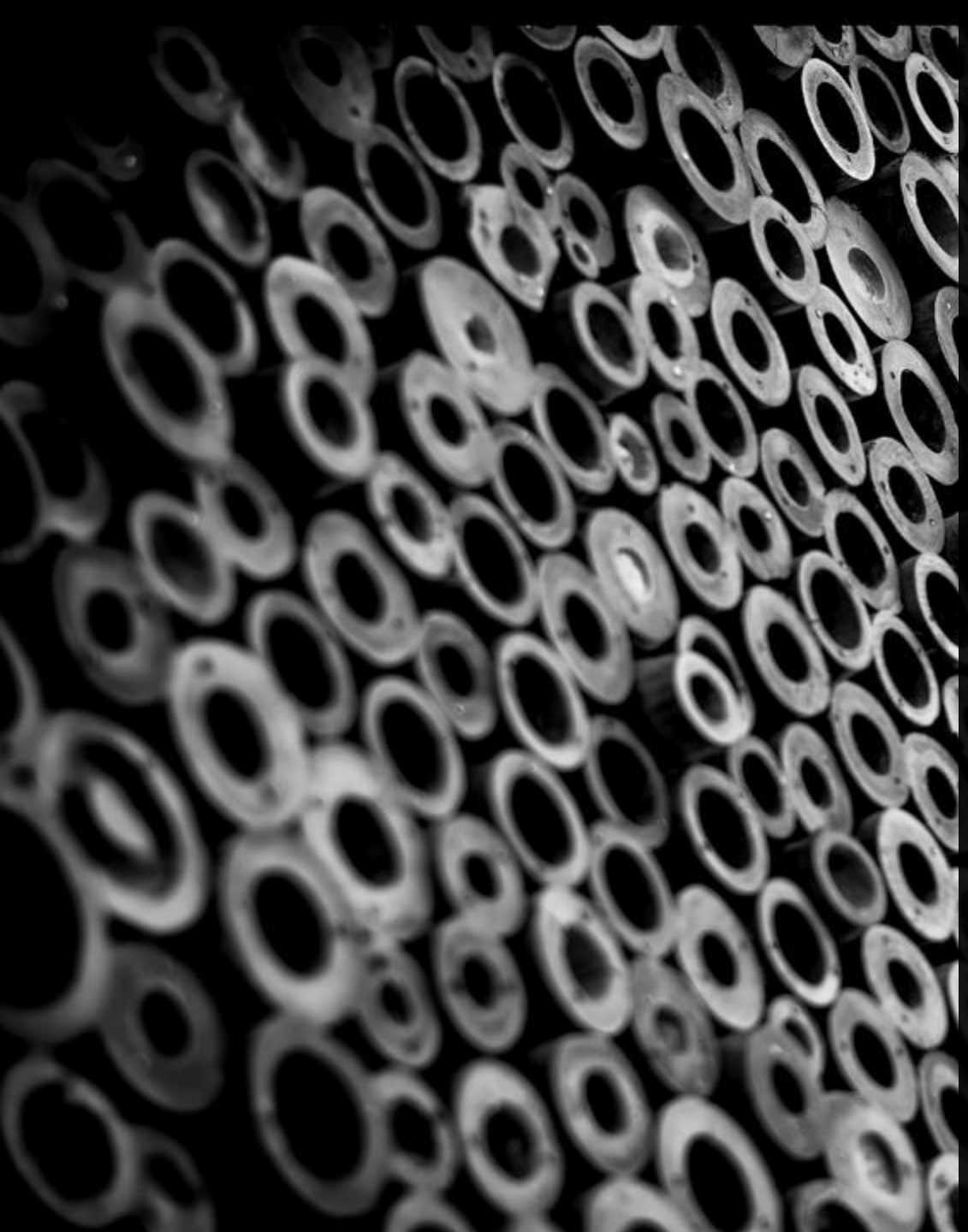


Especialización en Ultrasonografía Endoscópica Avanzada

Universidad de Alcalá

USE PAAF ColangioCarcinoma

Mariano González-Haba Ruiz

Servicio de Gastroenterologia

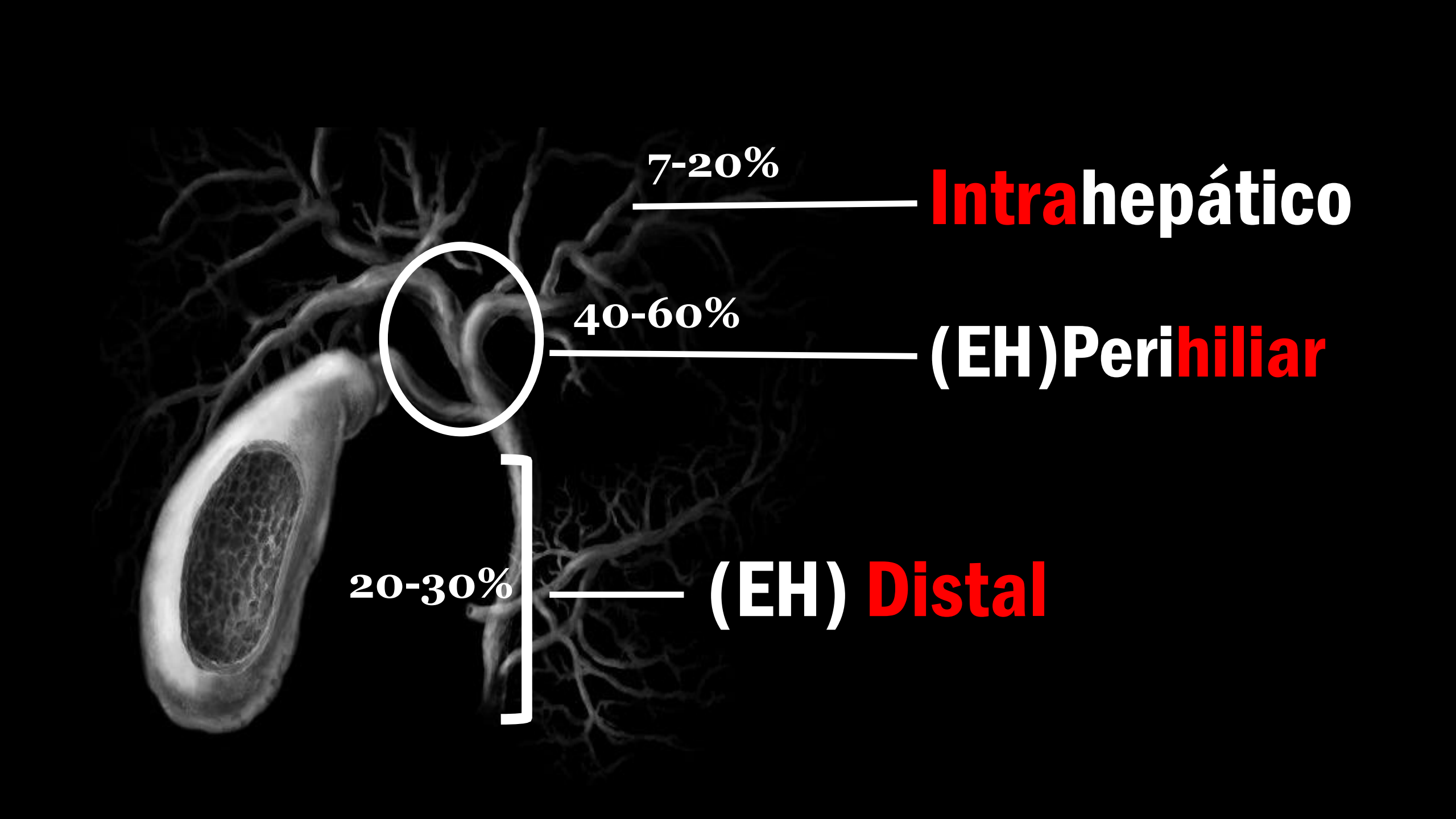
ColangioCarcinoma (CCA)

Poco frecuente (5-10,000 US)

Mayoria (>80%) no resecable

Supervivencia 5 años 15-30% (IH-EH)

