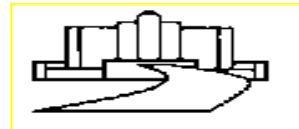


Locoregional Treatments

Of NET liver metastasis

MP Vullierme

Beaujon Hospital



Locoregional Treatments

Liver NET metastasis

Not the primary

- Surgery if possible

Two main topics:

- Trans arterial chemoembolization (TACE)
- Radiofrequency

Multidisciplinary treatment liver metastases

Simple pattern:
One liver lobe

Complex pattern:

One lobe
predominantly
affected

Diffuse pattern

surgery

Surgery AND local
ablative treatment

Medical therapy

Systemic
chemotherapy

Endovascular therapy

Molecular targeted therapy

Loco-regional Treatments

Chemoembolization

Percutaneous ablation

- Ethanol injection
- Thermal ablative therapies: Radiofrequency, microwave
- Non thermal ablation: electroporation

Arterial chemotherapy

Internal radiation, radioembolization

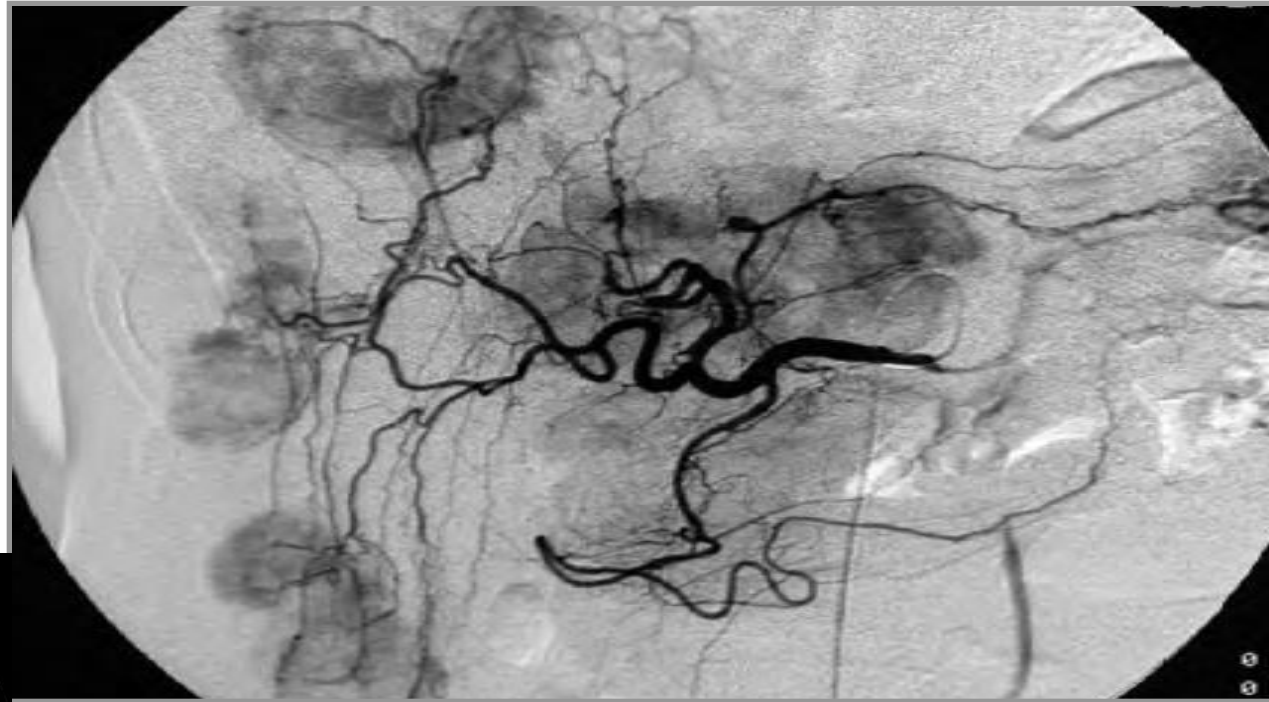
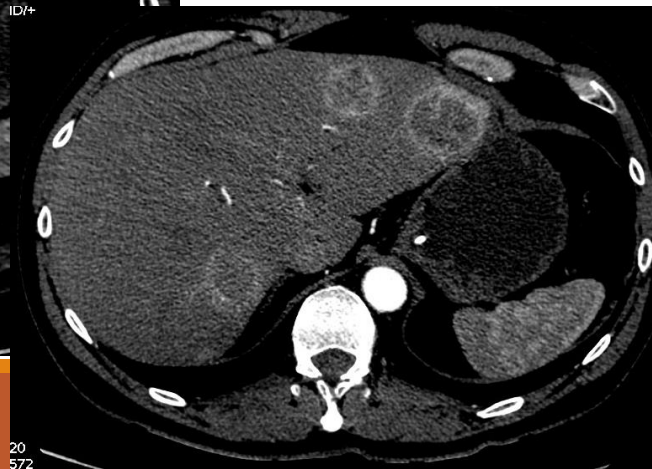
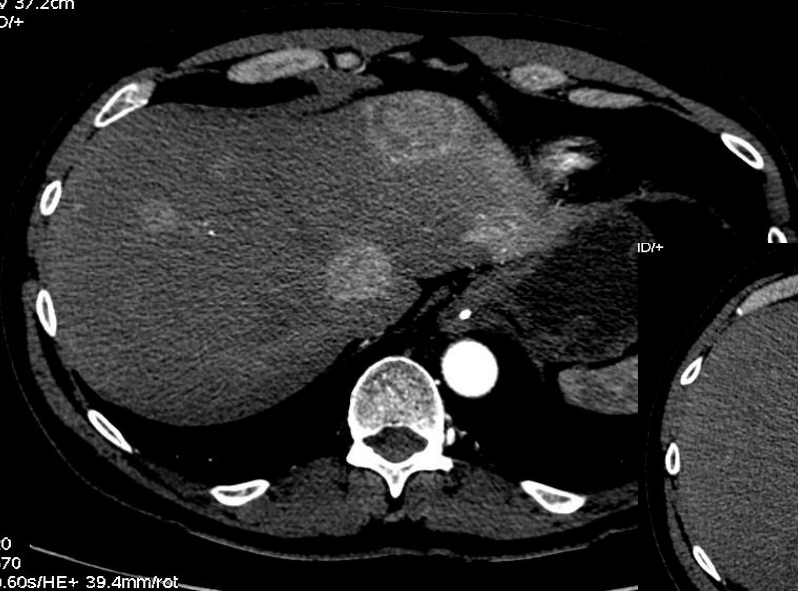
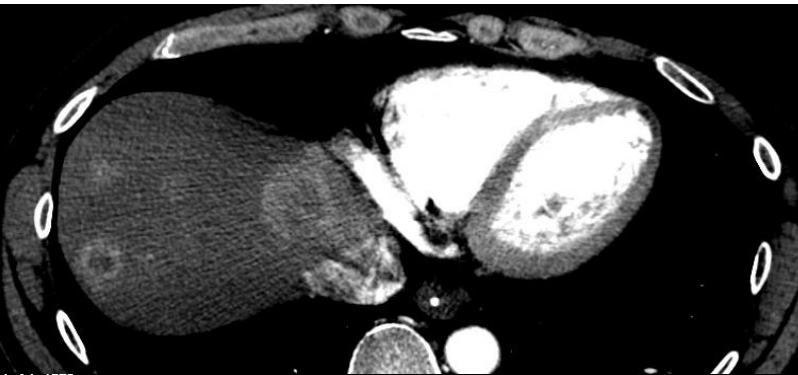
- No randomized study comparing efficacy
- Multidisciplinary board

