Traitements focaux des métastases de cancers digestifs en radiologie interventionnelle

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Assistant spécialiste Radiologie Interventionnelle

CHU Rennes

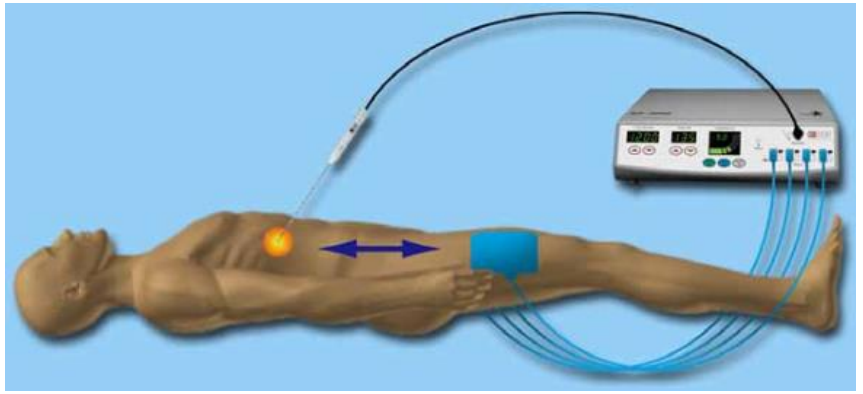
17/11/2023

Traitements focaux en RI

- **Traitements endovasculaires :**
  - Chimio-embolisation
  - SIRT
  - Chimiothérapie intra-artérielle

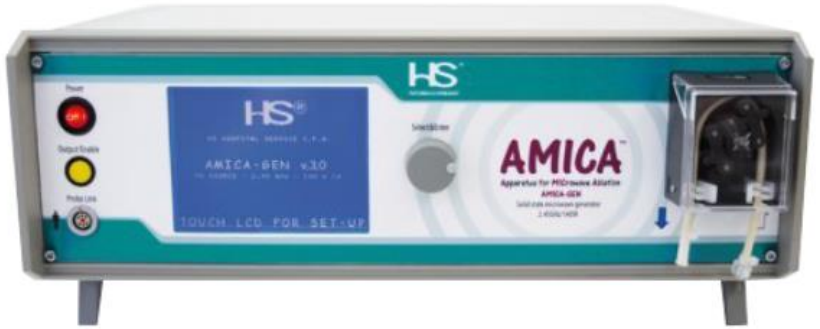
- **Traitements percutanés** :
  - Thermoablations :
    - Radiofréquence
    - Micro-onde
    - Cryoablation
  - Ablations non thermique : Electroporation irréversible (IRE)

Techniques d’ablation

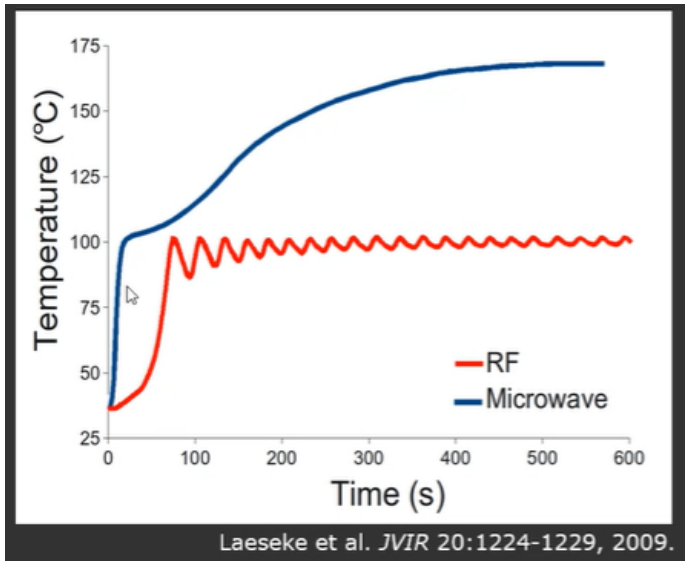


- **Radiofréquence** :
  - Courant électrique, fréquences 450MHz → agitation ionique → chaleur
  - Destruction cellulaire à partir de 60° → carbonisation dès 100°
  - CI : pacemaker, prothèses métalliques

Techniques d’ablation



- **Micro-onde** :
  - Ondes électromagnétiques, fréquences 2,45GHz
  - Pas de contre-indication liée aux DMI (pacemaker, prothèse…)
  - Pas d’influence de l’impédance



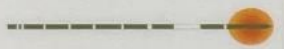
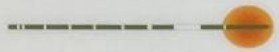
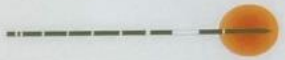
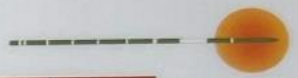
MODE CONTINU

ABLATECH

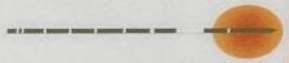
VOLUMES D'ABLATION MICRO-ONDES AMICA

MODE CONTINU

Données ex vivo (foie Bovin)

20 Watt / 3 min	20 Watt / 5 min	20 Watt / 10 min	20 Watt / 15 min
			
L: 24 mm, D: 16 mm	L: 27 mm, D: 20 mm	L: 31 mm, D: 27 mm	L: 38 mm, D: 33 mm

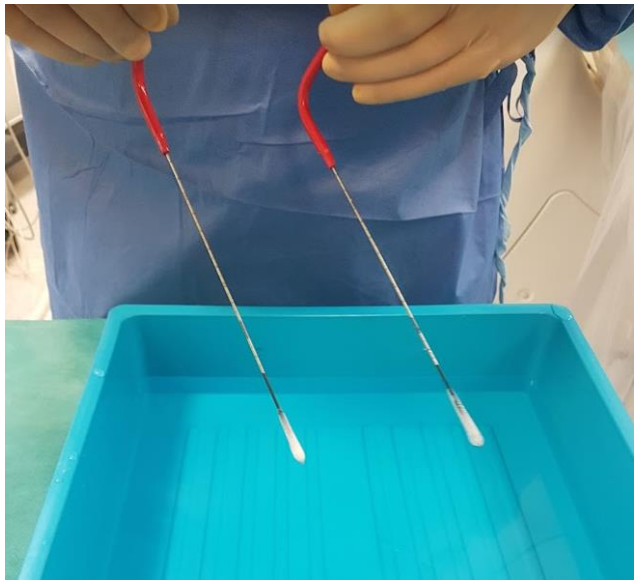
40 Watt / 3 min	40 Watt / 5 min	40 Watt / 10 min	40 Watt / 15 min
			
L: 29 mm, D: 20 mm	L: 36 mm, D: 27 mm	L: 49 mm, D: 36 mm	L: 50 mm, D: 42 mm

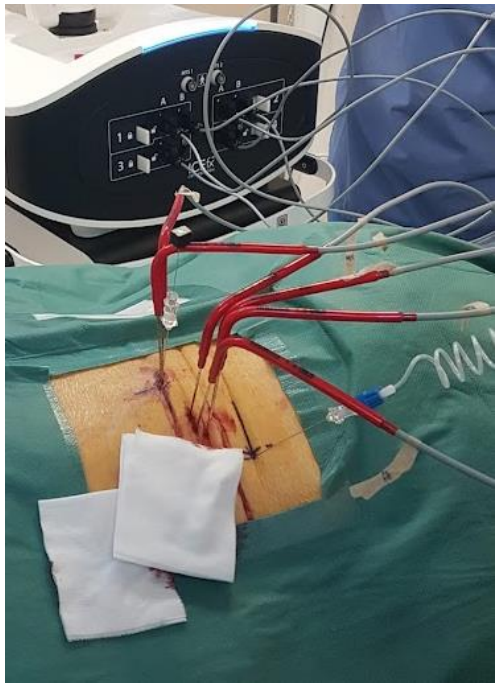
60 Watt / 3 min	60 Watt / 5 min	60 Watt / 10 min	60 Watt / 15 min
			
L: 37 mm, D: 25 mm	L: 48 mm, D: 34 mm	L: 54 mm, D: 40 mm	L: 61 mm, D: 48 mm

80 Watt / 3 min	80 Watt / 5 min	80 Watt / 10 min	80 Watt / 15 min
			
L: 46 mm, D: 32 mm	L: 52 mm, D: 37 mm	L: 66 mm, D: 46 mm	L: 73 mm, D: 55 mm

Techniques d’ablation

- Cryoablation :
  - Destruction par **congélation**
    - 2 cycles de congélation
    - 1 cycle de réchauffement
  - Dépressurisation de l’Argon
  - 1 aiguille = 1 cm de lésion