Tras cirugía
20-60% margenes negativos
55-80% THO


7-20%
Intrahepático
40-60%
(EH)Perihiliar
20-30%
(EH) Distal

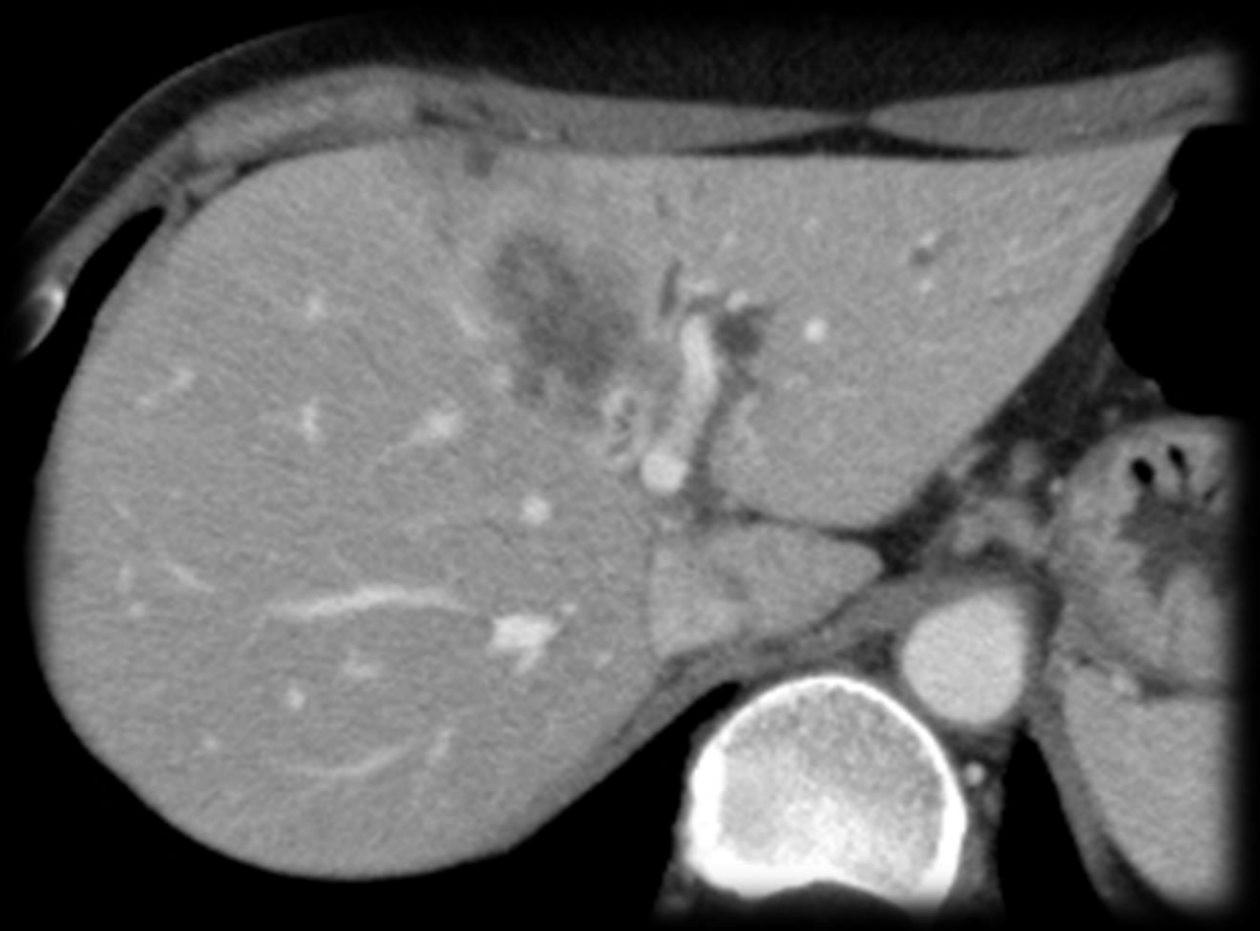
CCA Intrahepático

CCA Intrahepático

10% CCA

2º Tumor primario hígado

15% Resecable al diagnostico



CCA Intrahepático

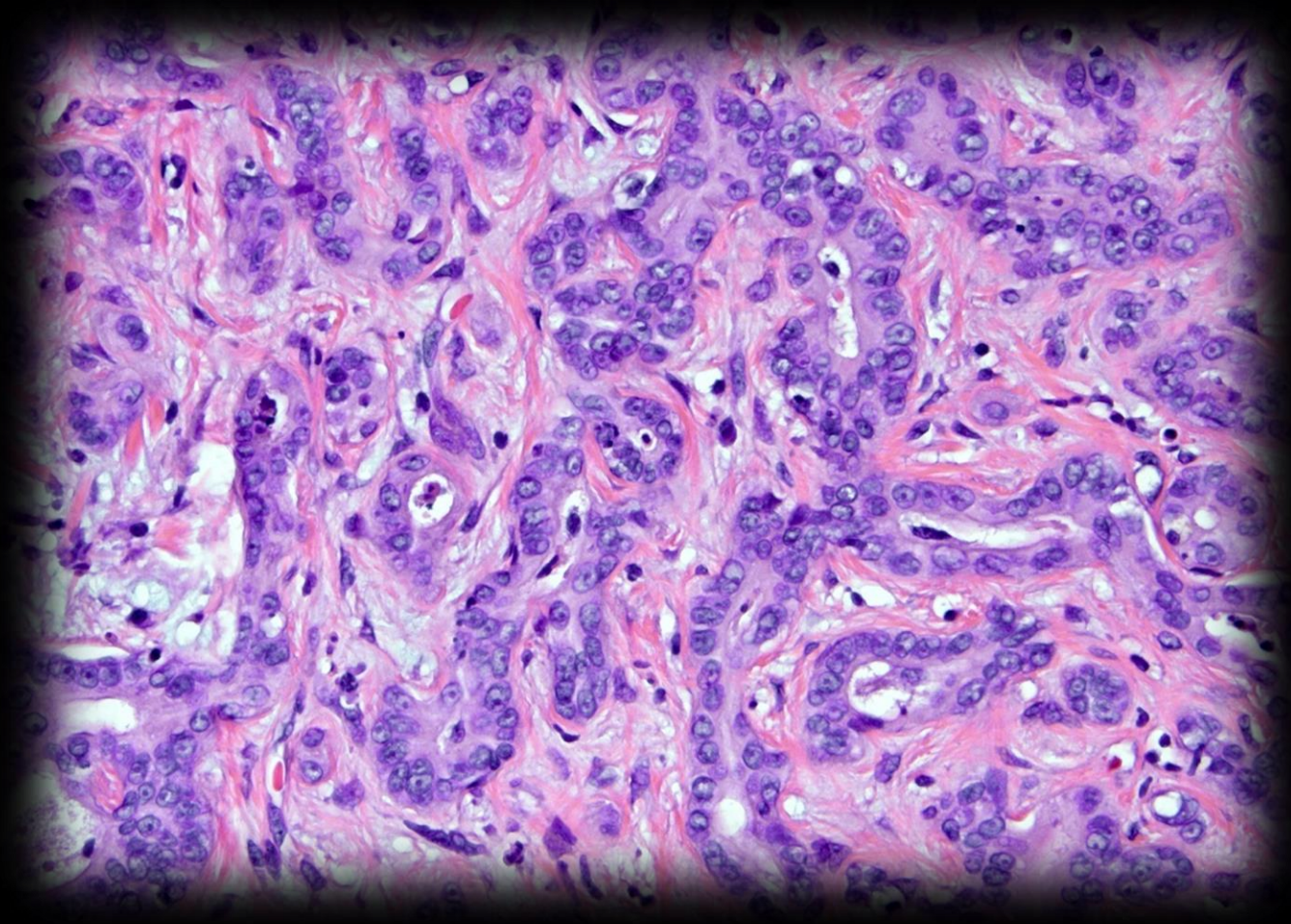
Adenocarcinoma

mass-forming (80%)

intraductal infiltrating

periductal pattern.

Colangio-hepatocarcinoma



CCA Intrahepático

Diagnostico

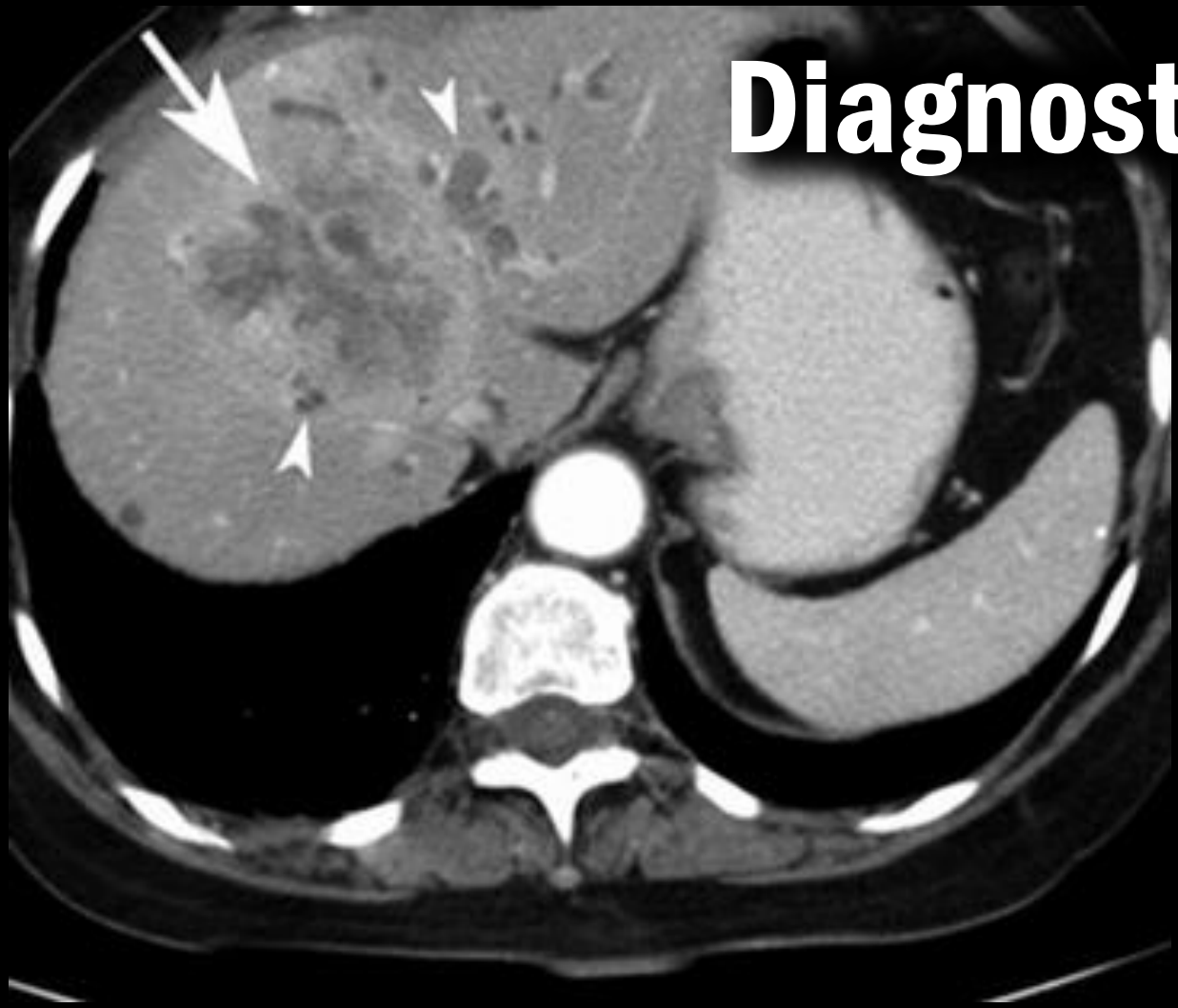
ECOGRAFIA

TC

RMN

PET – Preoperatorio

USE



CCA Intrahepático

Diagnostico

¿Resecable?

CCA Intrahepático

PRIMARY TUMOR (T)

TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
Tis	Carcinoma in situ (intraductal tumor)
T1	Solitary tumor without vascular invasion, ≤5 or >5 cm
T1a	Solitary tumor ≤5 cm without vascular invasion
T1b	Solitary tumor >5 cm without vascular invasión
T2	Solitary tumor with intrahepatic vascular invasion or multiple tumors, with or without vascular invasion
T3	Tumor perforating the visceral peritoneum
T4	Tumor involving local extrahepatic structures by direct invasion

REGIONAL LYMPH NODES (N)

NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastasis
N1	Regional lymph node metastasis present

DISTANT METASTASIS (M)

M0	No distant metastasis
M1	Distant metastasis present

AJCC 8TH 2017

CCA Intrahepático

Criterios de Irresecabilidad

RESECABLE

R0 con suficiente parénquima remanente (2 segmentos con perfusión y drenaje biliar y venoso)

IRRESECABLE

Enfermedad extrahepática (Mtx, N2)

Multifocalidad

Afectacion arterial hepática

Weber, HBP 2015

CCA Intrahepático

Papel de USE-PAAF

¿Se necesita biopsia?

CCA Intrahepático

Papel de USE-PAAF

¿Se necesita biopsia?

NO si resecable

Previo a terapias sistémicas

Duda diagnostica

*DD metástasis (IHQ)

USE PAAF

Si cambio en decisión terapéutica

- Tipo de lesión
- Resecabilidad (N2, ascitis…)