Transcatheter Arterial Chemo Embolization: TACE

injection of Drug + vector into the arty , then embolization



Transcatheter Arterial Chemo Embolization: TACE



Background

Liver metastases are frequent in patients with carcinoid tumors, significantly influencing overall prognosis

And with malignant duodenopancreatic NET

Hepatic intra-arterial embolization (HAE) TACE are effective in
controlling hormonal symptoms 70-100 %
reducing tumor size (response rates 33-92%)

Diaco et al, Am J Surg 1995
Roche et al, Eur Radiol 2003
Gupta et al, Cancer 2005
Marrache et al, Br J Cancer 2007

TACE: contra indications

Renal failure: clearance < 30 ml/mn

- Iodinated contrast

Main portal vein thrombosis

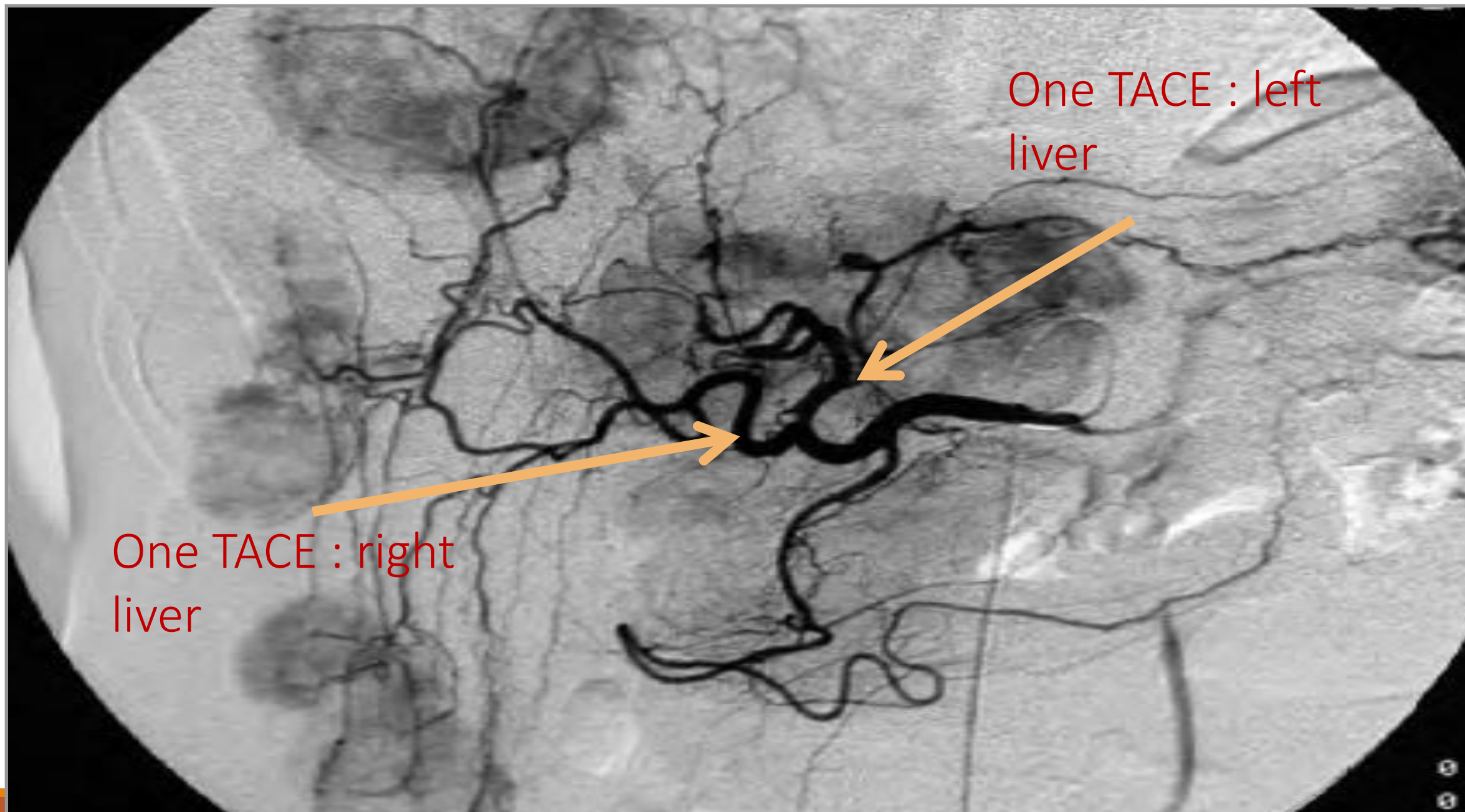
Including Tumorous portal vein thrombosis