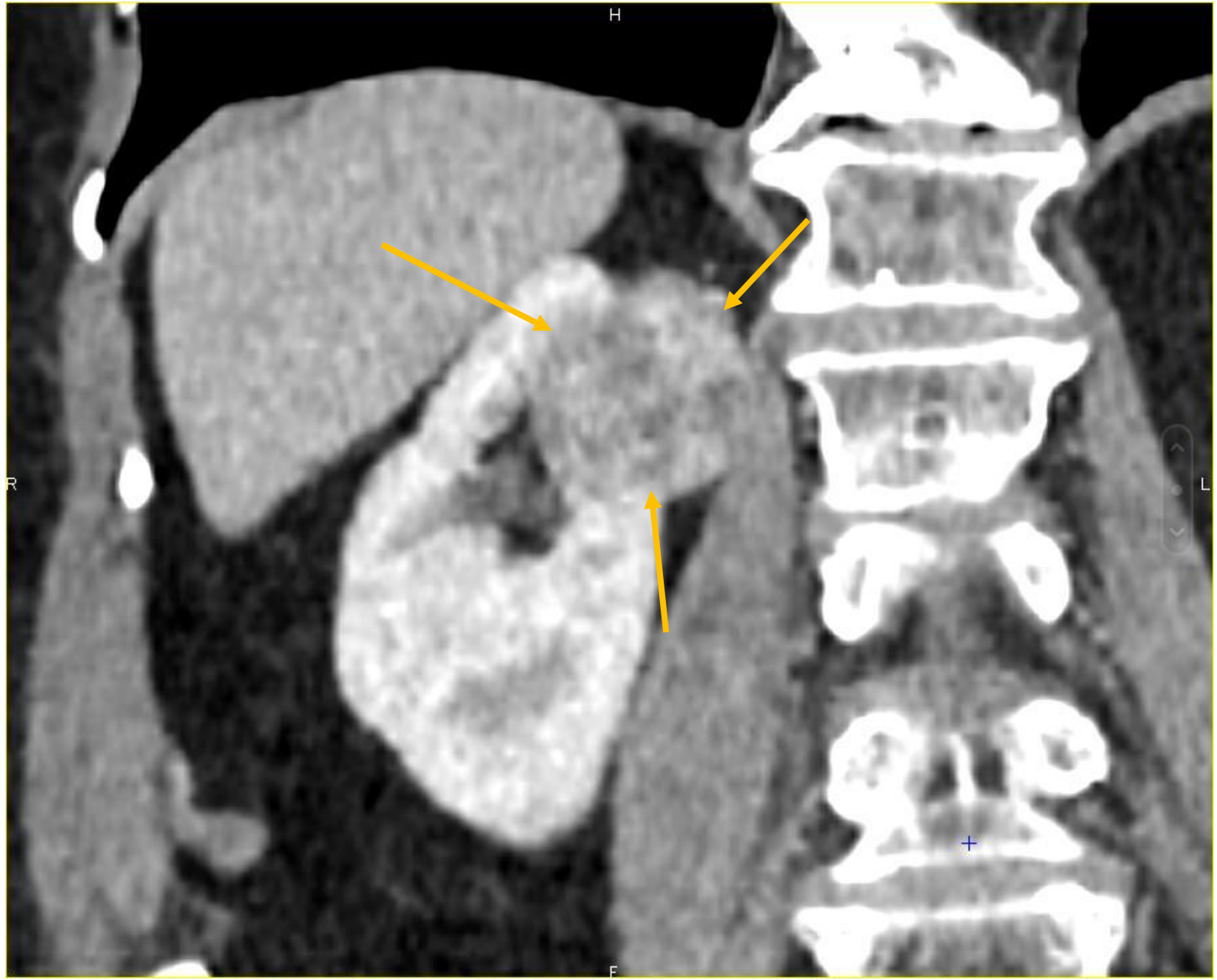




Techniques d'ablation

- **<u>Avantages</u> :**
  - **Volumes de destruction** → nombre d'aiguilles
  - **Contrôle visuel** direct du « glaçon » en scanner
  - **Risque moindre de plaie thermique** (préserve structures collagènes)
  - **Congélation indolore :**
    - possible sous ALR → le plus souvent AG (durée d'intervention, immobilité…)
    - moins de douleurs post-ablation (plèvre)