No detectable o accesible percutáneo

Resultado negativo previo

CCA Intrahepático

USE PAAF
Lesiones hepáticas

Lesiones cerca del transductor

Evitar lesiones subcapsulares

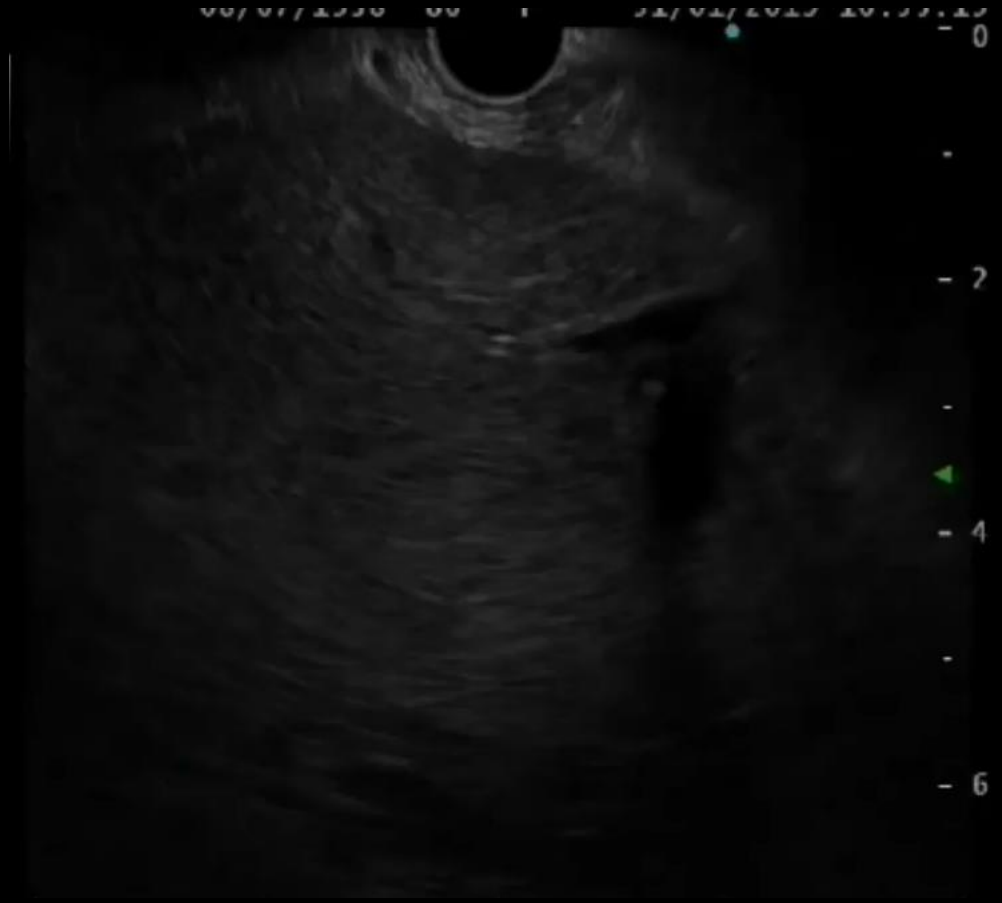
22G vs 25G

FNA vs FNB

Complicaciones y riesgo diseminación

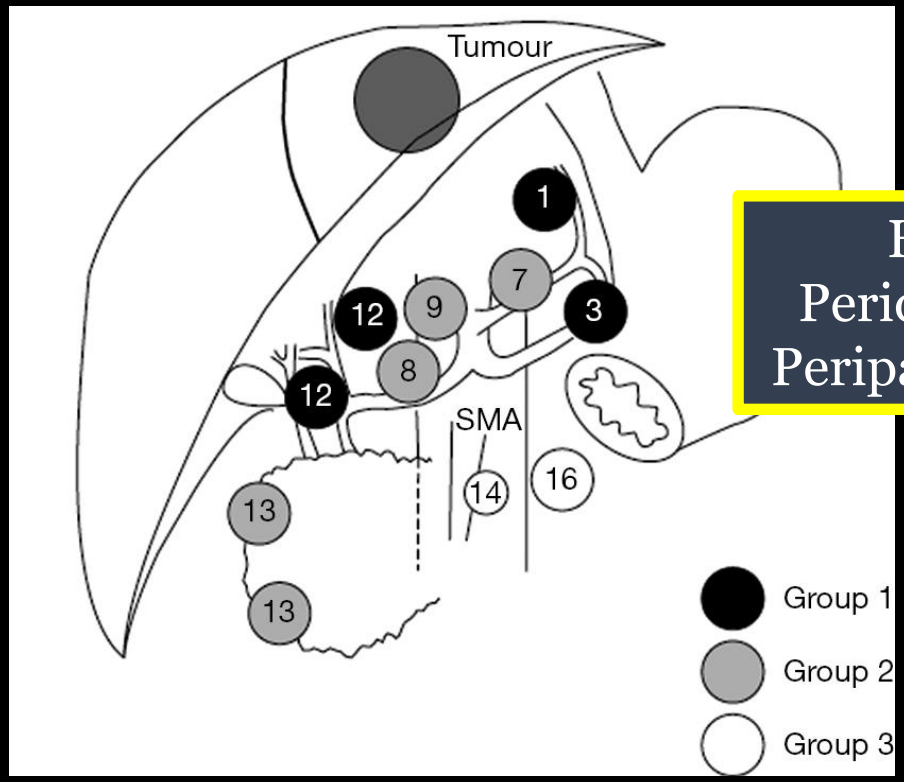
CCA Intrahepático

USE-PAAF



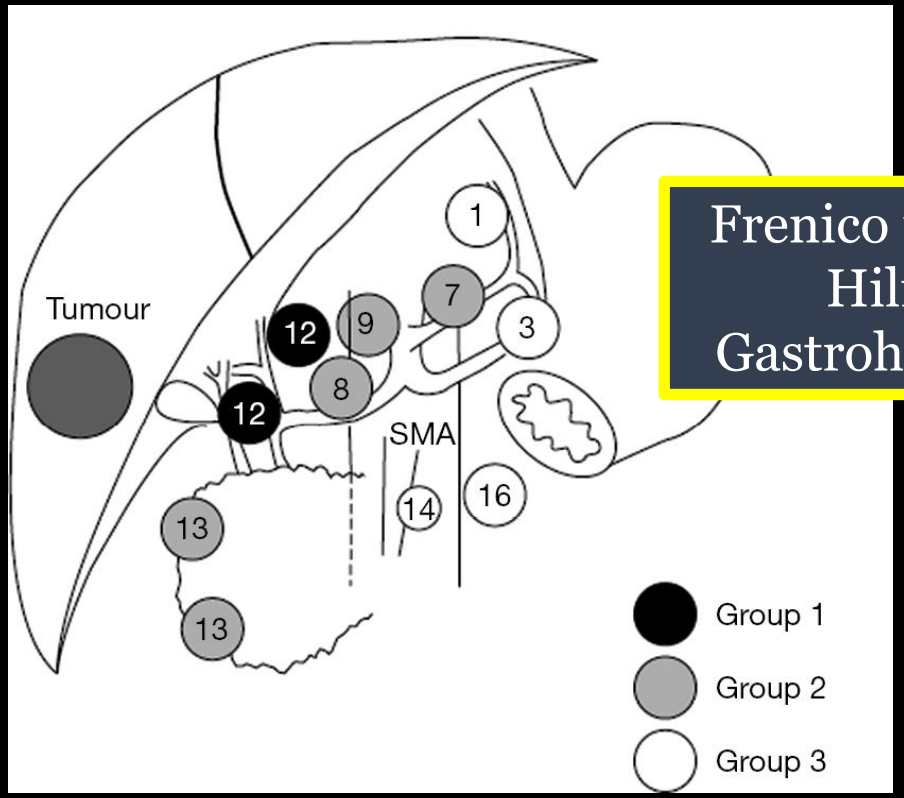
CCA Intrahepático

Diseminación Ganglionar



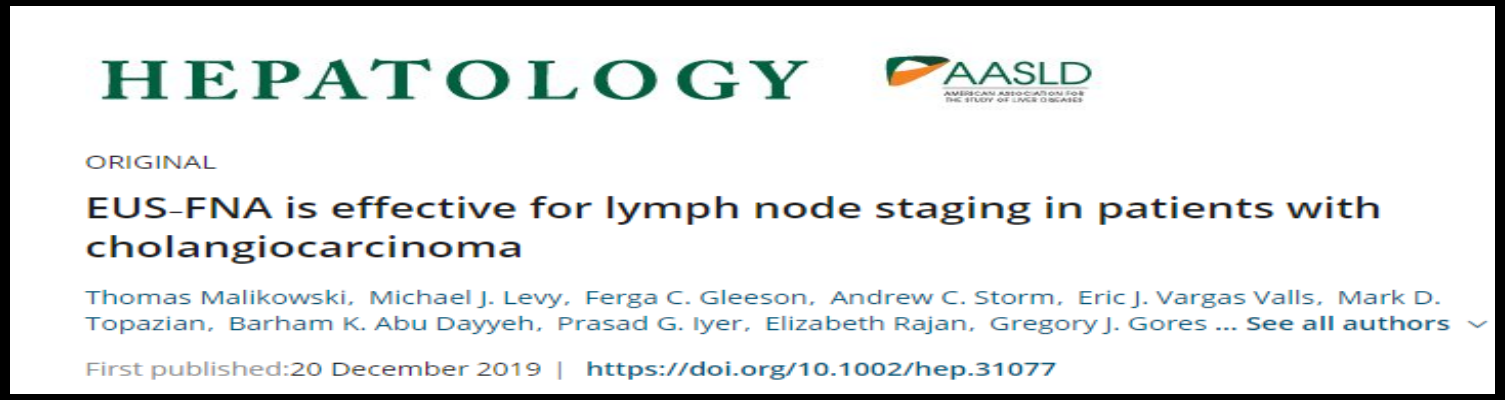
LHI

Hiliar
Periduodenal
Peripancreatico



LHD

Frenico inferior
Hiliar
Gastrohepático



HEPATOLOGY AASLD

ORIGINAL

EUS-FNA is effective for lymph node staging in patients with cholangiocarcinoma

Thomas Malikowski, Michael J. Levy, Ferga C. Gleeson, Andrew C. Storm, Eric J. Vargas Valls, Mark D. Topazian, Barham K. Abu Dayyeh, Prasad G. Iyer, Elizabeth Rajan, Gregory J. Gores ... See all authors

First published:20 December 2019 | https://doi.org/10.1002/hep.31077

157 patients

24 (15%) iCCA

124 (79%) pCCA

9 (6%) dCCA

Identificación LN vs CT / MRI

(86% vs 47%; P<0.001)

PAAF 133 (98.5%)

EUS FNA 27/31 (87.1%) malignos

pacs con LN+

CCA intrahepático

EUS vs TC/MRI

(83% vs 50%; P=0.048)

LN+ 4 (17%)

Malikowski, Hepatology 2020

CCA Intrahepático

Diseminacion Ganglionar

USE PAAF

Adenopatías

22G vs 25G

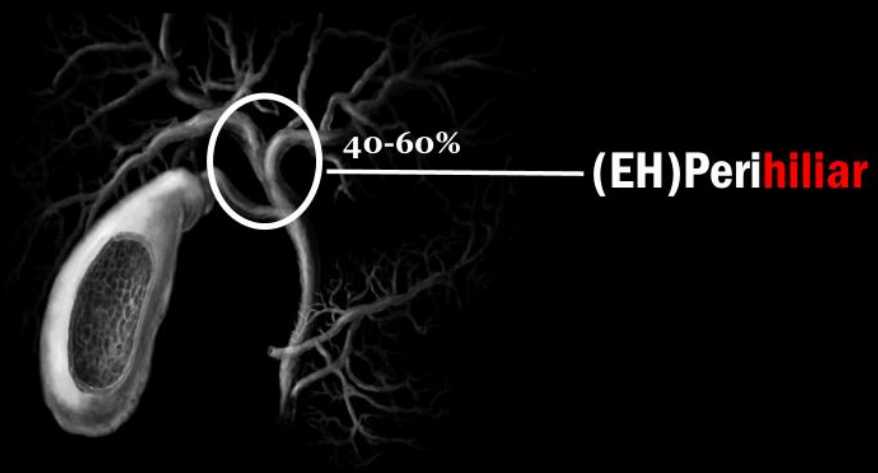
FNA vs FNB

+/- ROSE

2-3 (ROSE) / 3-4 pases


CCA Perihiliar

CCA perihiliar



Hasta 60% CCA

Asociación con **Colangitis esclerosante primaria**

65-80% Irresecables al diagnostico (Ictericia / colangitis)