- Hepatic failure

Entero biliary anastomosis

Biliary obstruction or papillary incontinence

- Liver abscesses



One TACE : left
liver

One TACE : right
liver

TACE: real life

Premedicated patient, somatostatin analogs, antibiotic debated

Angiography room

Surgical asepsis

Local anesthesia: xylocain

Femoral artery ponction (5F)

Temporary device

Catheter in the hepatic artery

Iodinated contrast

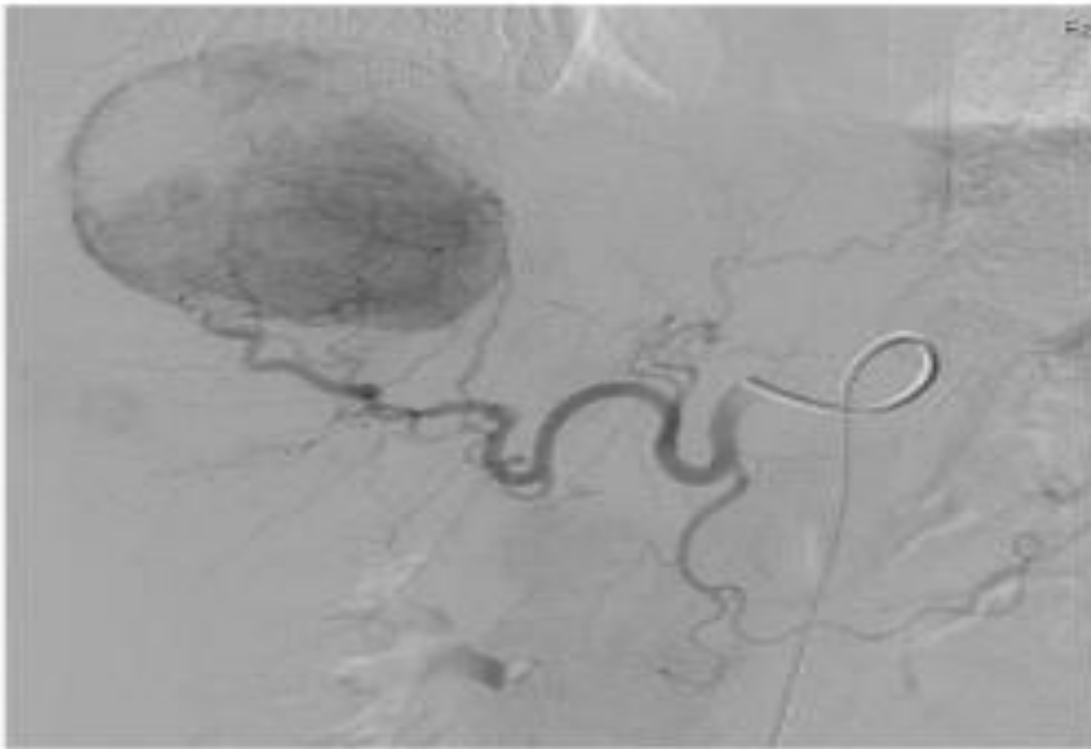


fluoroscopic guidance

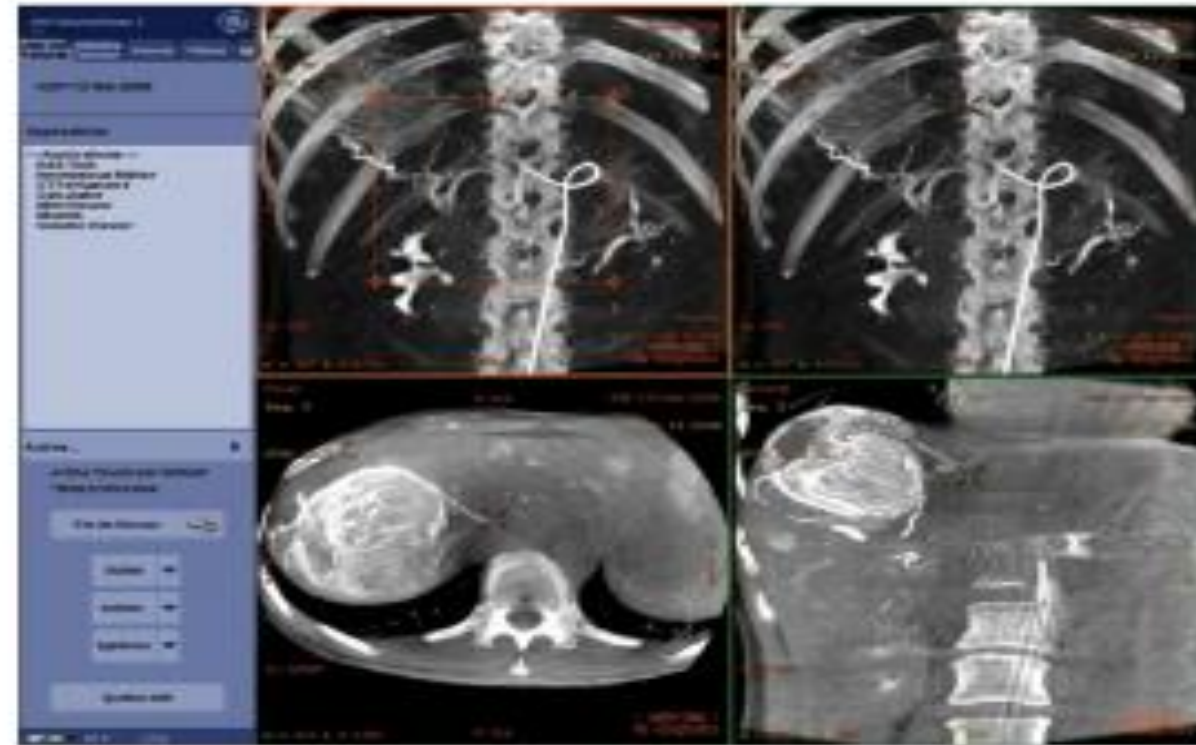


Angiography

2D



3D



PATIENT SIDE: mixture of...