- **<u>Inconvénients</u> :**
  - **Logistique** : bouteilles gaz
  - **Complexité** et longueur intervention (nombre cryosondes)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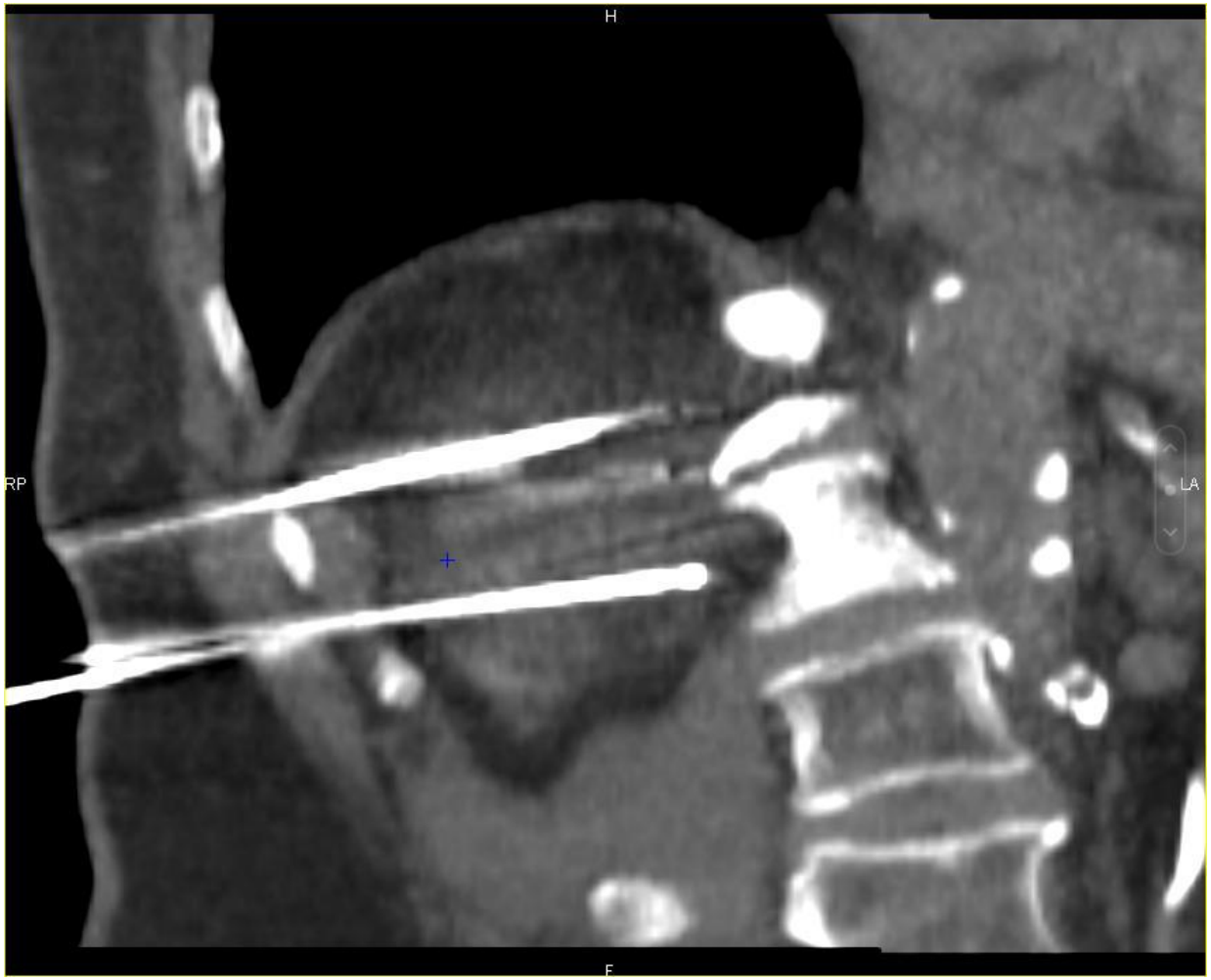
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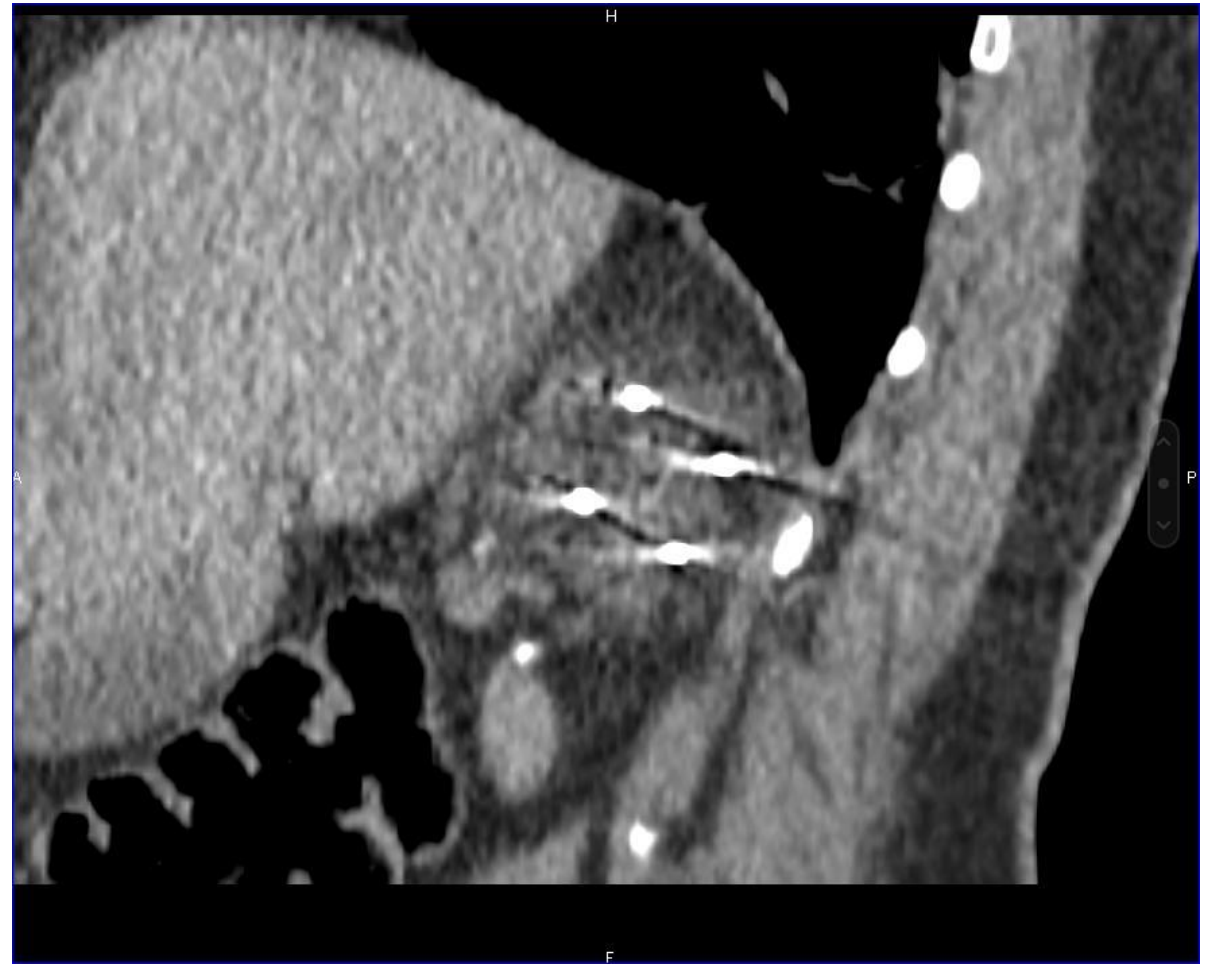
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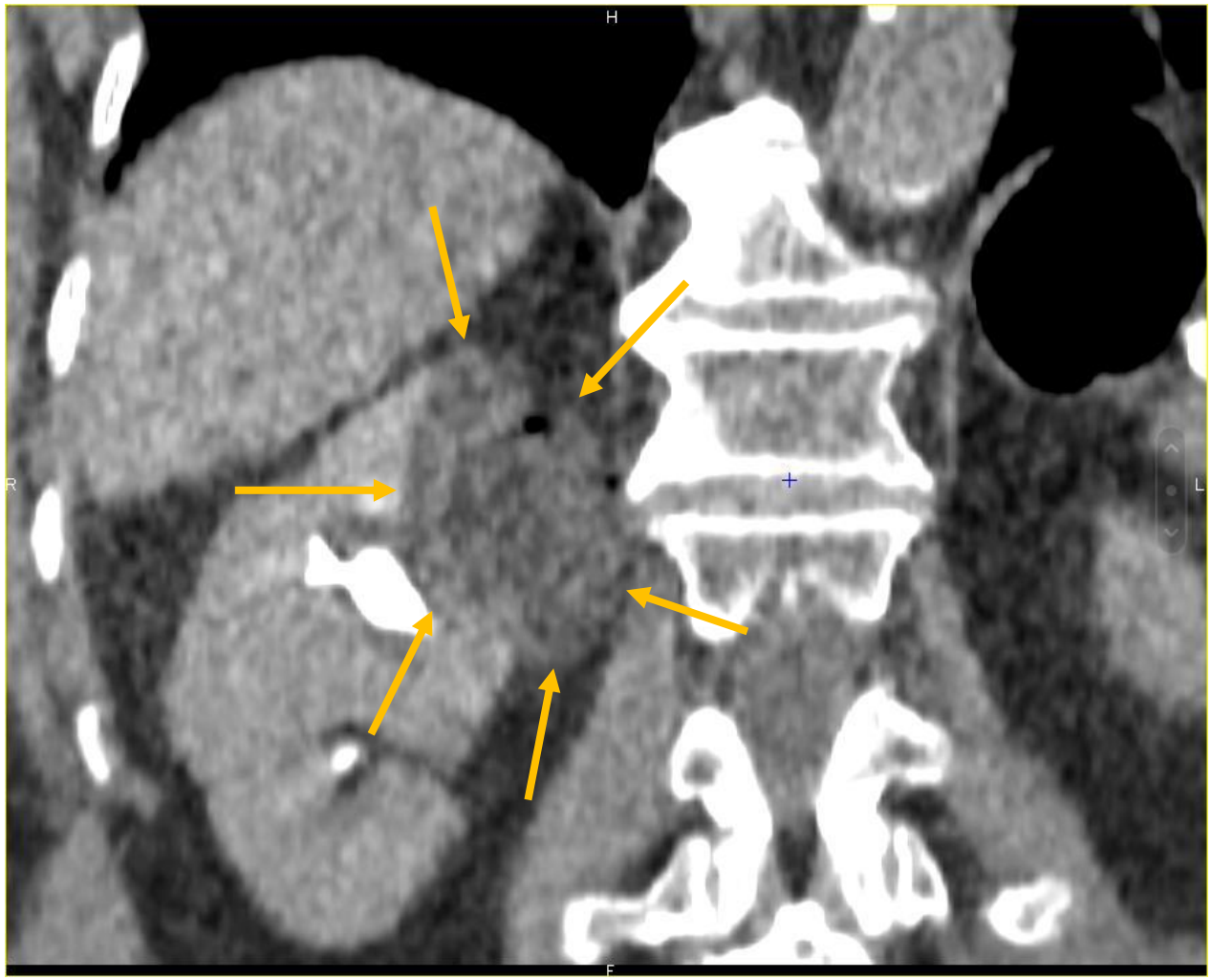
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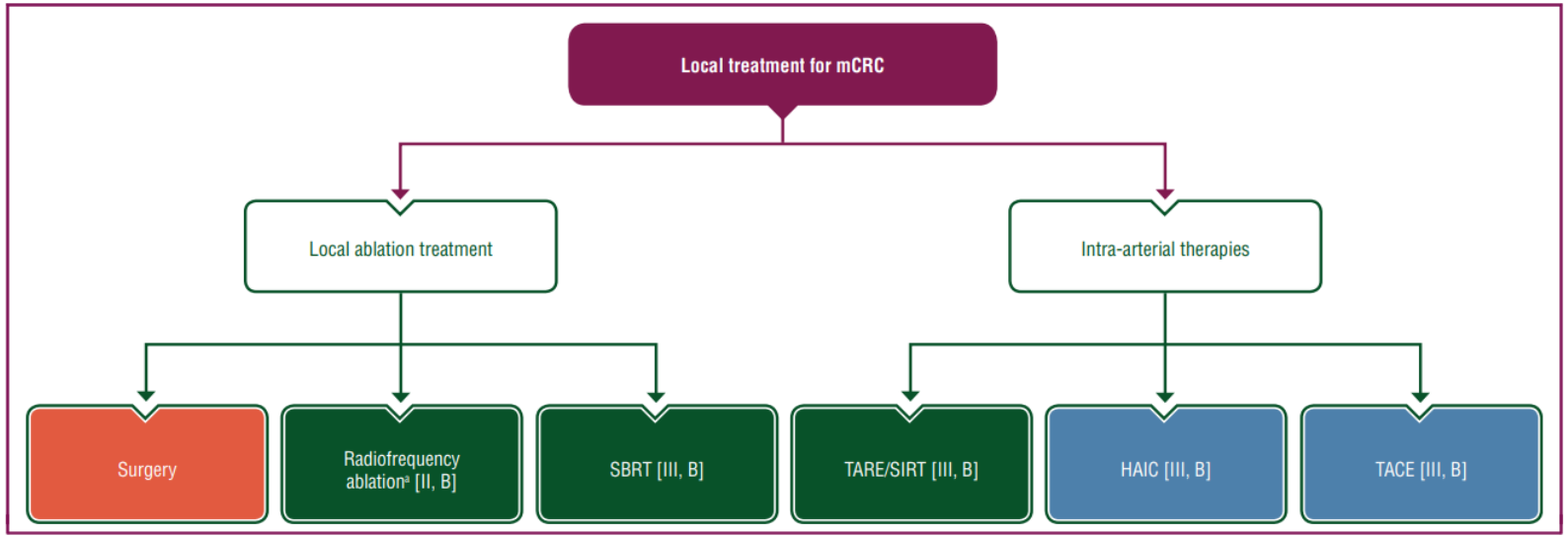
Métastases hépatiques