30-60% Irresecables tras laparoscopia exploradora

Ca 19.9

CCA perihiliar

Diagnostico

Ecografía

TC ALTA RESOLUCION

Lesión

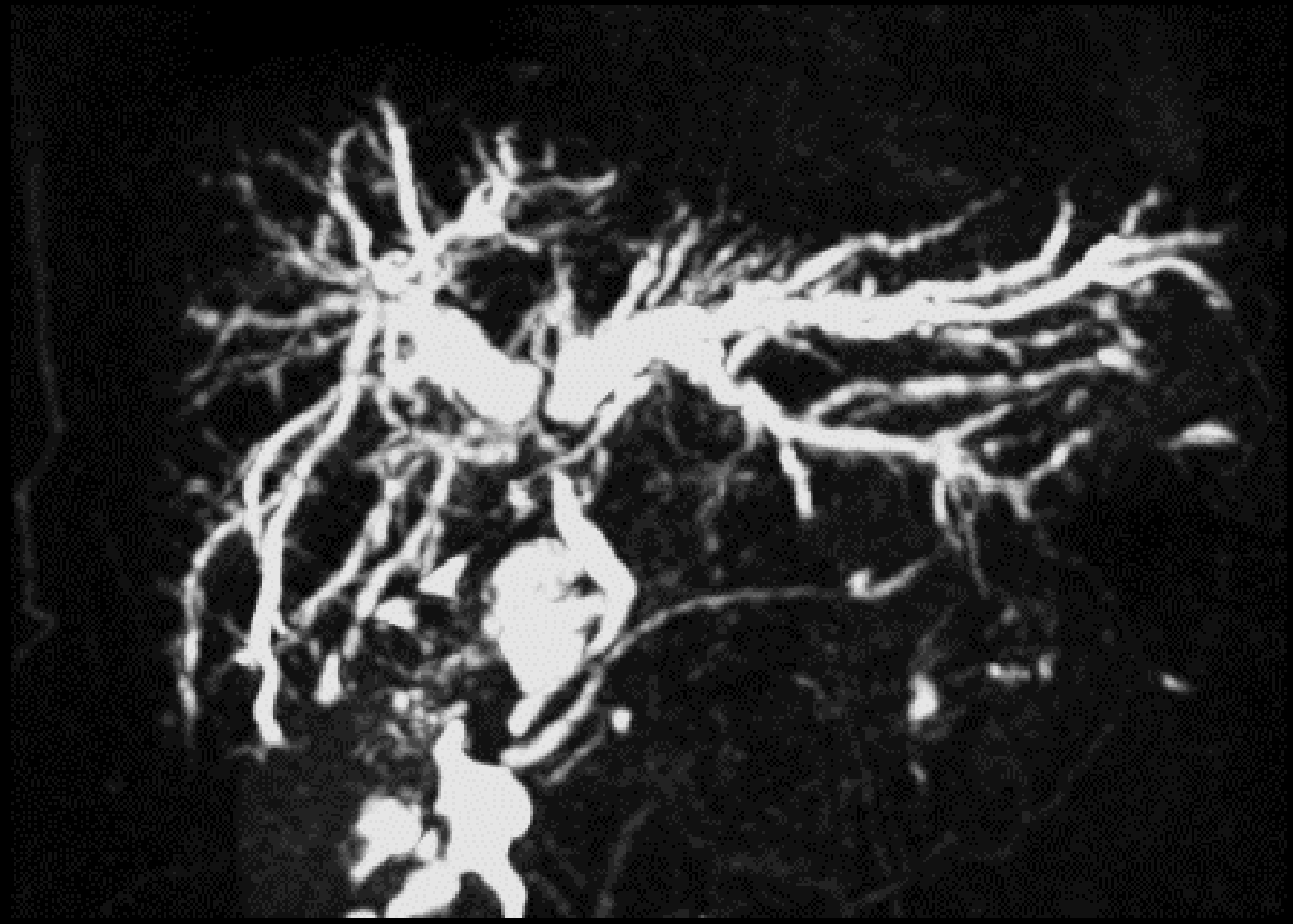
Afectación vascular

Parénquima

RM – COLRM

Conductos biliares

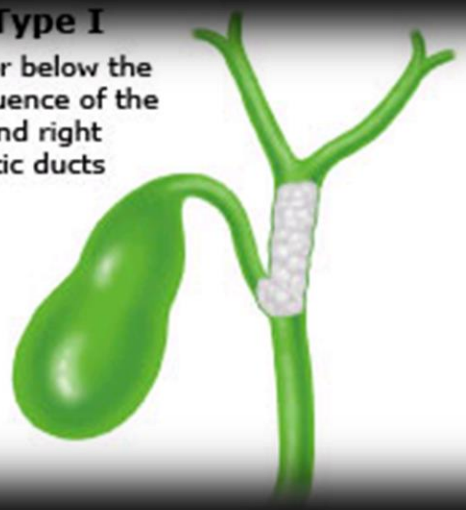
PET – Preoperatorio



Classification systems	Basis of classification	Advantage	Disadvantage
Bismuth–Corlette Classification System	Tumor location and the extent of ductal infiltration	1. One of the first anatomical classification systems to describe proximal involvement of tumor into the bile ducts	1. Absence of parameters such as vascular encasement, lymph node metastases and hepatic atrophy 2. Limited to predict resectability and survival
Memorial Sloan-Kettering Cancer Center Staging System	In addition to bile duct involvement, portal vein involvement and lobar atrophy, tumor location and extent of bile duct involvement were taken into account as well	1. The resectability can be determined 2. Predict prognosis	1. Could not reflect pathological factors such as LN metastasis and distant metastasis
Tumor-Node-Metastasis Staging System	The scope of the primary tumor, lymph node metastasis and distant metastasis.	1. Mainly used postoperatively as a prognostic tool	1. Results are usually obtained after surgery, so as a preoperative evaluation of resectability is of little significance
New staging system proposed by International Cholangiocarcinoma Group	The size and the extent of the tumor, the involvement of the hepatic artery, portal vein and lymph nodes, distant metastases, and the volume of the putative remnant liver after resection.	1. Making a more accurate judgment on the resectability of PHC, surgical selection and prognosis	1. A large number of clinical data and studies are needed to verify the effectiveness of this new staging system

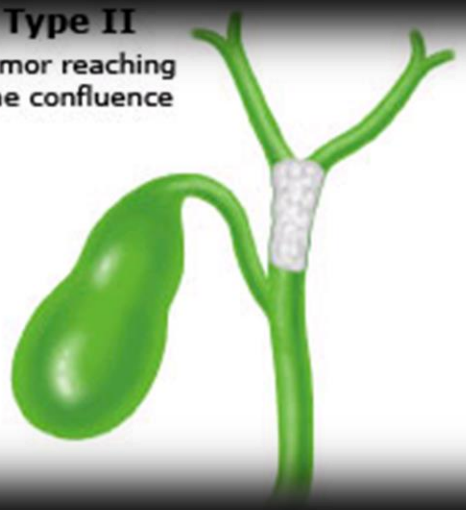
Type I

Tumor below the confluence of the left and right hepatic ducts



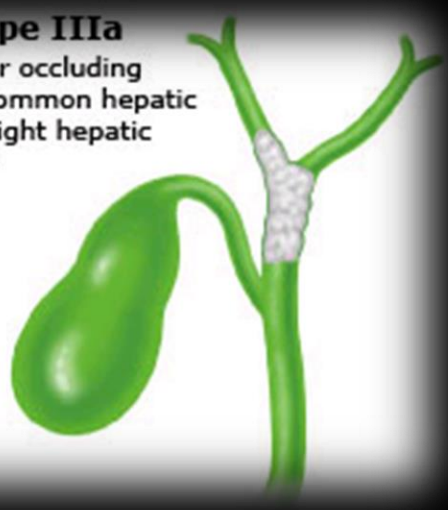
Type II

Tumor reaching the confluence



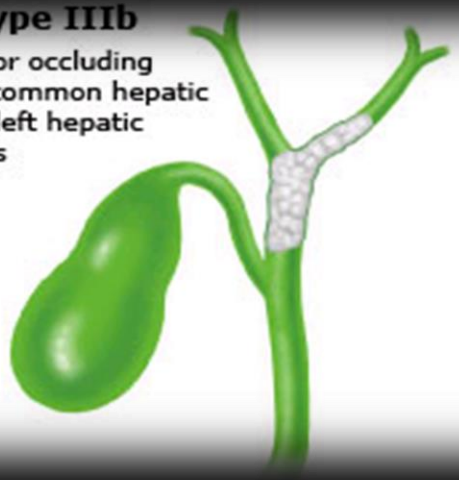
Type IIIa

Tumor occluding the common hepatic and right hepatic ducts



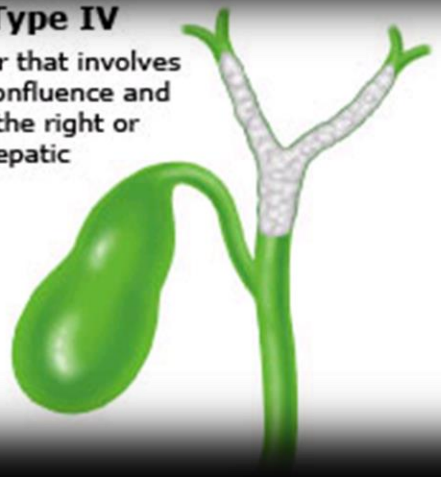
Type IIIb

Tumor occluding the common hepatic and left hepatic ducts



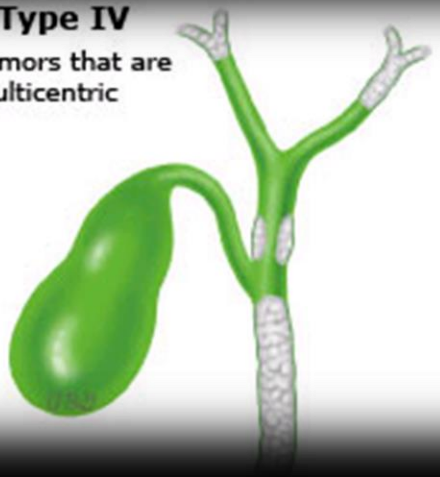
Type IV

Tumor that involves the confluence and both the right or left hepatic duct



Type IV

Tumors that are multicentric



CCA perihiliar

Diagnostico

T1 Tumor confined to the bile duct, with extension up to the muscle layer or fibrous tissue
T2 Tumor invades beyond the wall of the bile duct to surrounding adipose tissue, or tumor invades adjacent hepatic parenchyma
T2a Tumor invades beyond the wall of the bile duct to surrounding adipose tissue
T2b Tumor invades adjacent hepatic parenchyma
T3 Tumor invades unilateral branches of the portal vein or hepatic artery
T4 Tumor invades the main portal vein or its branches bilaterally, or the common hepatic artery; or unilateral second-order biliary radicals with contralateral portal vein or hepatic artery involvement

NX Regional lymph nodes cannot be assessed
N0 No regional lymph node metastasis

N1 1-3 LN hilar, cystic duct, common bile duct, hepatic artery, posterior pancreatoduodenal, and portal vein