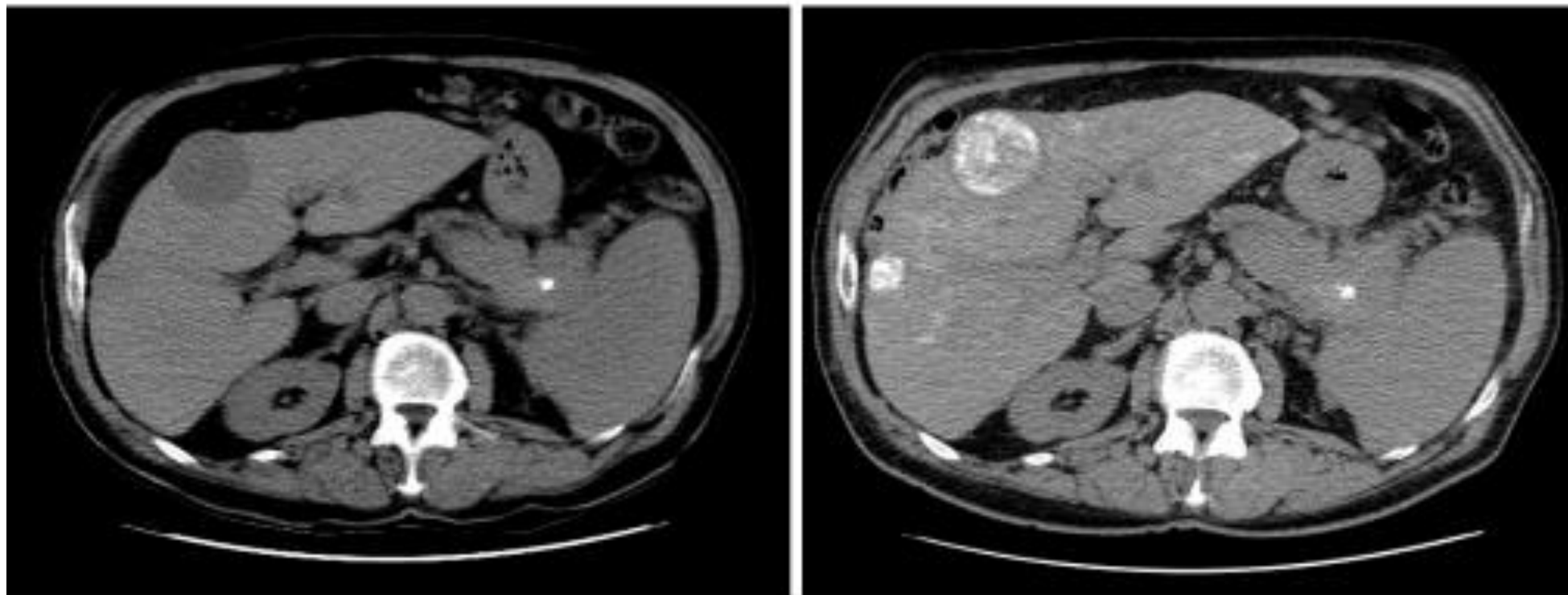
Vector: Emulsion of 10-15 mL Lipiodol UltraFluid (LUF)