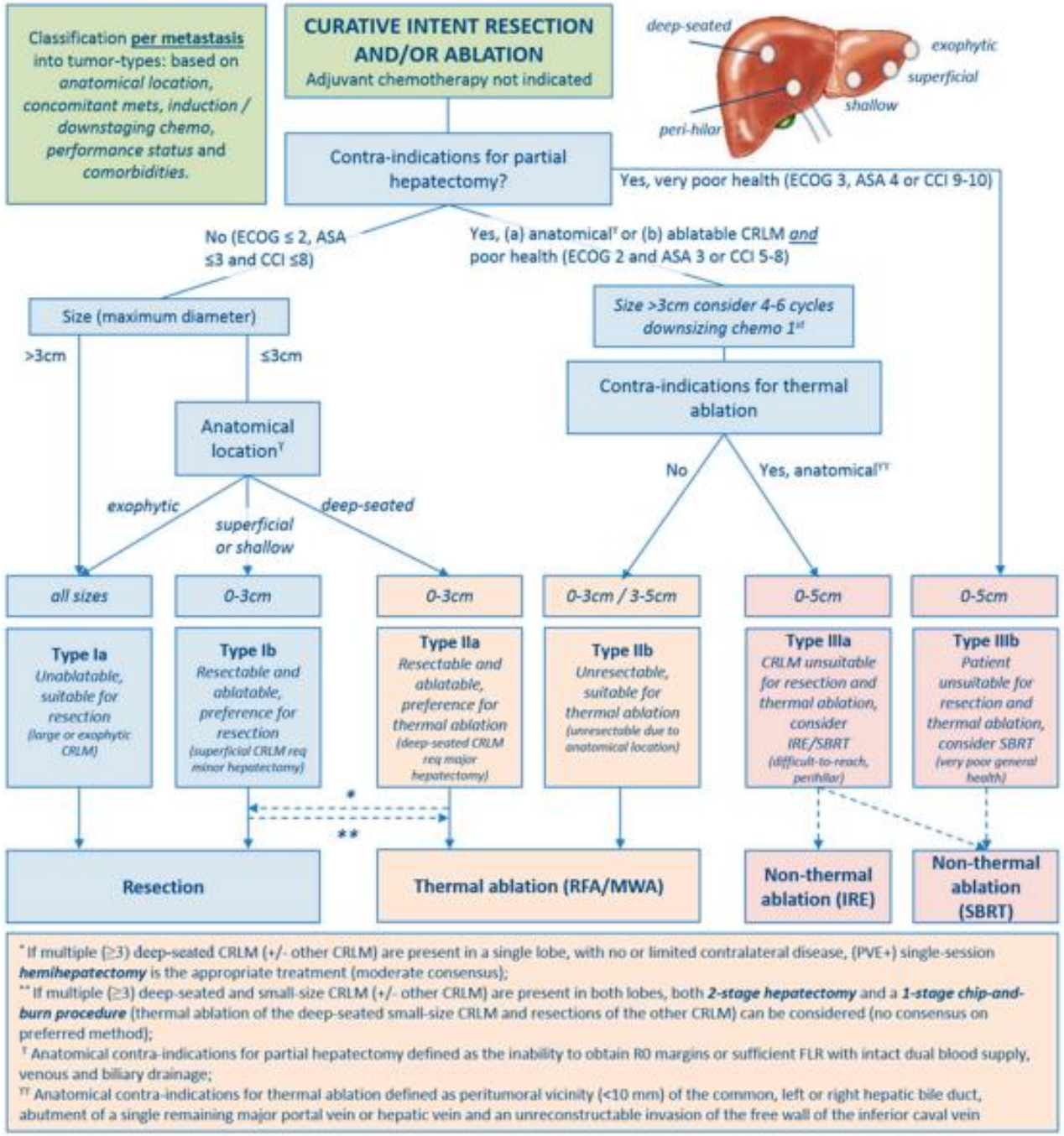
- CCR : alternative à la chirurgie
  - < 3 cm
  - Oligométastatique (< 5 lésions)

Metastatic colorectal cancer: ESMO Clinical Practice Guideline for diagnosis, treatment and follow-up☆

A. Cervantes[1,2], R. Adam[3], S. Roselló[1,2], D. Arnold[4], N. Normanno[5], J. Taïeb[6,7], J. Seligmann[8], T. De Baere[9,10,11], P. Osterlund[12,13], T. Yoshino[14] & E. Martinelli[15], on behalf of the ESMO Guidelines Committee*

- Autres métastases : au cas par cas





cancers

MDPI

Article

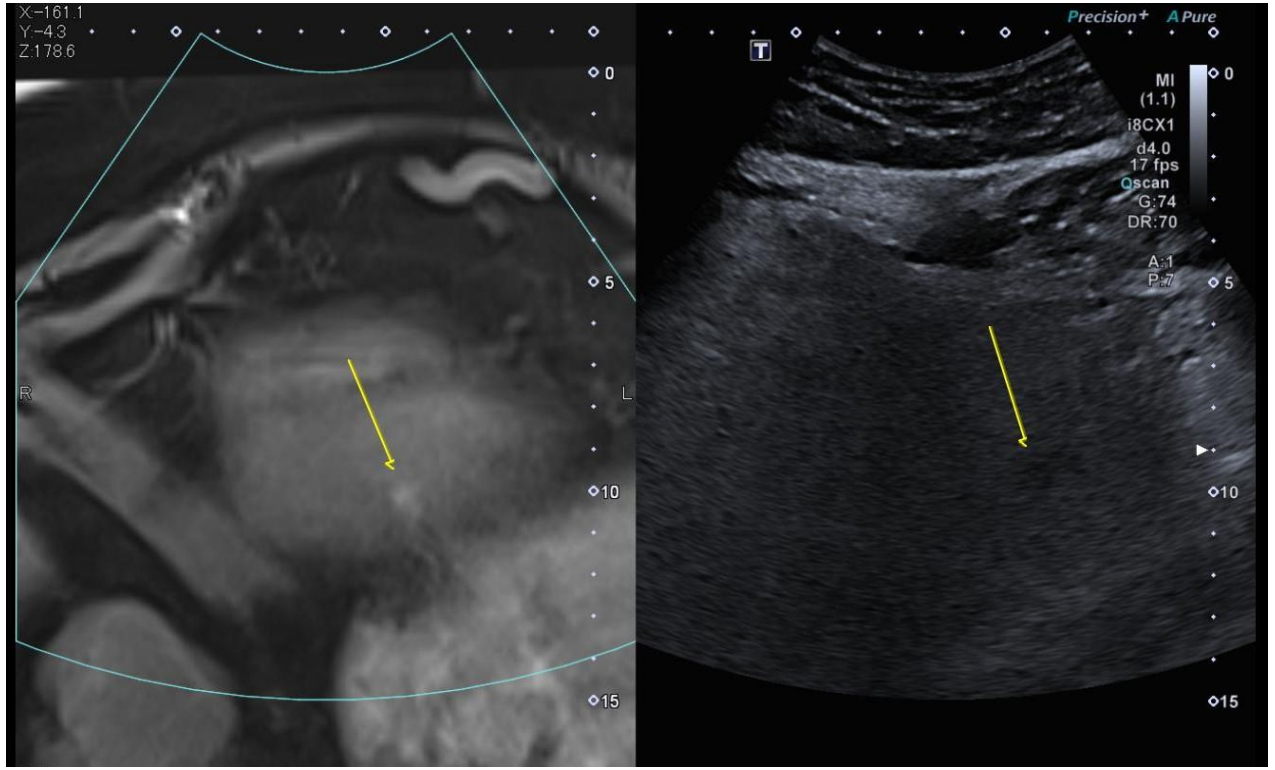
Resectability and Ablatability Criteria for the Treatment of Liver Only Colorectal Metastases: Multidisciplinary Consensus Document from the COLLISION Trial Group