N2 Four or more positive lymph nodes from the sites described for N1

AJCC 8TH 2017

RESECABILIDAD LOCORREGIONAL

CCA perihiliar

Resecabilidad

Extensión ductal bilateral proximal

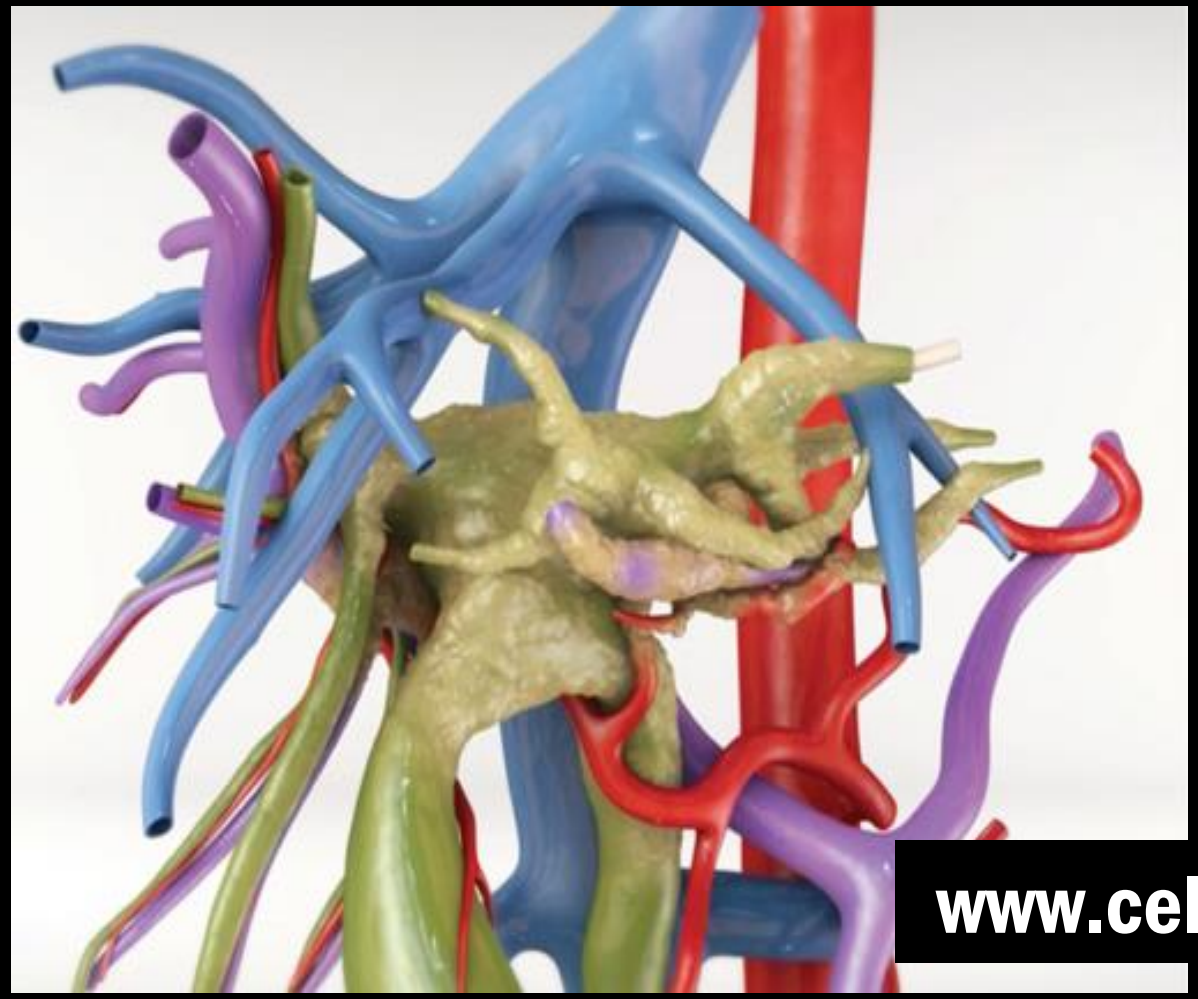
Grado de atrofia

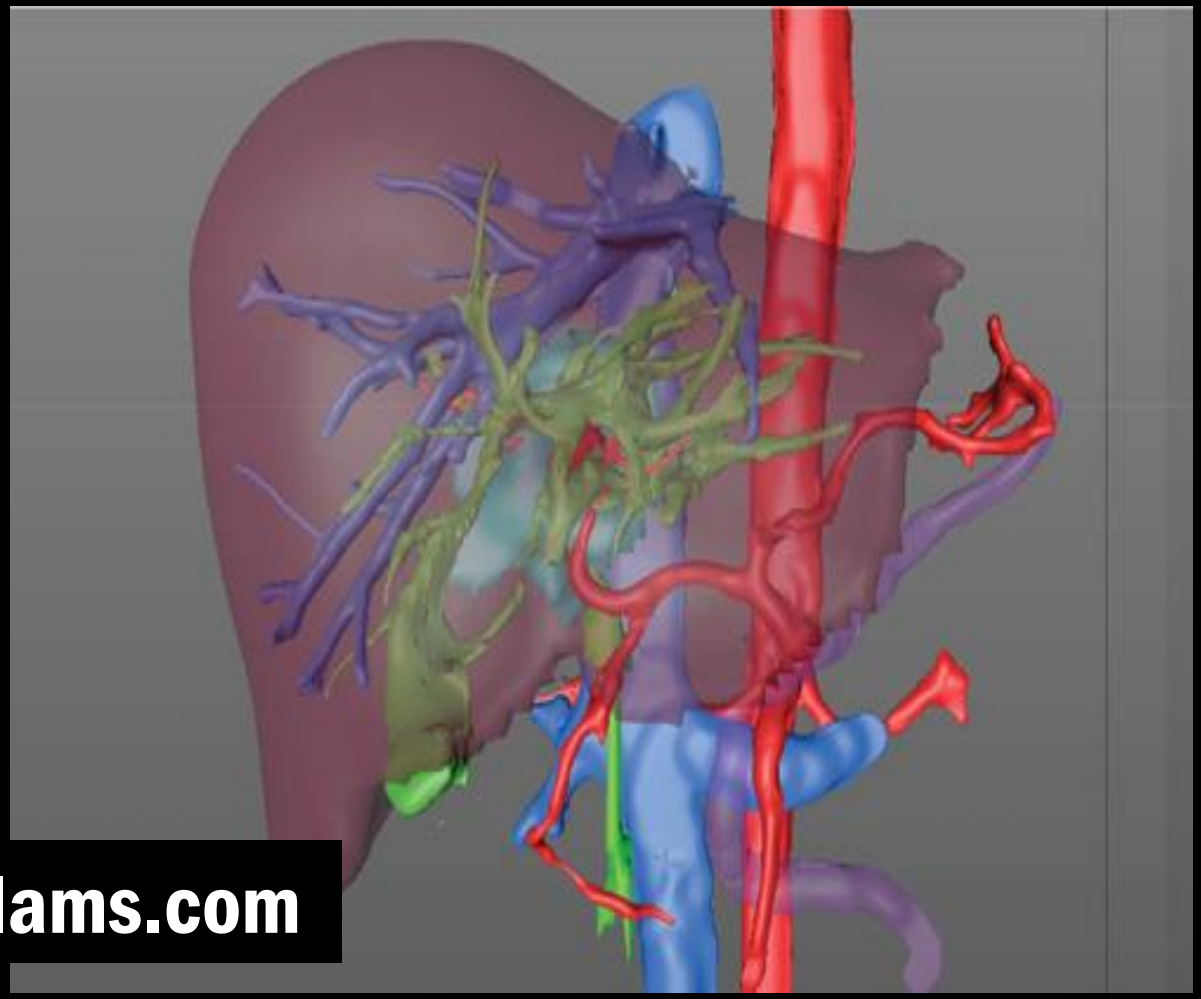
Extensión ductal contralateral

Extensión vascular contralateral

CCA perihiliar

Diagnostico





www.cellams.com

Papel de USE-PAAF

¿Se necesita biopsia?

CCA perihiliar

¿Se necesita Biopsia?

CCA no resecable / metastásico - SI

CCA potencialmente resecable

Cirugía invasiva
10-22% estenosis hiliares benignas
Neoadyuvancia
Confirmar / Descartar resecabilidad

Complicaciones
Diseminacion

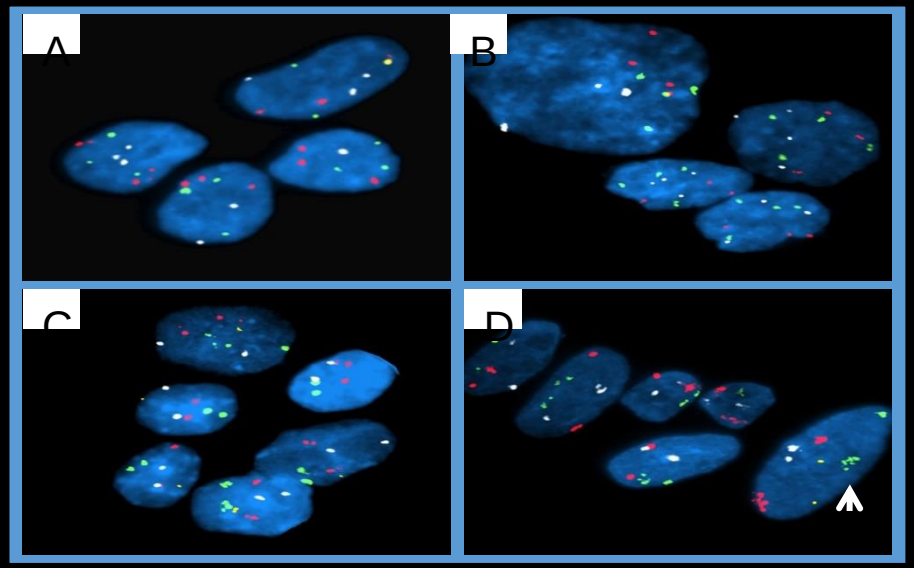
CCA perihiliar

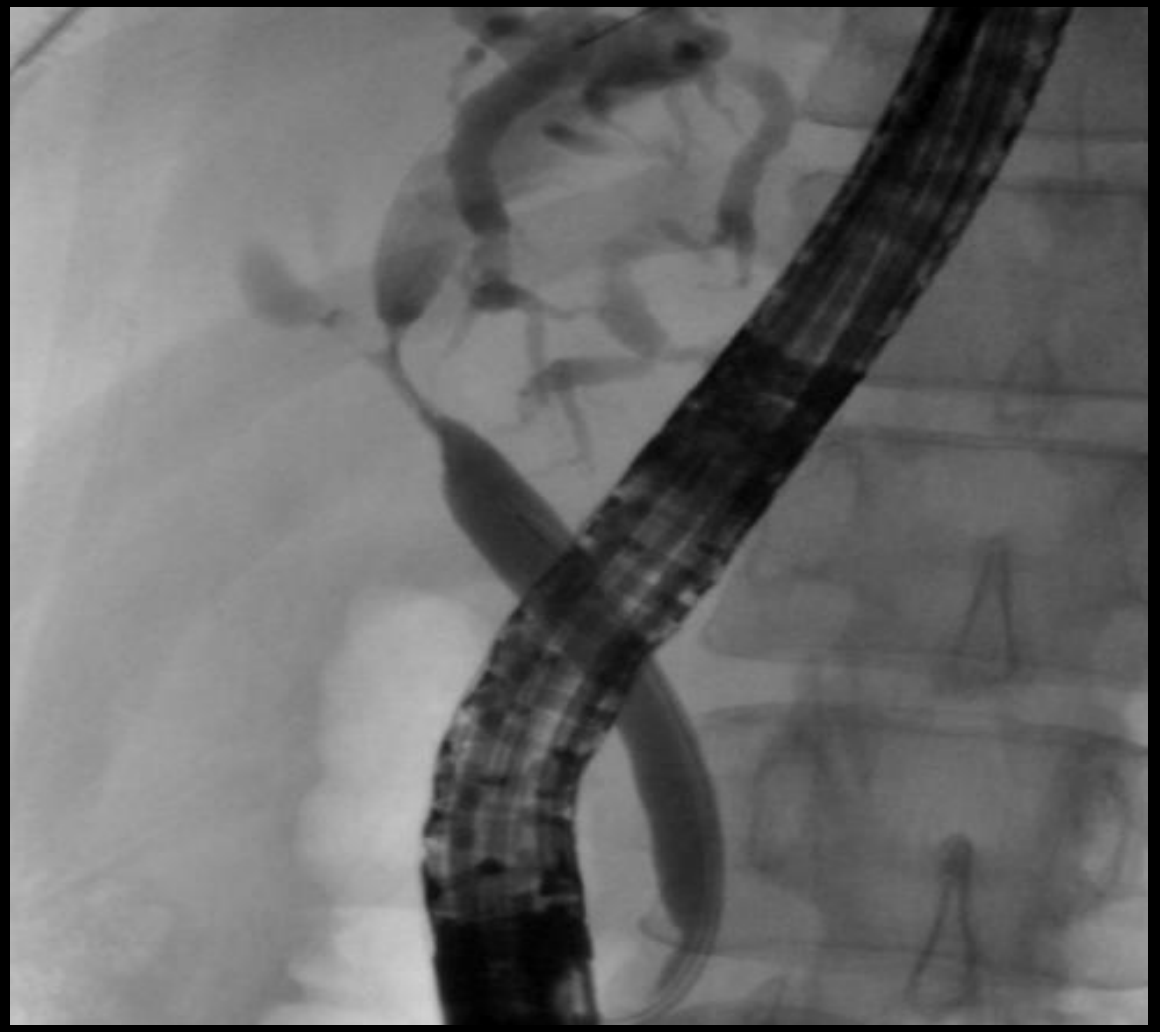
Diagnostico

CPRE + cepillado

S 30-60%

Overall pooled S 42%





De Bellis et al., GIE 2002: 9 studies, 155 pts pancreaticobiliary cancers
Trikudanathan G, et al., GIE 2014: 54 studies, 747 PSC pts


Boston
Scientific
Ext

SYSTEMATIC REVIEW AND META-ANALYSIS

Single-operator cholangioscopy and targeted biopsies in the diagnosis of indeterminate biliary strictures: a systematic review

Udayakumar Navaneethan, MD,[1] Muhammad K. Hasan, MD,[1] Vennisvasanth Lourdusamy, MD,[1] Basile Njei, MD, MPH,[2] Shyam Varadarajulu, MD,[1] Robert H. Hawes, MD[1]

Orlando, Florida, USA

10 studies involving 456 patients

Biopsias Colangioscopia

Sensibilidad 60.1%

Especificidad 98.0%.