and Chemotherapy

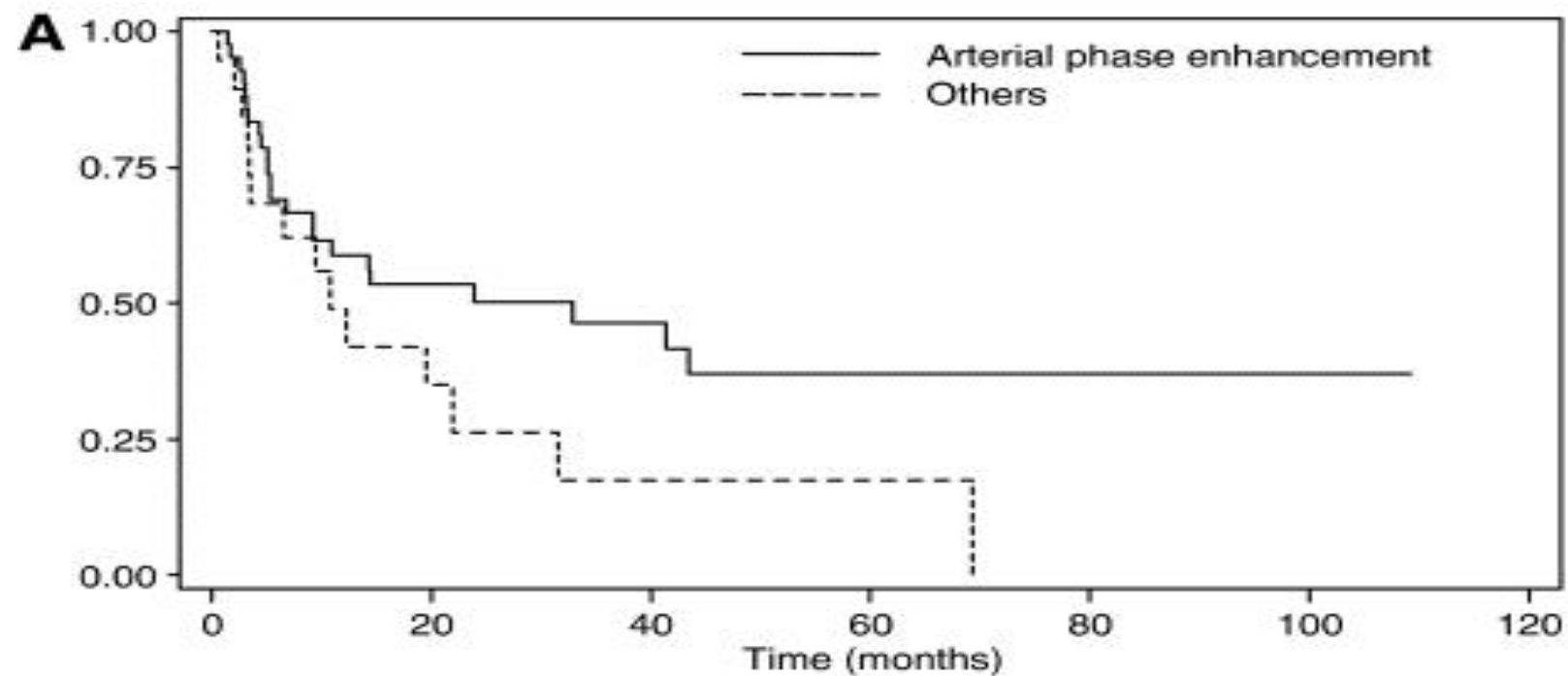


TACE and LIPIODOL



Survival rate/Arterial enhancement on CT

Multivariate analysis of predictors of tumour response (n= 43 pts) : **OR: 8.11**; CI 95%: 1.06–62; P=0.044



Embolization

Embolization with gelatin sponge particles (*Gelitaspon, Gelita Medical, Amsterdam, The Netherlands*): injected with iodinated contrast immediately after Chemotherapy with LUF

Always performed

- After arterial chemotherapy
- Or alone



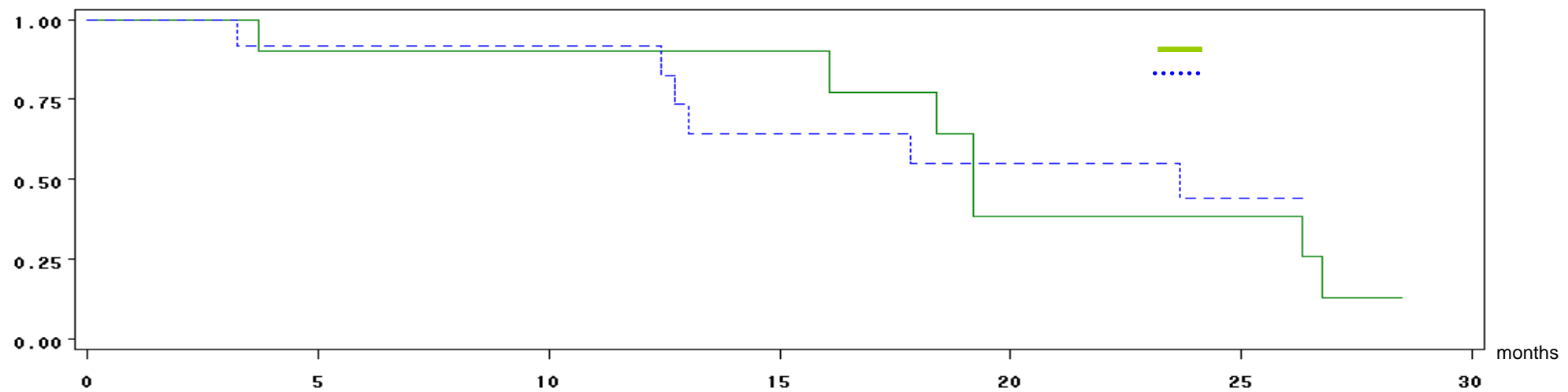
Arterial Embolization alone versus Chemoembolization

A prospective randomized study

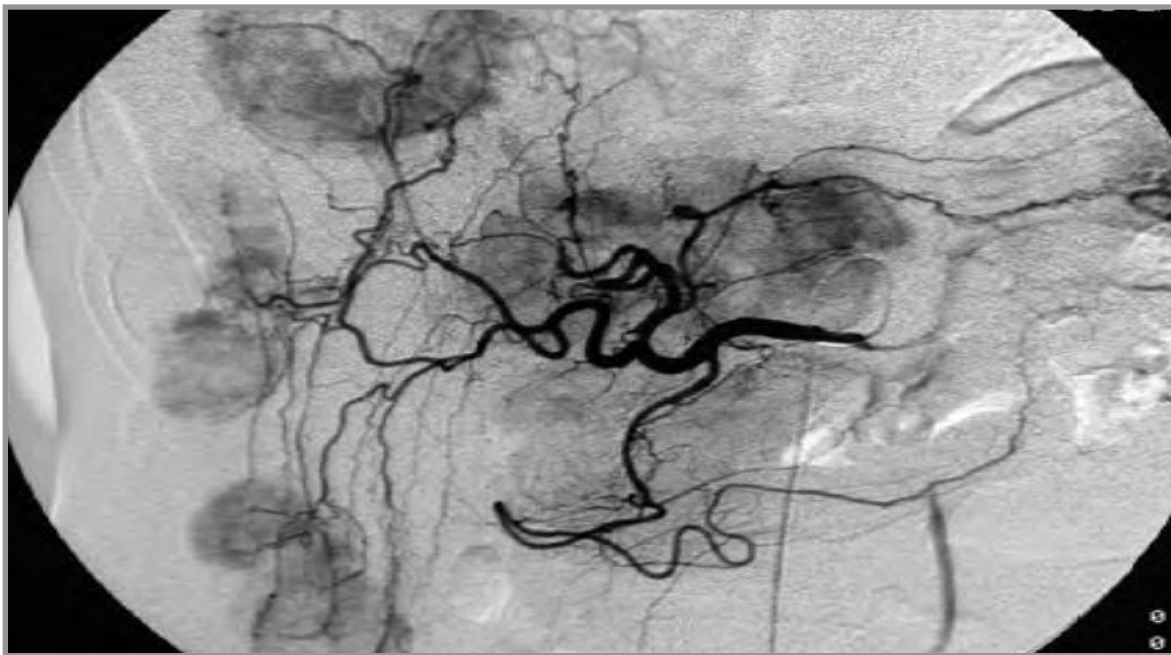
Results

Progression free survival

	HACE	HAE	P
median PFS	19.2 [16.1-26.8]	23.6 [12.7-NA]	
2-year PFS rates	38%	44%	0.90



Results evaluation: MDCT



Thermal ablative therapy

Radiofrequency

Microwave

Percutaneous treatment contra-indication

Hemostatic

Proximity of

- Digestive structure
- Heart

Ascitis

Number of lesion? (>10, 15 ?)