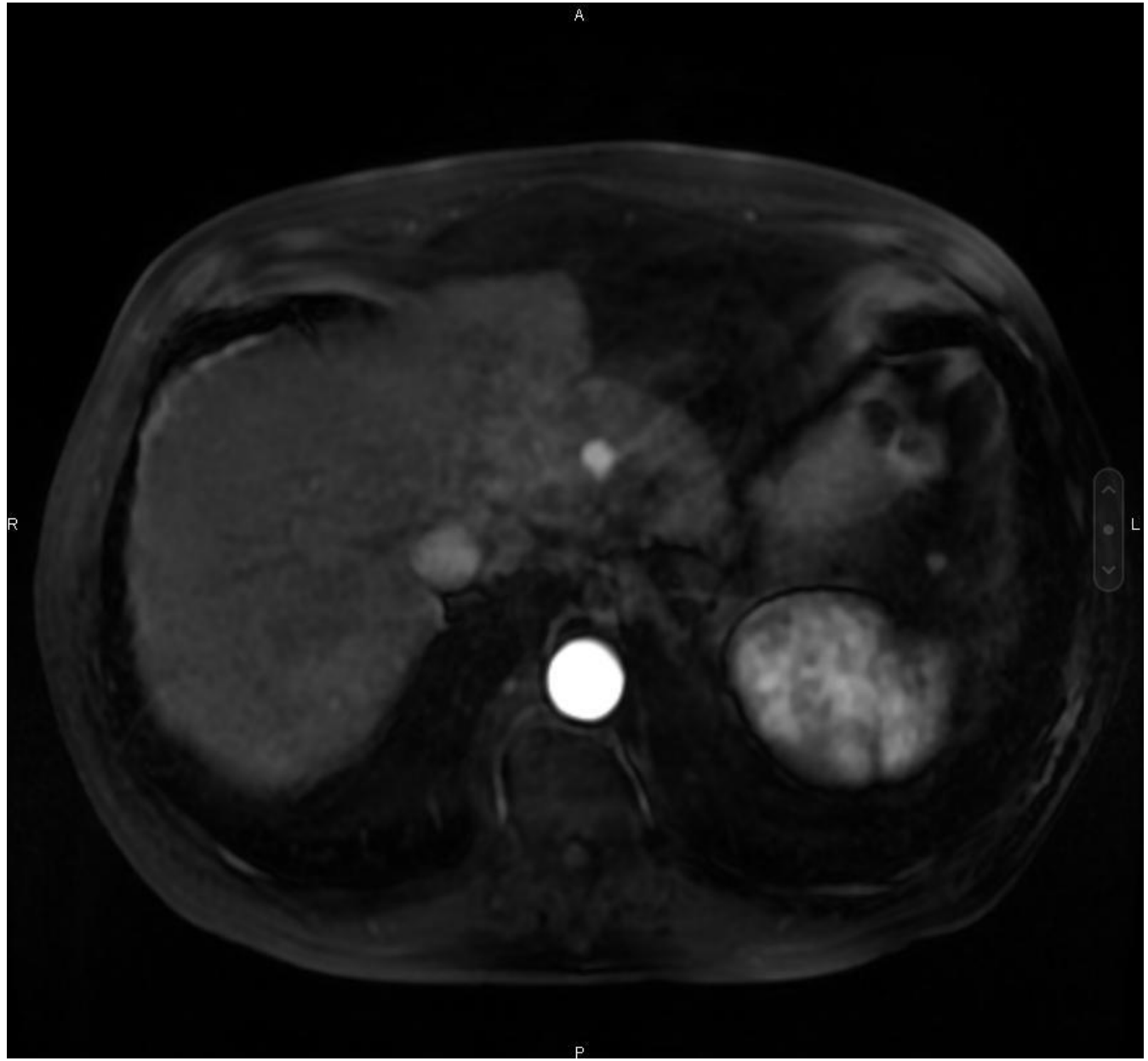
Sanne Nieuwenhuizen [1], Robbert S. Puijk [1], Bente van den Bemd [1], Luca Aldrighetti [2], Mark Arntz [3], Peter B. van den Boezem [4], Anna M. E. Bruynzeel [5], Mark C. Burgmans [6], Francesco de Cobelli [7], Marielle M. E. Coolsen [8], Cornelis H. C. Dejong [8], Sarah Derks [9], Arjen Diederik [10], Peter van Duijvendijk [11], Hasan H. Eker [12], Anton F. Engelsman [13], Joris I. Erdmann [13], Jurgen J. Fütterer [3], Bart Geboers [1], Gerie Groot [10], Cornelis J. A. Haasbeek [5], Jan-Jaap Janssen [3], Koert P. de Jong [14], G. Matthijs Kater [15], Geert Kazemier [13], Johan W. H. Kruimer [16], Wouter K. G. Leclercq [17], Christiaan van der Leij [18], Eric R. Manusama [12], Mark A. J. Meier [19], Bram B. van der Meijs [1], Marleen C. A. M. Melenhorst [1], Karin Nielsen [13], Maarten W. Nijkamp [14], Fons H. Potters [19], Warner Prevoo [20], Floris J. Rietema [21], Alette H. Ruarus [1], Simeon J. S. Ruiter [14], Evelien A. C. Schouten [1], Gian Piero Serafino [22], Colin Sietses [23], Rutger-Jan Swijnenburg [13], Florentine E. F. Timmer [1], Kathelijn S. Versteeg [24], Ted Vink [25], Jan J. J. de Vries [1], Johannes H. W. de Wilt [4], Barbara M. Zonderhuis [13], Hester J. Scheffer [1], Petrousjka M. P. van den Tol [13] and Martijn R. Meijerink [1,*]

Métastases hépatiques

- **Guidages** :
  - Échographique +/- fusion
  - Scanner +/- injecté
  - Portoscanner / CBCT