CCA perihiliar

Papel de USE

Papel de use en el diagnostico y estadiaje

USE PAAF

¿El tumor es resecable?

USE PAAF en tumores resecables

USE PAAF en tumores NO resecables

¿Es necesaria biopsia?

ORIGINAL ARTICLE: Clinical Endoscopy

Role of EUS for preoperative evaluation of cholangiocarcinoma: a large single-center experience CME

Mehdi Mohamadnejad, MD, John M. DeWitt, MD, Stuart Sherman, MD, Julia K. LeBlanc, MD, Henry A. Pitt, MD, Michael G. House, MD, Kelly J. Jones, MD, Evan L. Fogel, MD, Lee McHenry, MD, James L. Watkins, MD, Gregory A. Cote, MD, Glen A. Lehman, MD, Mohammad A. Al-Haddad, MD

Indianapolis, Indiana, USA; Tehran, Iran

223 Patients

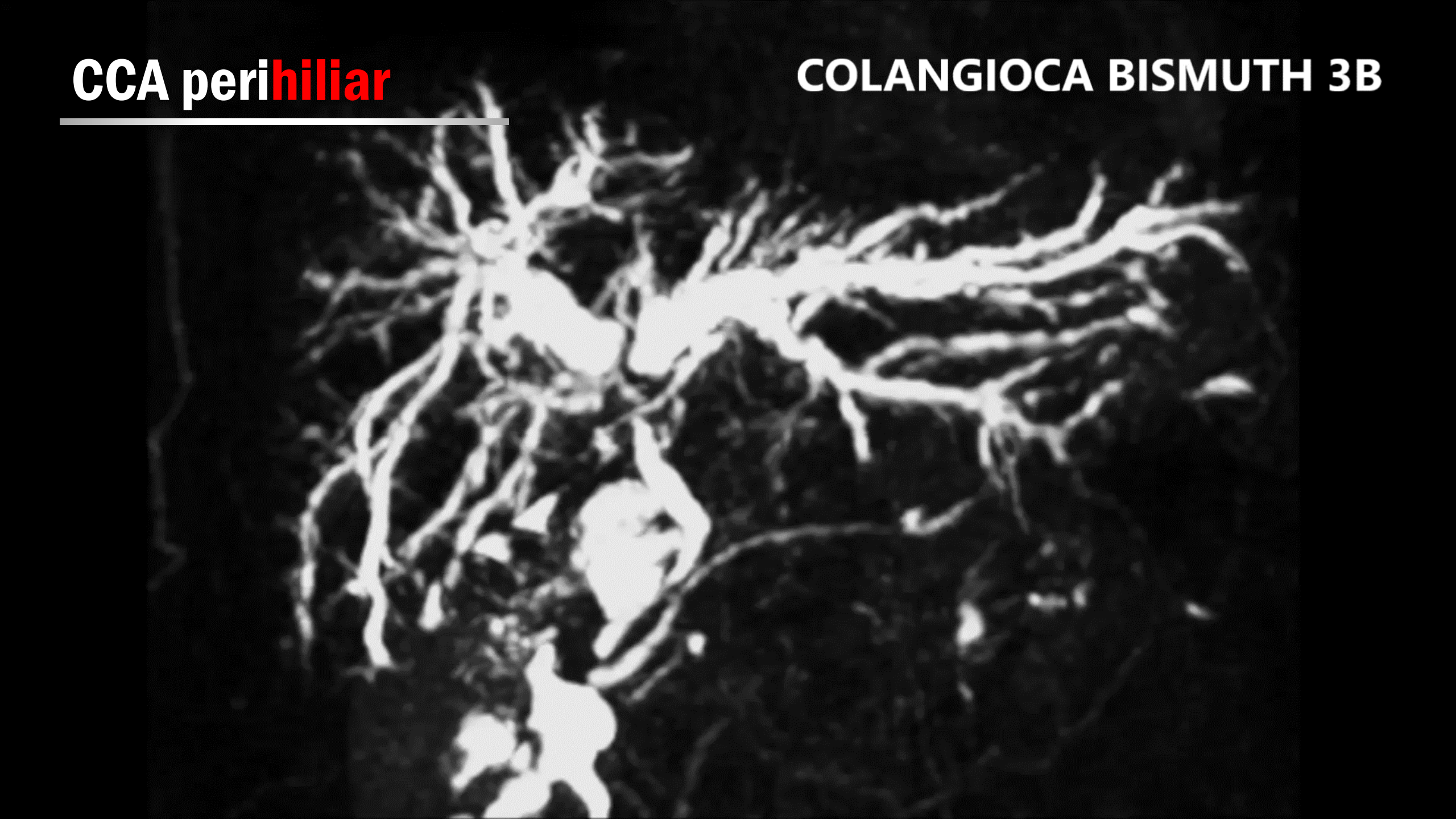
EUS identified the tumor
in more cases of distal CCA (51 of 51 [100%])
than of proximal CCA (25 of 30 [83%]

Sensitivity of 53%
Specificity of 97%

for detecting unresectability

EUS is complementary to CT or MRI for detecting unresectability in cholangiocarcinoma

CCA perihiliar



Meta-Analysis

Endoscopic ultrasound in the diagnosis of cholangiocarcinoma as the etiology of biliary strictures: a systematic review and meta-analysis

Udayakumar Navaneethan[1], Basile Njei[2], Preethi GK Venkatesh[1], Vennisvasanth Lourdusamy[1] and Madhusudhan R Sanaka[1]

[1]Digestive Disease Institute, The Cleveland Clinic, Cleveland, OH, USA and [2]Department of Internal Medicine, University of Connecticut Health Center, Farmington, CT, USA

Estenosis (CCA) proximal

Sensibilidad 81%
Especificidad 100%

Navaneethan U, Gastroenterol Rep (Oxf). 2015

SYSTEMATIC REVIEW AND META-ANALYSIS

Diagnostic yield of EUS-guided FNA for malignant biliary stricture: a systematic review and meta-analysis (CME)

Anahita Sadeghi, MD,[1,*] Mehdi Mohamadnejad, MD,[1*] Farhad Islami, MD,[2] Abbas Keshtkar, MD,[1] Mohammad Biglari, MD,[1] Reza Malekzadeh, MD,[1] Mohamad A. Eloubeidi, MD[3]

Tehran, Iran; Atlanta, Georgia; Anniston, Alabama, USA

Pooled Sensitivity of EUS-FNA

Distal 83% (95% CI, 68%-98%)

Proximal 76% (95% CI, 66%-85%)

Pooled negative likelihood ratio
Distal strictures: 0.20 (95% CI, 0.02-1.66)
Proximal strictures: 0.31 (95% CI, 0.21-0.45)

Pooled Specificity of EUS-FNA

Distal 100% (95% CI, 63%-100%)

Proximal 100% (95% CI, 95%-100%)

Pooled positive likelihood:
Distal strictures: 6.93 (95% CI, 1.08-44.54)
Proximal strictures: 13.05 (95% CI, 4.34-39.18)

Sadeghi, Gastrointest Endosc 2016

TRASPLANTE HEPÁTICO
THE MAYO PROTOCOL

CCA perihiliar

Trasplante

Pathologically confirmed hilar cholangiocarcinoma or CA19-9 >100 ng/ml in the presence of a radiographically malignant stricture

Tumor size < 3 cm

Absence of distant metastases on CT (and/or MRI) and isotope bone scan

Negative EUS-FNA of regional lymph nodes and negative staging laparotomy/ hand-assisted-laparoscopy with biopsy of regional lymph nodes

Transperitoneal biopsy contraindication

ORIGINAL ARTICLE

Trans-peritoneal fine needle aspiration biopsy of hilar cholangiocarcinoma is associated with disease dissemination

Julie K. Heimbach, William Sanchez, Charles B. Rosen & Gregory J. Gores

William J von Liebig Transplant Center, Mayo Clinic College of Medicine, Rochester, MN, USA

190 pts referred to Mayo with hilar CCA

16 Transperitoneal sampling prior: 13 perc FNA and 3 EUS FNA

At operative staging: 83% of those with prior sampling had peritoneal mets vs only 8% in those without

HBP 2011

Efficacy of Neoadjuvant Chemoradiation, Followed by Liver Transplantation, for Perihilar Cholangiocarcinoma at 12 US Centers

SARWA DARWISH MURAD,* W. RAY KIM,* DENISE M. HARNOIS,‡ DAVID D. DOUGLAS,§ JAMES BURTON,‖ LAURA M. KULIK,¶ JEAN F. BOTHA,# JOSHUA D. MEZRICH,** WILLIAM C. CHAPMAN,‡‡ JASON J. SCHWARTZ,§§ JOHNNY C. HONG,‖‖ JEAN C. EMOND,¶¶ HOONBAE JEON,## CHARLES B. ROSEN,* GREGORY J. GORES,* and JULIE K. HEIMBACH*

Supervivencia libre de enfermedad a 2 y 5 años 78% y 65%

Transplantation Versus Resection for Hilar Cholangiocarcinoma: An Argument for Shifting Treatment Paradigms for Resectable Disease

Cecilia G. Ethun; Alexandra G. Lopez-Aguiar; Douglas J. Anderson; Andrew B. Adams; Ryan C. Fields; Maria B. Doyle; William C. Chapman; Bradley A. Krasnick; Sharon M. Weber; Joshua D. Mezrich; Ahmed Salem; Timothy M. Pawlik; George Poultsides; Thuy B. Tran; Kamran Idrees; Chelsea A. Isom; Robert C. G. Martin; Charles R. Scoggins; Perry Shen; Harveshp D. Mogal; Carl Schmidt; Eliza Beal; Ioannis Hatzaras; Rivfka Shenoy; Kenneth Cardona; Shishir K. Maithel

3-yr: **54vs44%;** 5-yr: **54vs29%** ; p=0.03)

Murad, Gastroenterology 2012
Ethun Ann Surg. 2018

ORIGINAL ARTICLE: Clinical Endoscopy

EUS-guided FNA of regional lymph nodes in patients with unresectable hilar cholangiocarcinoma