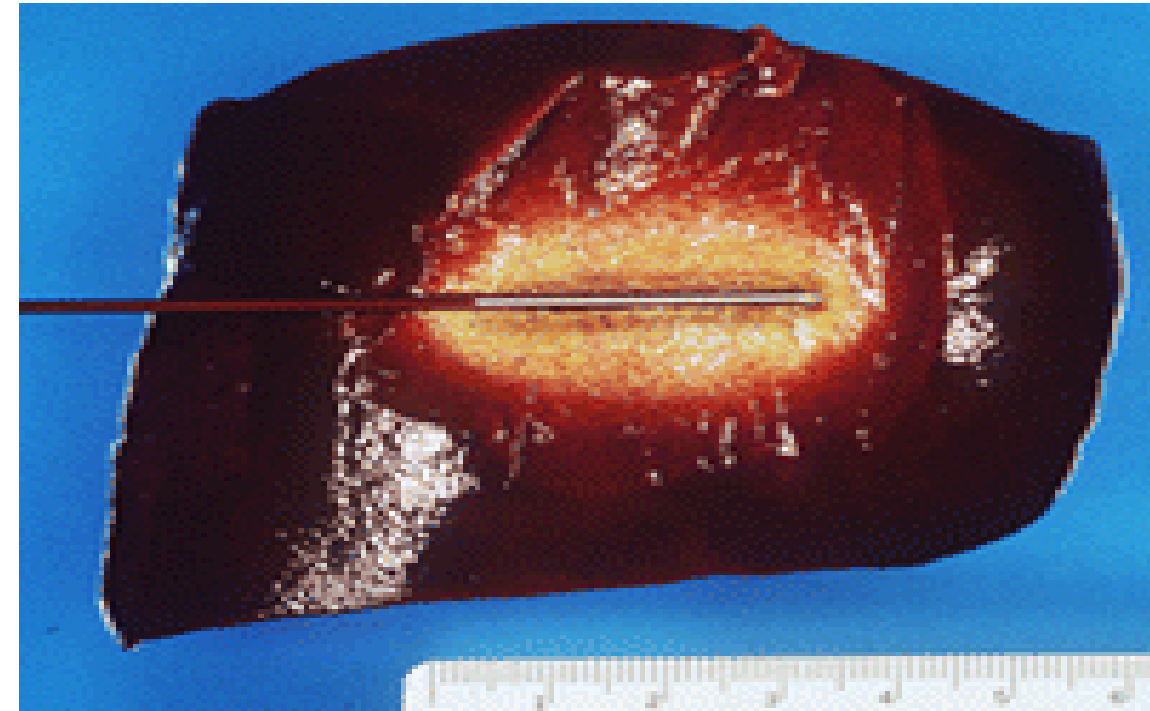
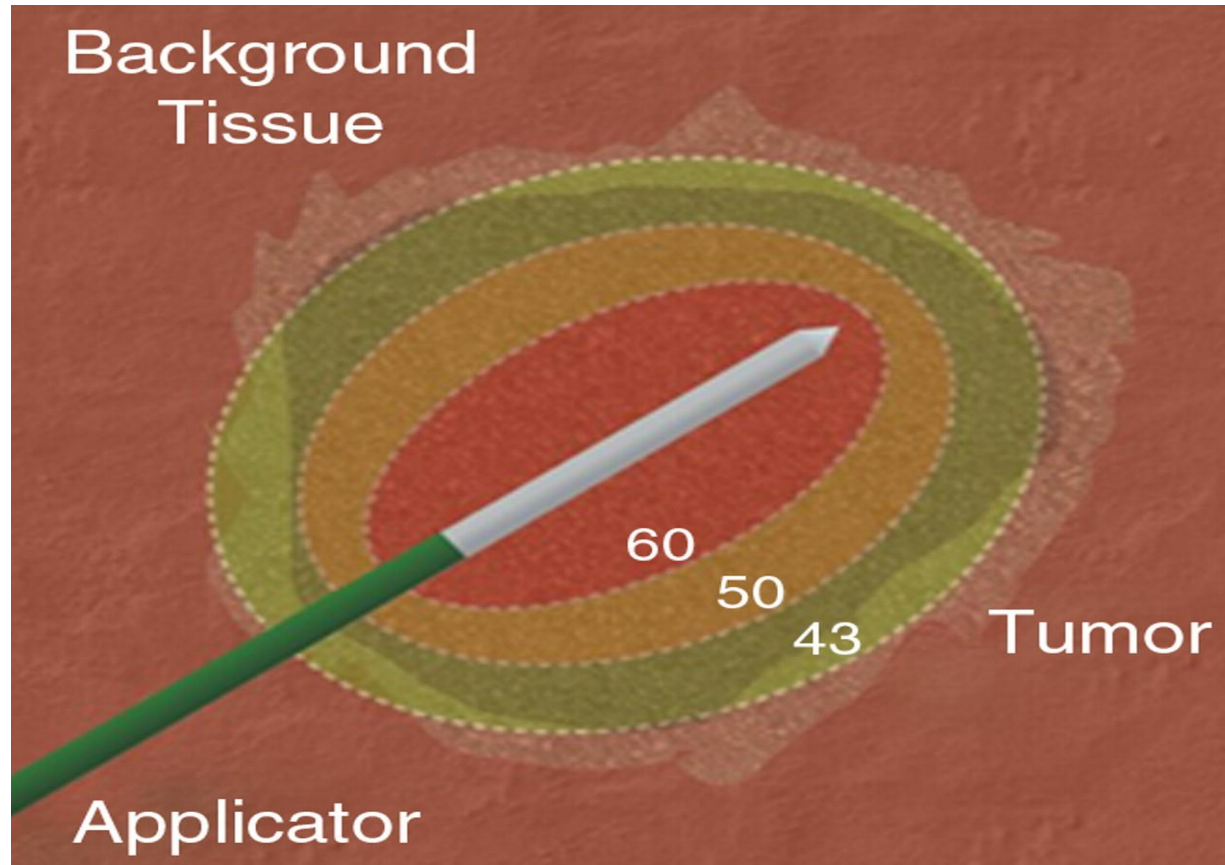
Size of lesion