- Multimodalité +++

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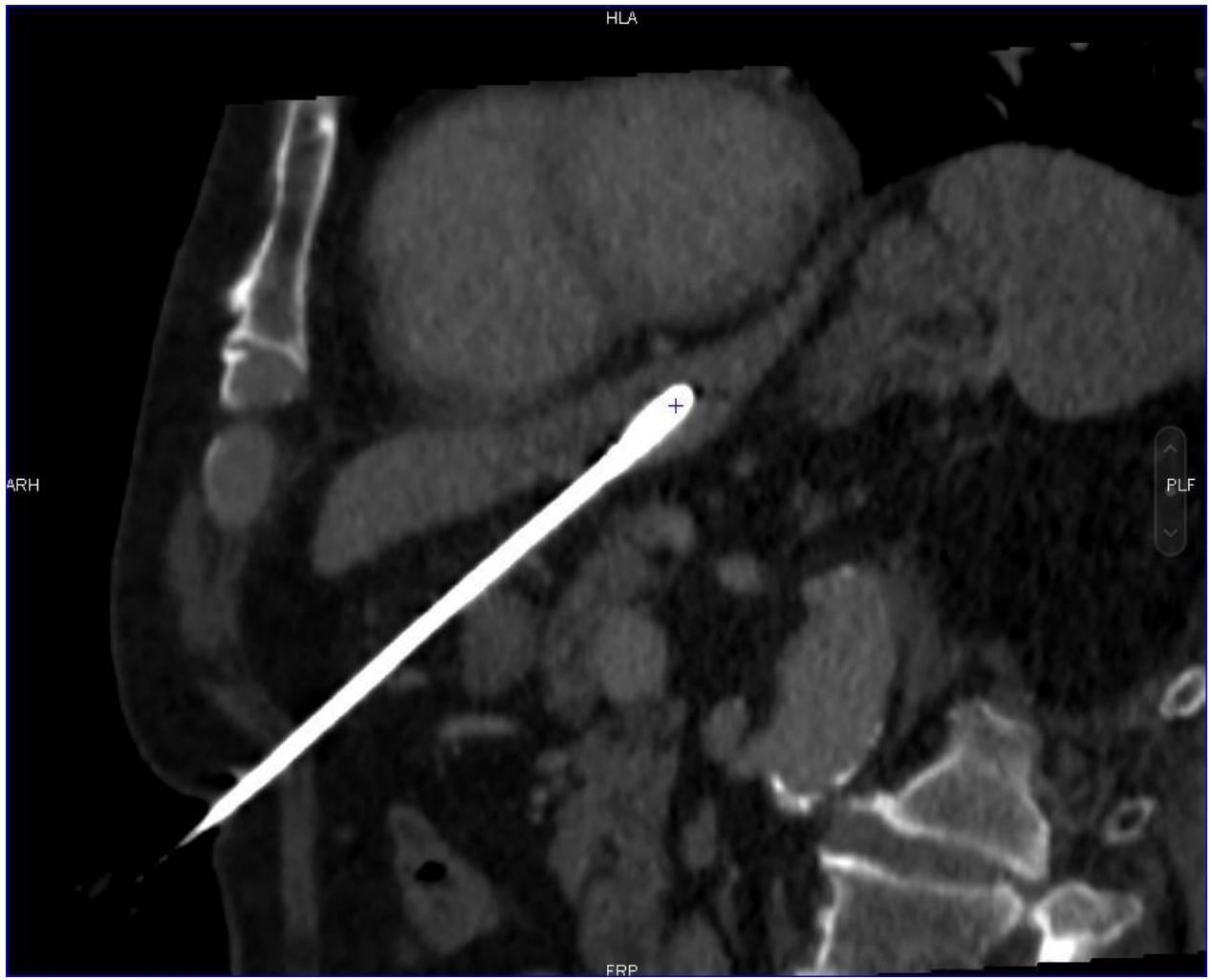
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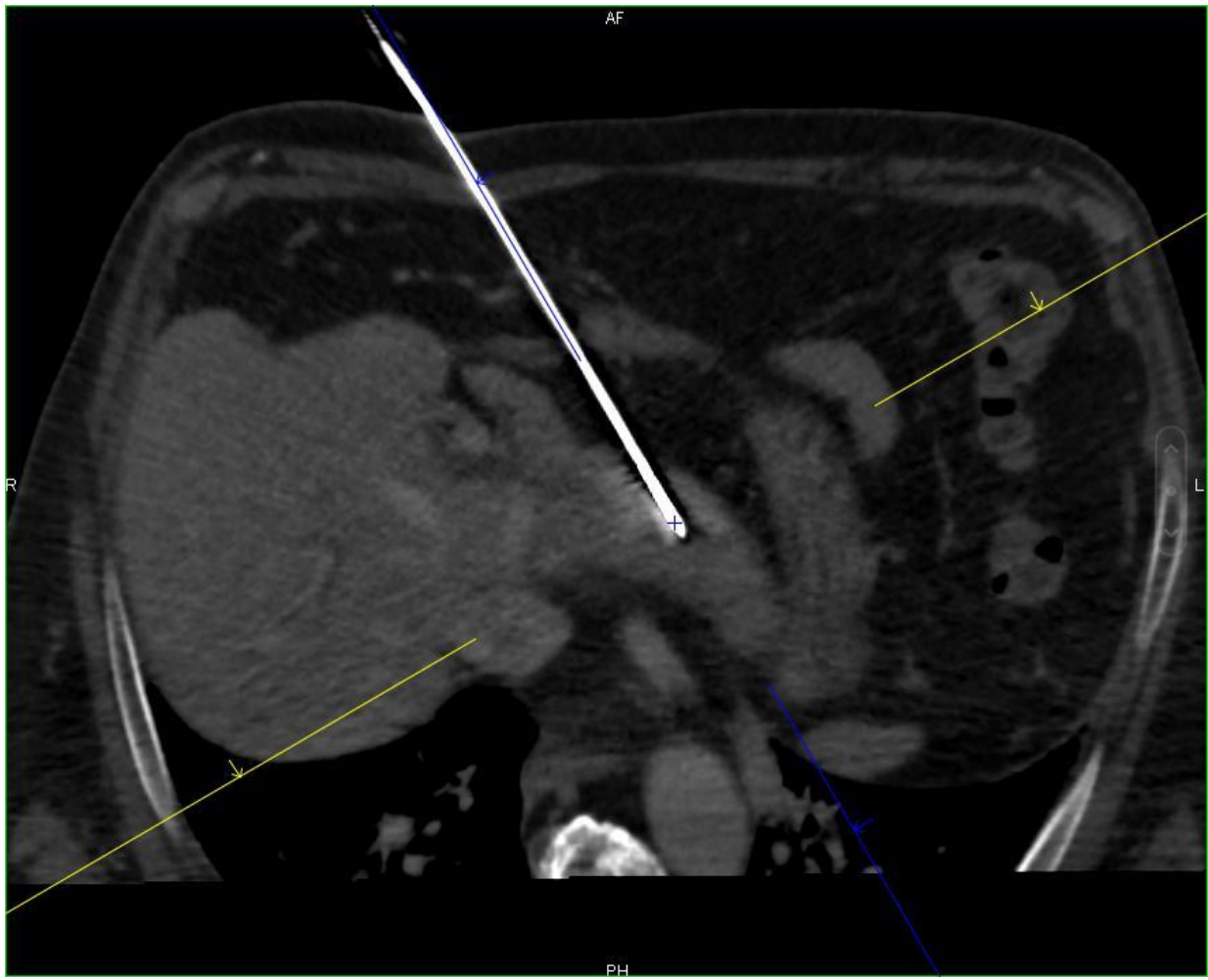
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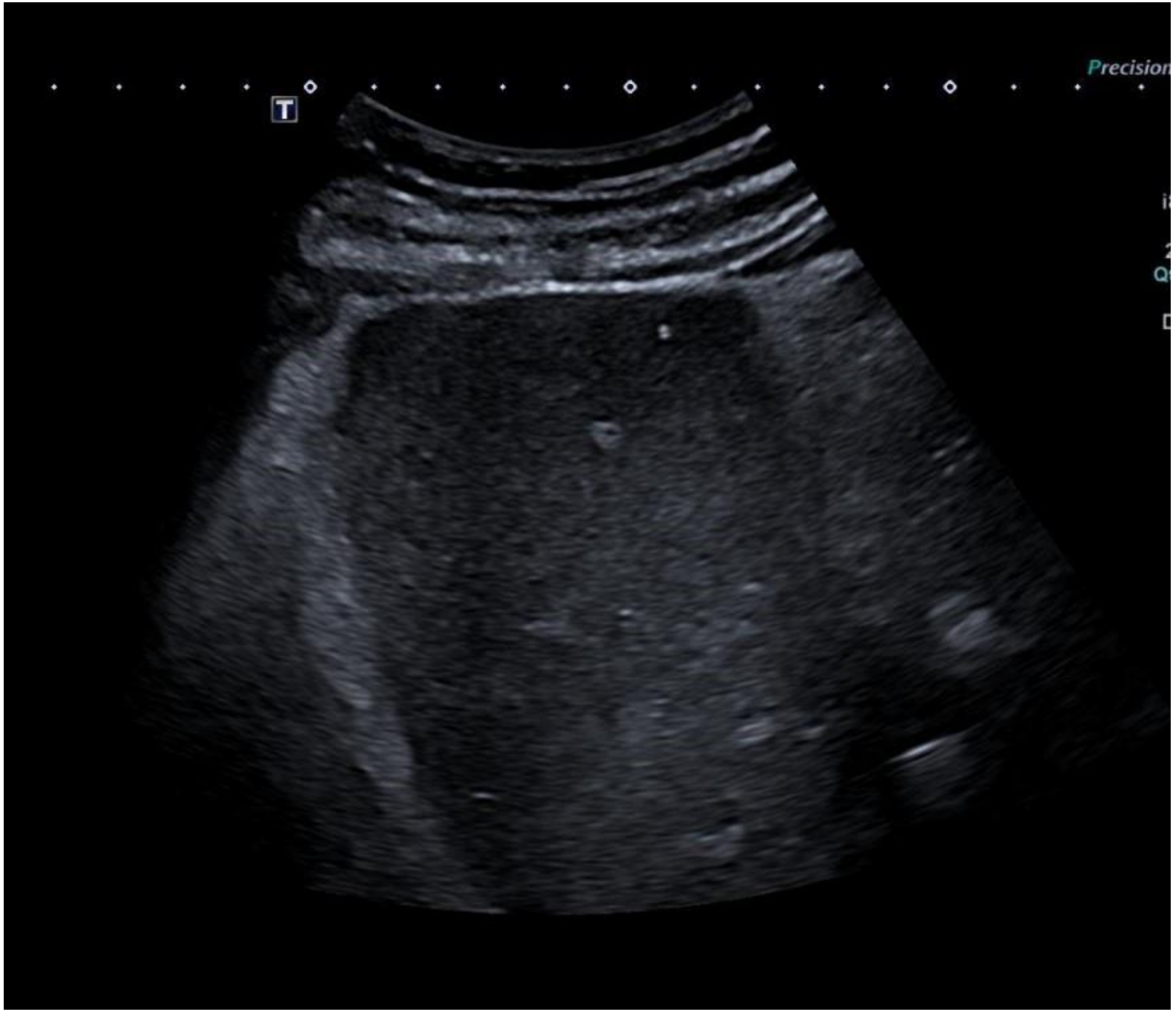