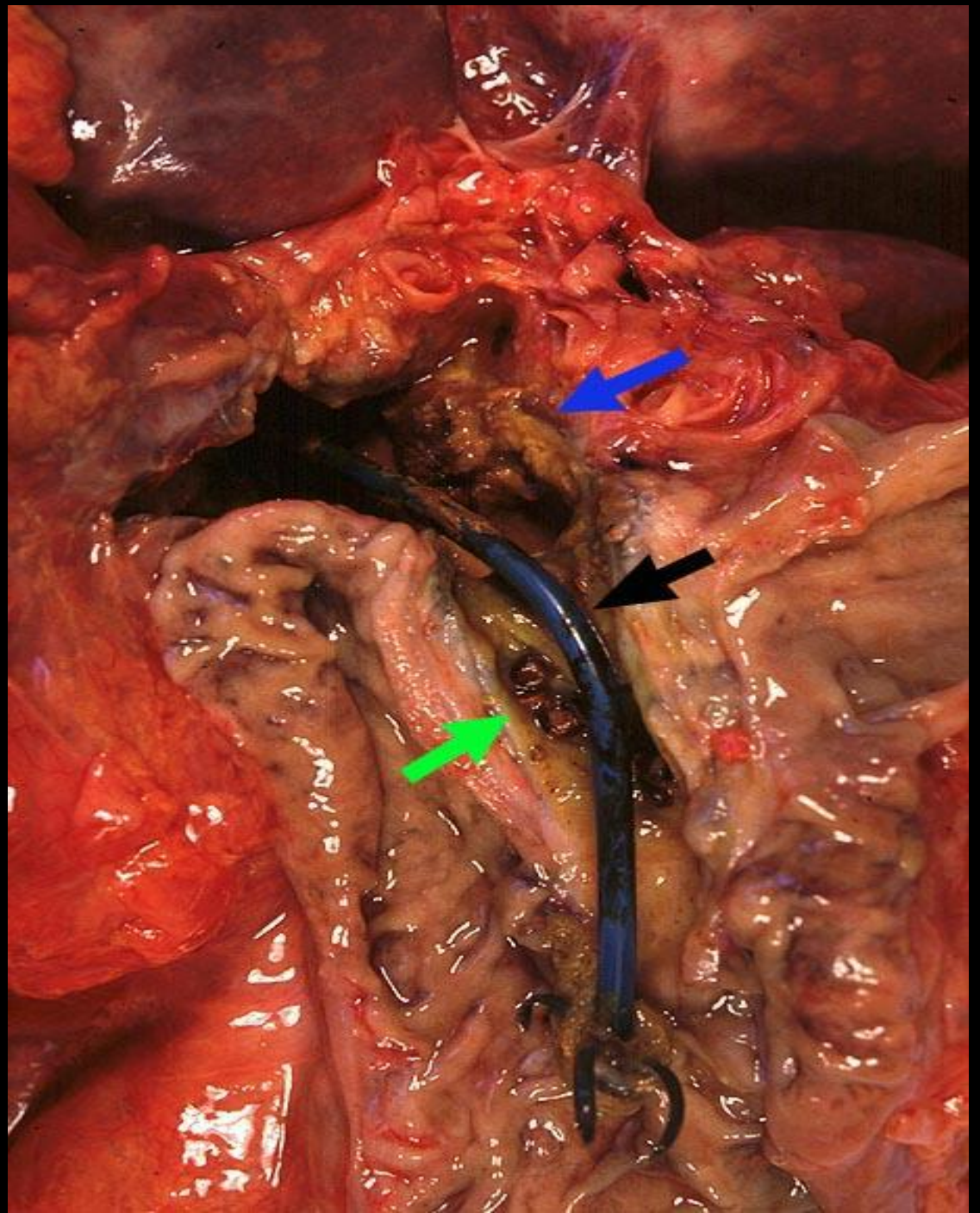
Ferga C. Gleeson, MD, Elizabeth Rajan, MD, Michael J. Levy, MD, Jonathan E. Clain, MD, Mark D. Topazian, MD, Gavin C. Harewood, MD, Georgios I. Papachristou, MD, Naoki Takahashi, MD, Charles B. Rosen, MD, Gregory J. Gores, MD

Rochester, Minnesota, USA

47 pacientes – PAAF 70 adenopatías
8 pt PAAF +

EXCLUSION TRASPLANTE 17%

Gleeson, GIE 2012




CCA distal

CCA distal

Posible origen común con Ca pancreas

Mal pronostico (20%-40 post DPC)

Asociacion CEP

Papel mas importante USE diagnostica

CCA distal

AJCC 8TH 2017

PRIMARY TUMOR (T)

TX Primary tumor cannot be assessed
Tis Carcinoma in situ/high-grade dysplasia
T1 Tumor invades the bile duct wall with a depth less than 5 mm
T2 Tumor invades the bile duct wall with a depth of 5 to 12 mm
T3 Tumor invades the bile duct wall with a depth greater than 12 mm
T4 Tumor involves the celiac axis, superior mesenteric artery, and/or common hepatic artery

REGIONAL LYMPH NODES (N)

NX Regional lymph nodes cannot be assessed
N0 No regional lymph node metastasis
N1 Metastasis in one to three regional lymph nodes
N2 Metastasis in four or more regional lymph nodes

Notes: regional lymph nodes include the common bile duct, hepatic artery, anterior and posterior pancreaticoduodenal and right lateral superior mesenteric artery nodes

CCA distal

Meta-Analysis

Endoscopic ultrasound in the diagnosis of cholangiocarcinoma as the etiology of biliary strictures: a systematic review and meta-analysis

Udayakumar Navaneethan[1], Basile Njei[2], Preethi GK Venkatesh[1], Vennisvasanth Lourdusamy[1] and Madhusudhan R Sanaka[1]

[1]Digestive Disease Institute, The Cleveland Clinic, Cleveland, OH, USA and [2]Department of Internal Medicine, University of Connecticut Health Center, Farmington, CT, USA

SENSIBILIDAD 45% si no masa en prueba de imagen

Sensibilidad 66%, Especificidad 100%

detectar CCA como causa de estenosis biliar

Navaneethan U, Gastroenterol Rep (Oxf). 2015

—Review Article—

Endoscopic retrograde cholangiopancreatography versus endoscopic ultrasound for tissue diagnosis of malignant biliary stricture: Systematic review and meta-analysis

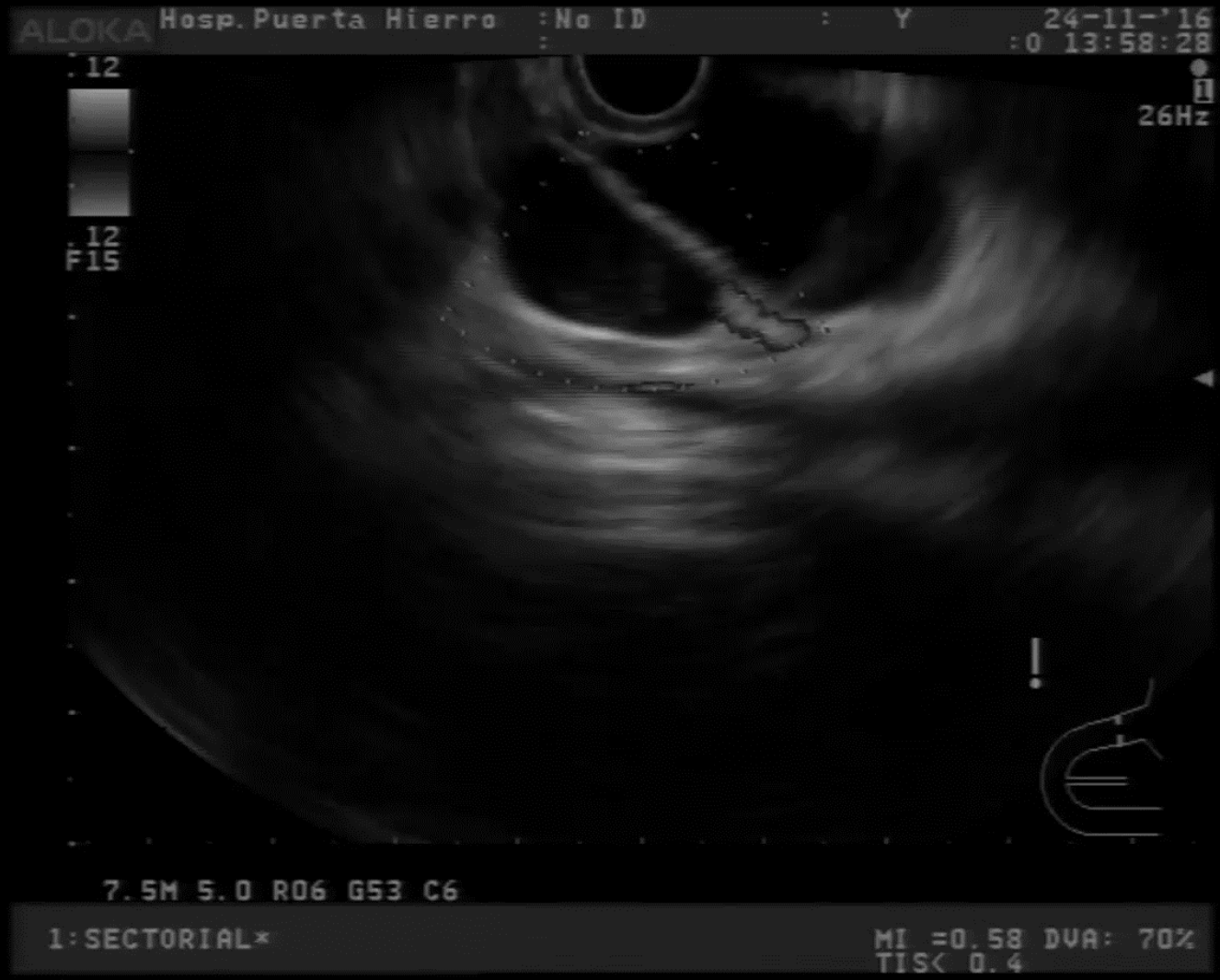
EUS FNA

SENS **75%** (46-100%)
ESP 100% (86-100%)
VPN 34%

ERCP

SENS **49%** (46-50%)
ESP 96% (87-100%)
VPN 47%

DTH Moura et al, Endoscopic Ultrasound 2018


ALOKA
Hosp.Puerta Hierro :No ID : Y
24-11-'16
:0 13:58:28
.12
.12
F15
26Hz
7.5M 5.0 R06 G53 C6
1:SECTORIAL*
MI =0.58 DVA: 70%
TIS< 0.4


Sin Nombre 619
Hospital Puerta de Hierro
21.12.2018
13:37:02
36
48
81 kVp
1,94 mA
2.5 mir
0,00606 mGym
OEC

ESTENOSIS BILIAR SIN LESION DEFINIDA

CCA distal

“Masquerades”