- 3.5-5 cm

Entero biliary anastomosis

General anesthesia

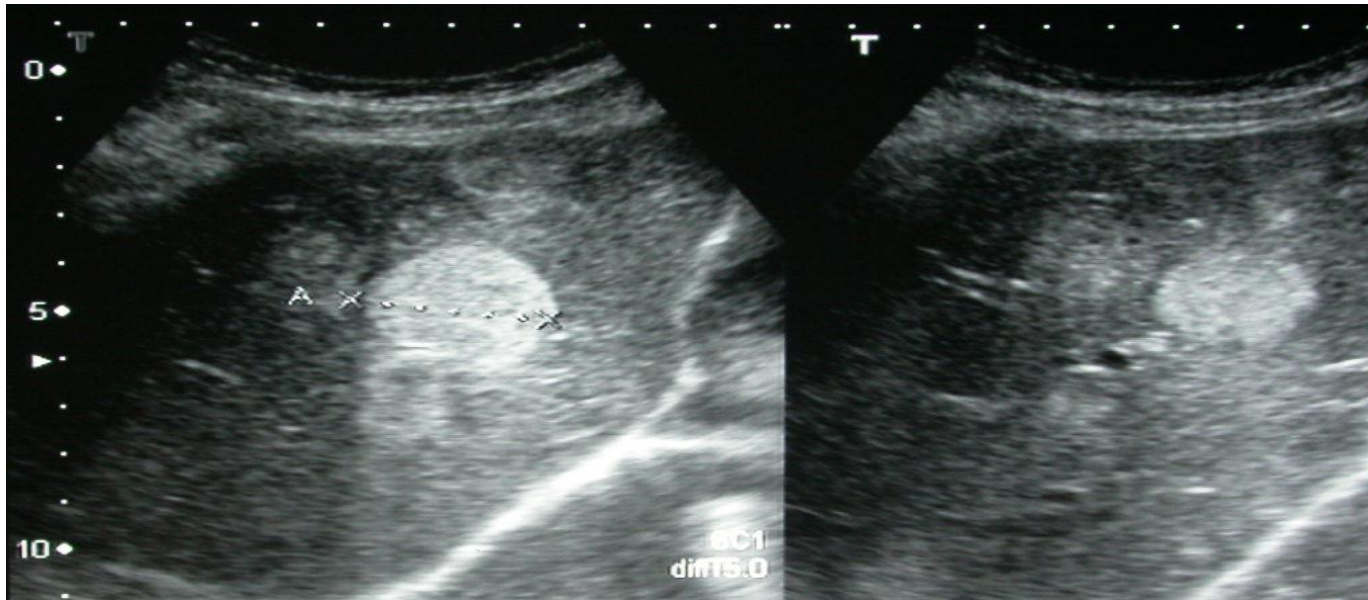
Radiofrequency



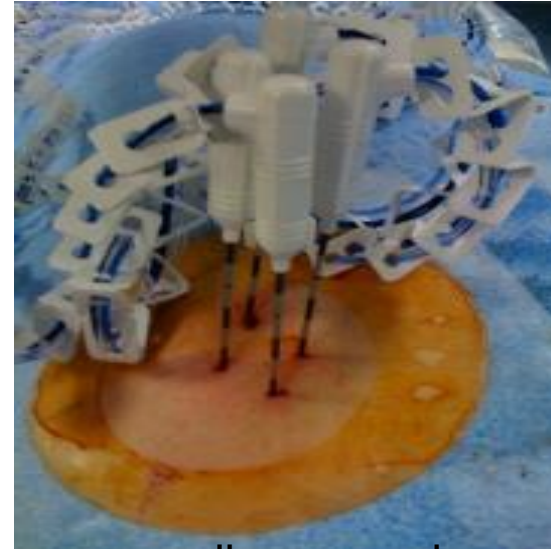
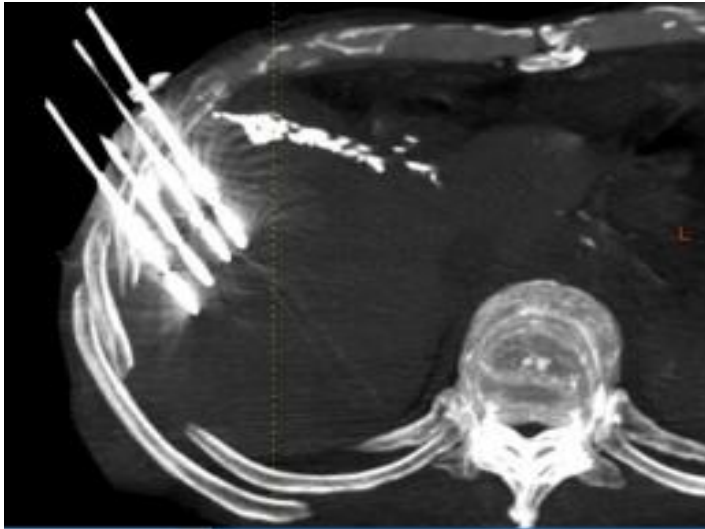
Technical approach

Radiofrequency:

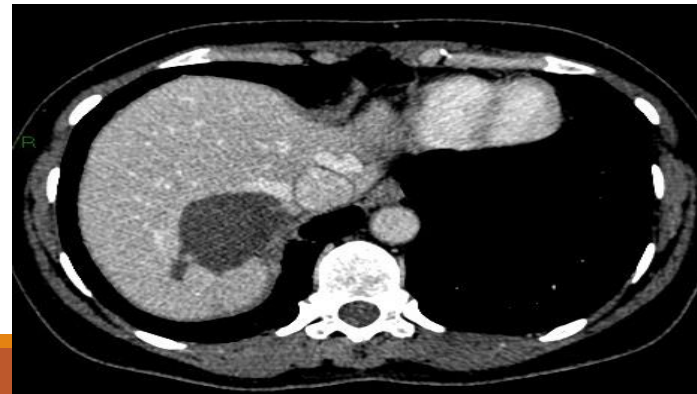
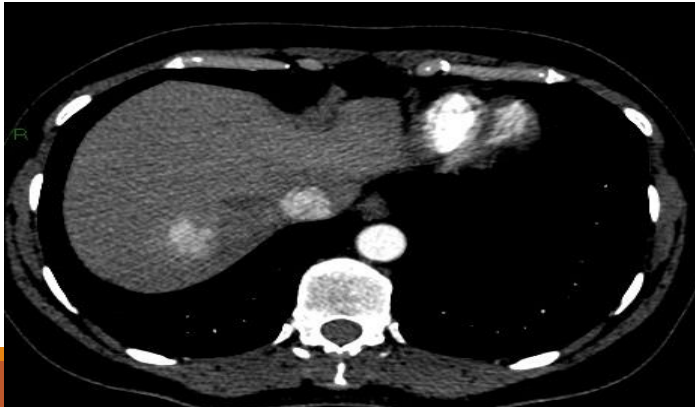
- Ultrasound: the lesion must be visible
- Fusion with CT or MRI is possible



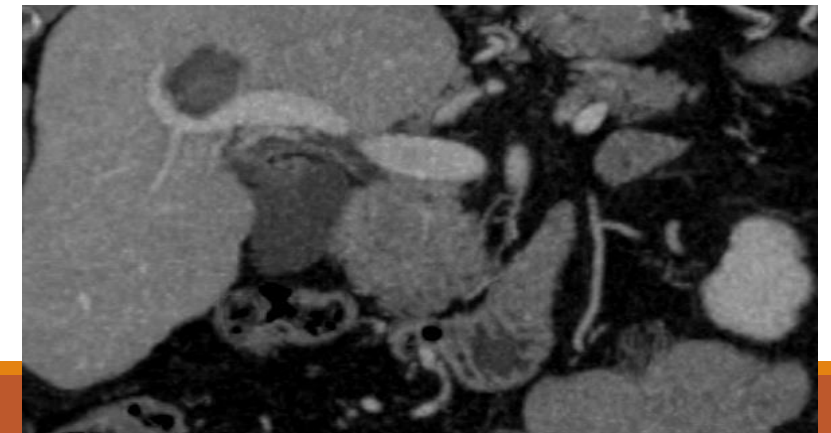
Multipolar



Simultaneous needle: synergies



IMAGING RESULT mdct



Complete ablation

If < 4 mm/vessels: incomplete

- 23% (26 mets with contact), 3% (201 mets without contact) $p < 0.02$



Microwave

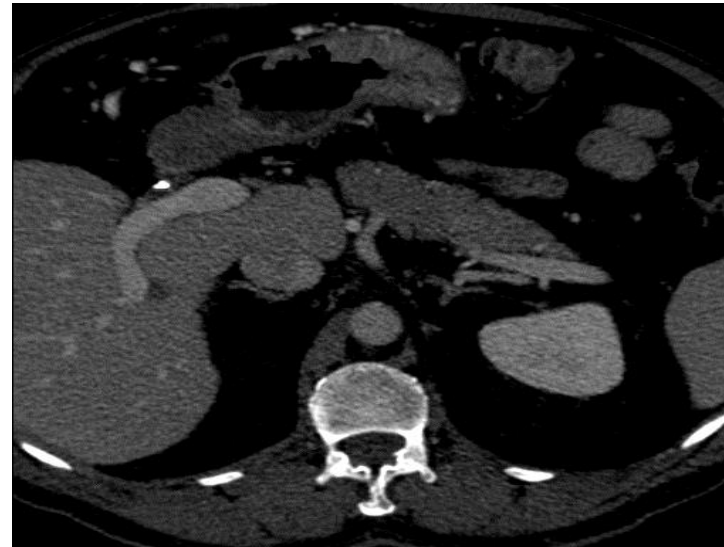
Higher energy: 915 MHz - 2,45 GH

High temperature

no “heat sink effect”



Pre-op CT



Post-op CT

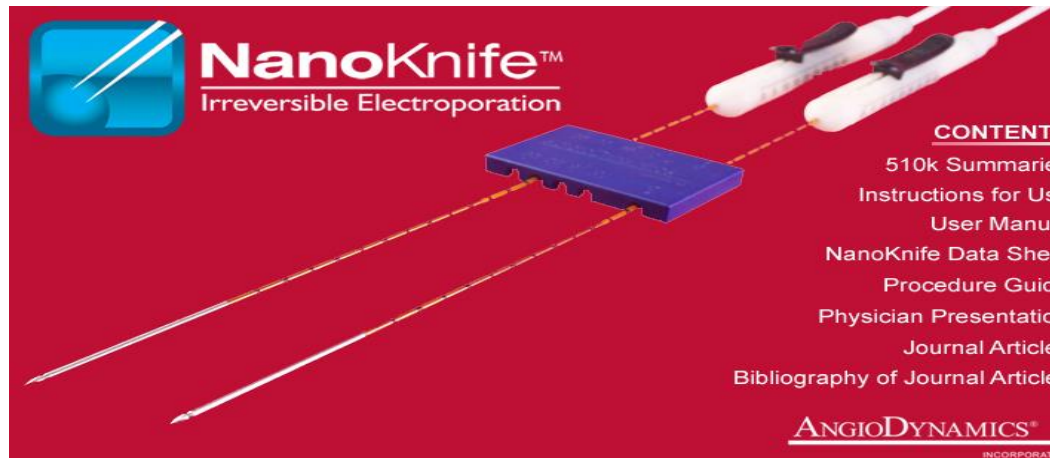
de Baere, IGR

Non-thermal Ablation: Irreversible Electroporation

Irreversible Electroporation

- Opening of tumorous cells menbrane: Tumor necrosing (apoptosis) without normal surrounding parenchyma necrosis

90 electrical pulse



CONCLUSION

Association of all treatments: surgery, TACE and radiofrequency

In the same patient

During the follow up