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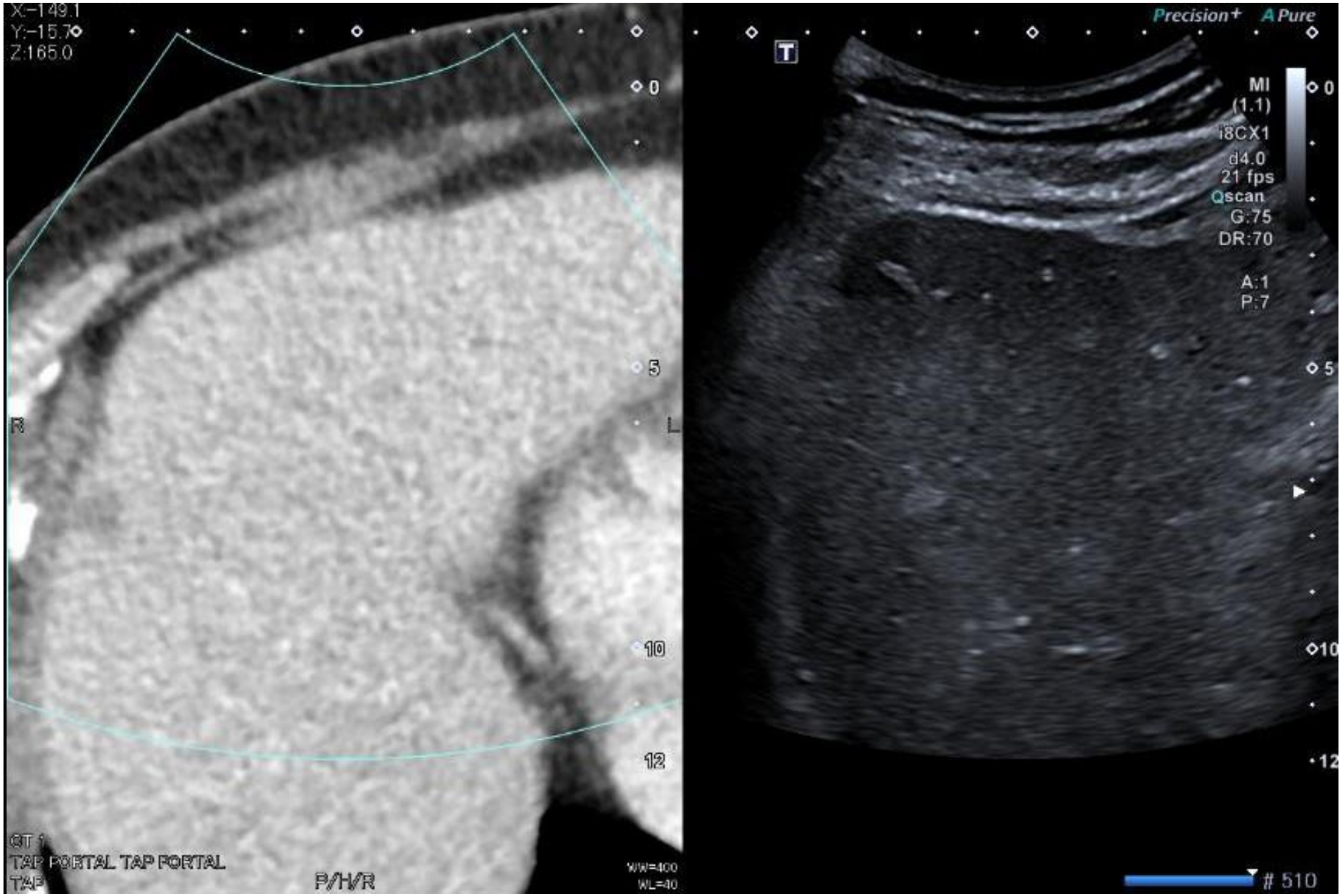
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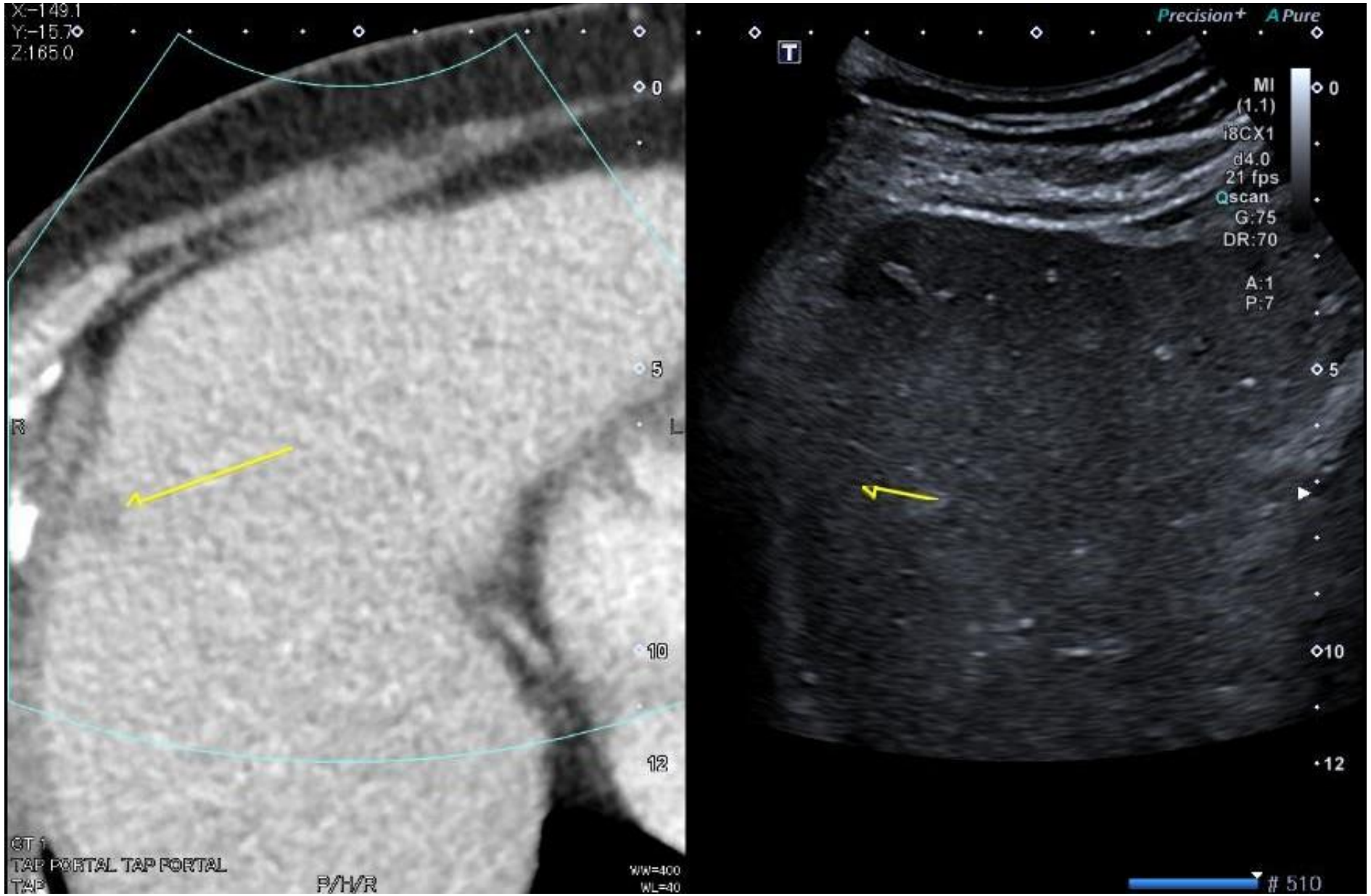
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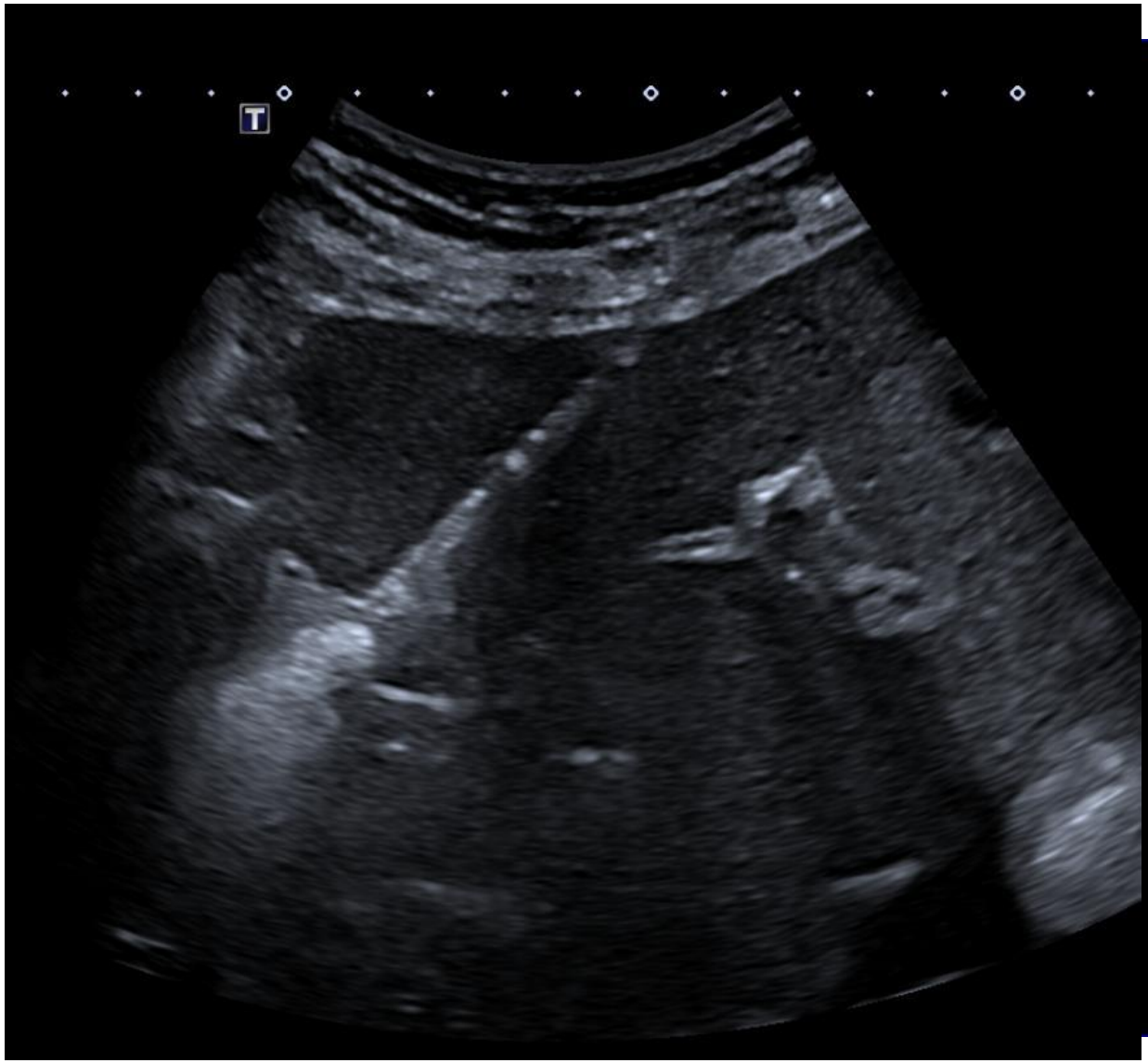