Mirizzi

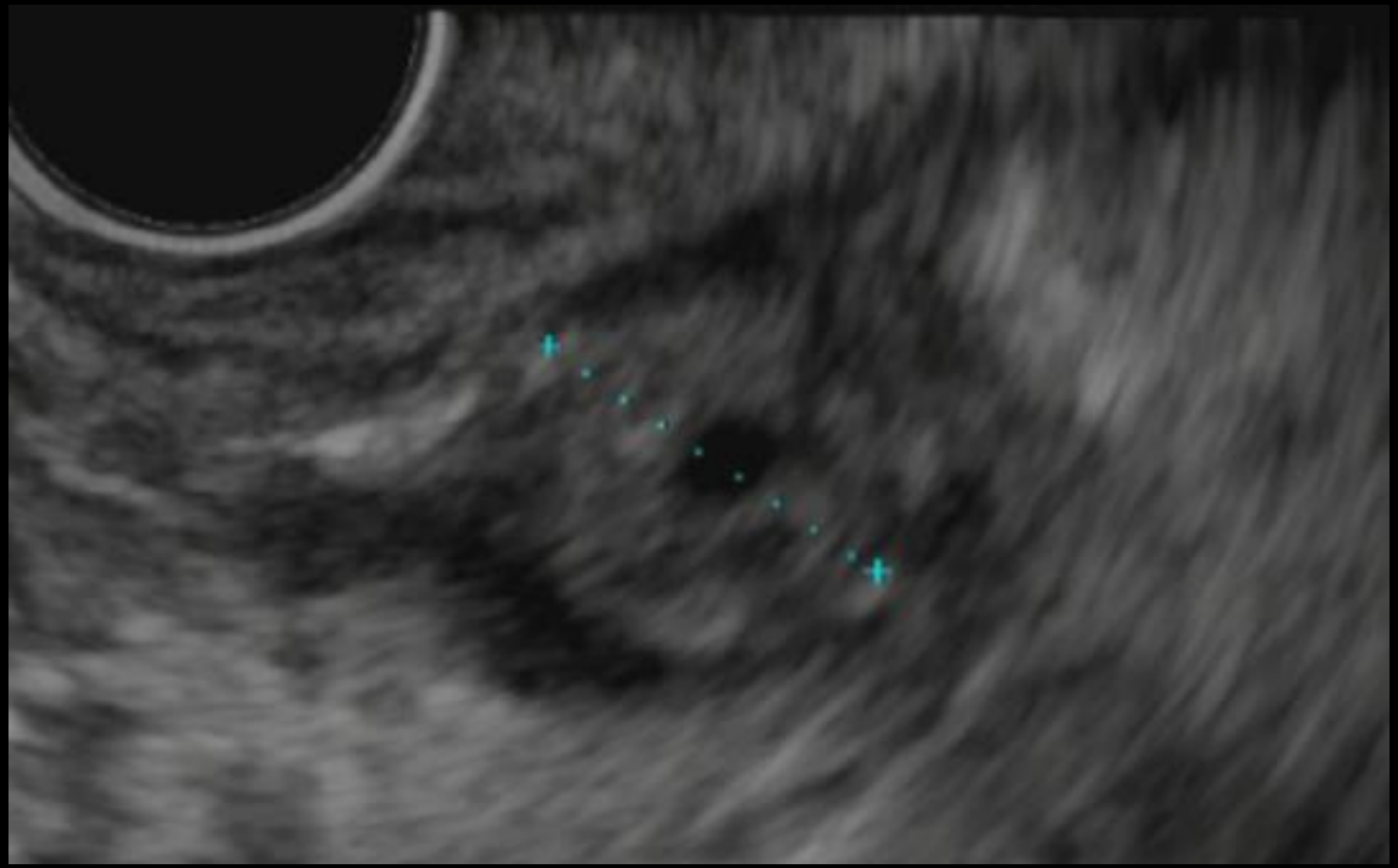
Colangitis esclerosante

Colangiopatía VIH

Inflamatorio

IgG4

Biliopatía portal



Co

CONCLUSIONES

CCA EXTRAhepatico

Papel USE

Difícil interpretación estudios

Obtención tejido tratamientos sistémicos – NO RESECABLES

Valorar potencial resecabilidad (N2, Mtx)

Descartar causas benignas – evitar cirugías

Ojo posibilidad de diseminación

PAAF Adenopatías

Carcinoma
Vesicula Biliar

Carcinoma
Vesícula Biliar

Variabilidad geográfica: Sudamérica (Chile), Asia

Diagnostico incidental
Ecografía
Post qx colelitiasis

Mal pronostico: 25% Resecables
16% Supervivencia 5 años

Carcinoma
Vesícula Biliar

Factores asociados

Colelitiasis

Vesícula en porcelana

CEP

Anomalías congénitas

Salmonella, HP

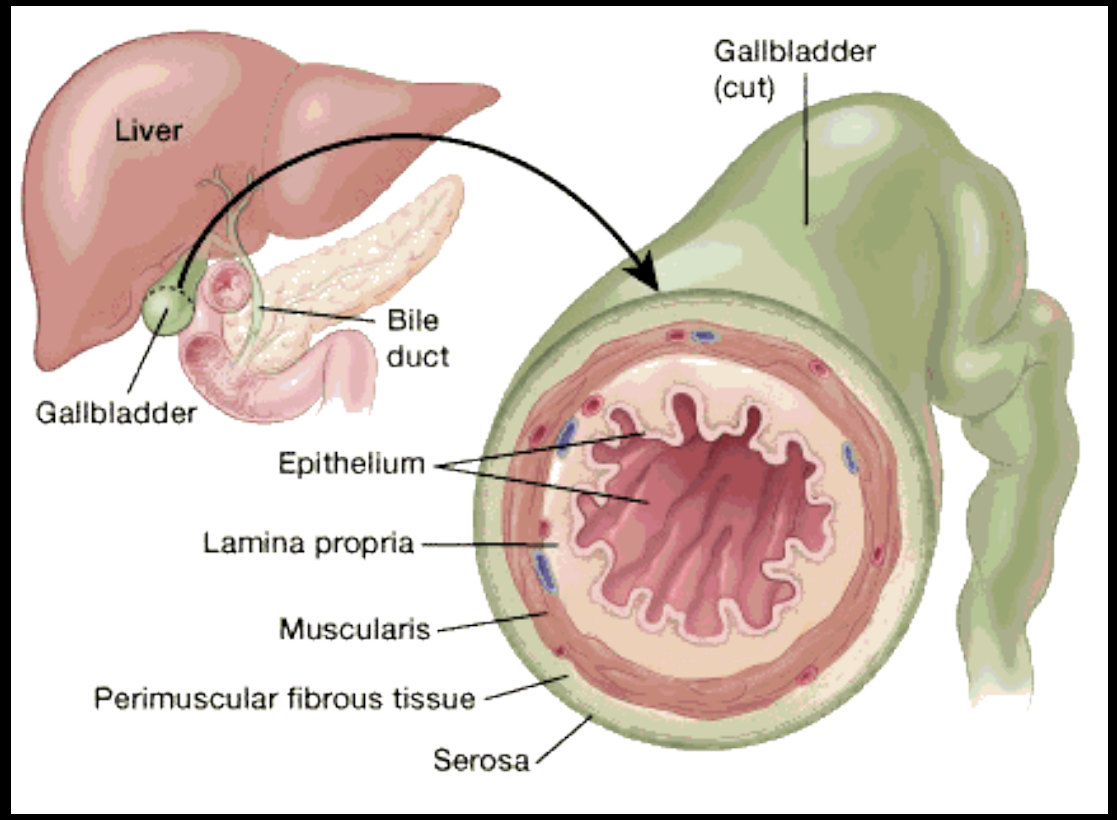
Tóxicos

POLIPOS VESICULARES

Carcinoma
Vesícula Biliar

T1a Lamina propia
T1b Muscular
T2a invasión tejido perimuscular sin invadir peritoneo
T2b invasión tejido perimuscular sin invadir parénquima
T3 perfora la serosa invadiendo:
Peritoneo visceral
Parenquima hepático
Organos adyacentes
T4 Invasion portal, arteria hepática o >2 órganos adyacentes

N1 Metastasis 1-3 ganglios regionales
N2 Metastasis 4-6 ganglios regionales



AJCC 8TH 2017

Carcinoma
Vesícula Biliar

USE: ESTADIAJE Y AFECTACIÓN LINFÁTICA

Sens 92% Esp 88%

USE PAAF Adenopatías no locorregionales:

(cistico, CBD, arteria hepatica y periportales)

TC: Adenopatías portales, Implantes peritoneales, Invasion vascular

RM: Arbol biliar, parénquima hepático

Carcinoma
Vesícula Biliar

Table 1. Surgical management of gallbladder carcinoma

Stage	Recommendation
Tis (confined to mucosa) or T1a (lamina propria)	Simple cholecystectomy
T1b (invading the muscular layer)	Radical cholecystectomy is recommended, although some series support simple cholecystectomy
T2 tumors (invading the perimuscular connective tissue)	Radical en bloc resection including liver bed
T3 tumors (those that perforate the serosa and/or directly invade the liver and/or one other adjacent organ)	Radical resection selectively
T4 tumors (those that invade the main portal vein or hepatic artery, and/or those that invade two or more extrahepatic organs or structures)	Generally unresectable

REINTERVENIR si..

>T1a
Alto grado, invasion linfovascular o perineural
Cistico afectado
Cirugía no estanca o perforacion

Carcinoma
Vesícula Biliar

Diagnostico diferencial

Colecistitis xantogranulomatosa

Adenomiomatosis

Polipos vesiculares (<10% adenomas)

Carcinoma
Vesícula Biliar

Diagnostico diferencial

Condición	Superficie	Características internas
ADENOMIOMATOSIS	Suave o irregular	Areas quísticas anecoicas Artefacto en cola de cometa
COLECISTITIS XANTHOGRANULOMATOSA	Suave	Ecotextura mixta (hiper-hipoecoica)
HIPERPLASIA MUCOSA	Suave	Ecogenicidad baja uniforme
GALLBLADDER CARCINOMA	Irregular o papilar	Hipoecogenico irregular

Carcinoma
Vesícula Biliar

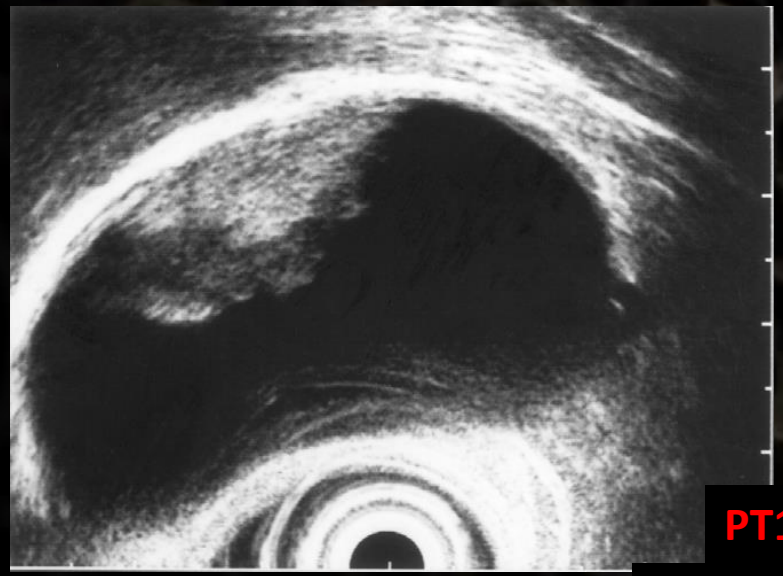
Diagnostico EUS

PTis

A- PEDICULADO

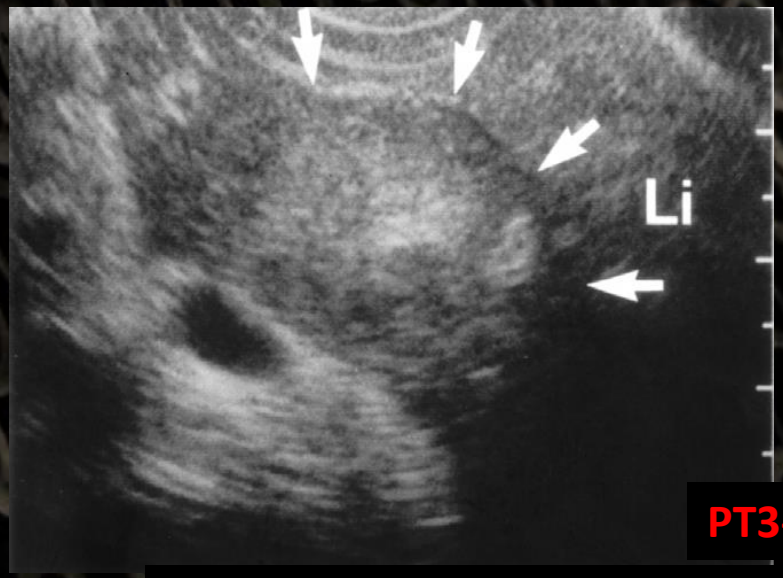
PT2

C- SESIL + AFECTACION PARED



PT1

B- SESIL



PT3-4

D- PROTRUIDO AFECT PARENQ

Sadamoto
GIE 2003


41Hz

METASTASIS BILIARES

METASTASIS BILIARES

Infrecuente

Intrahepáticas / Extension intraductal / compresión extrínseca

Mama, Colon, HCC

USE PAAF diagnostico -> sospecha previa


GRACIAS