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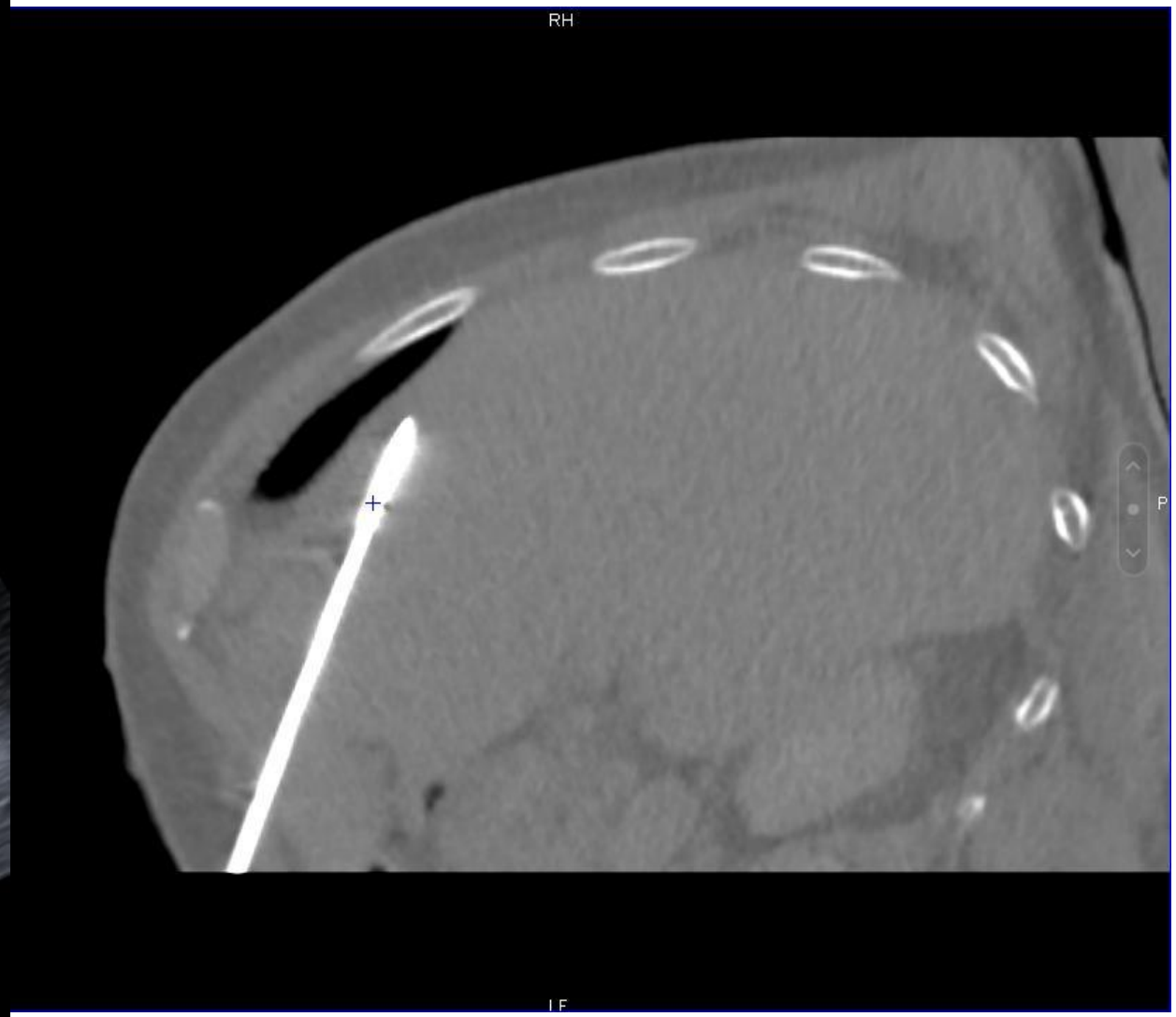
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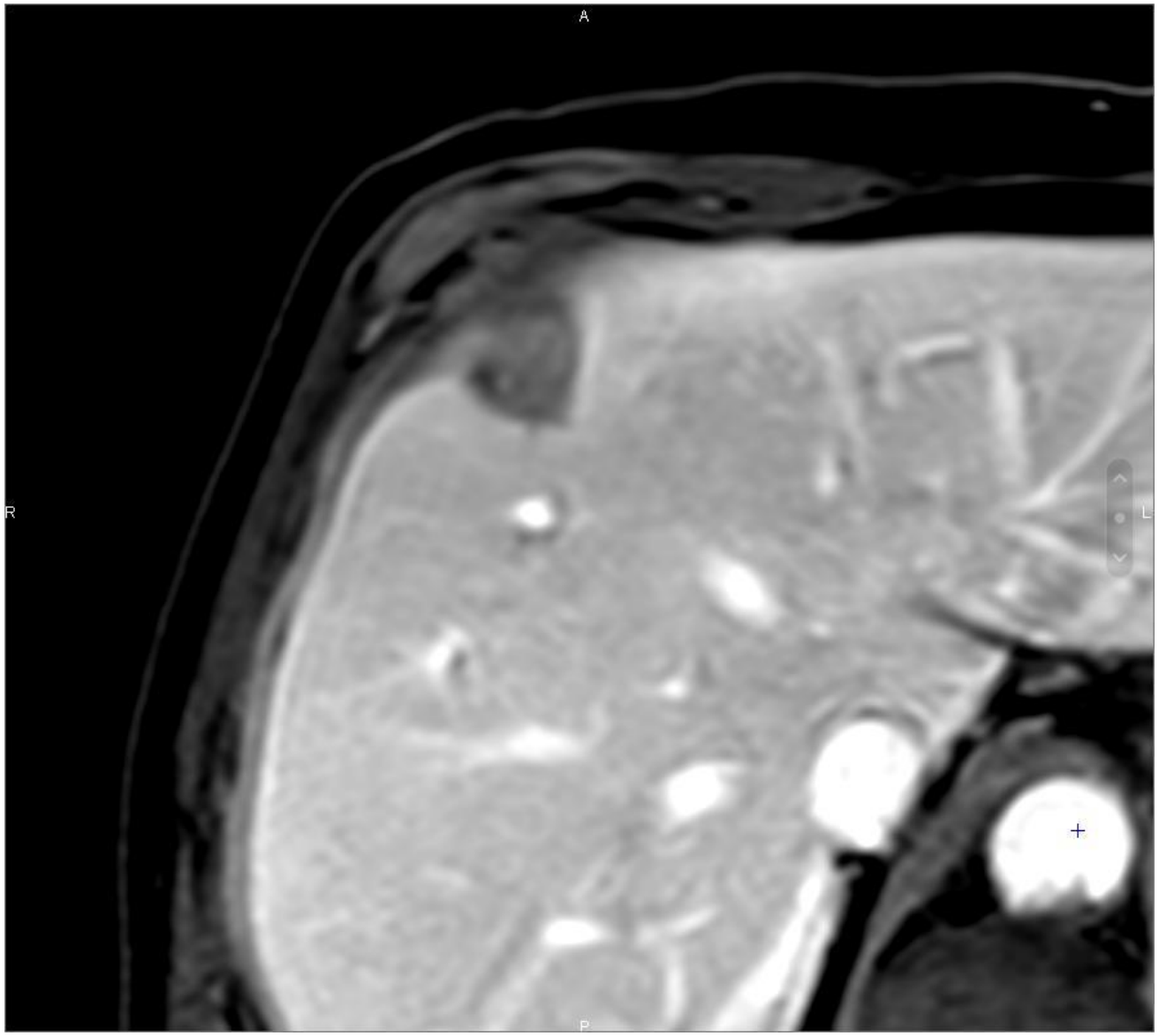
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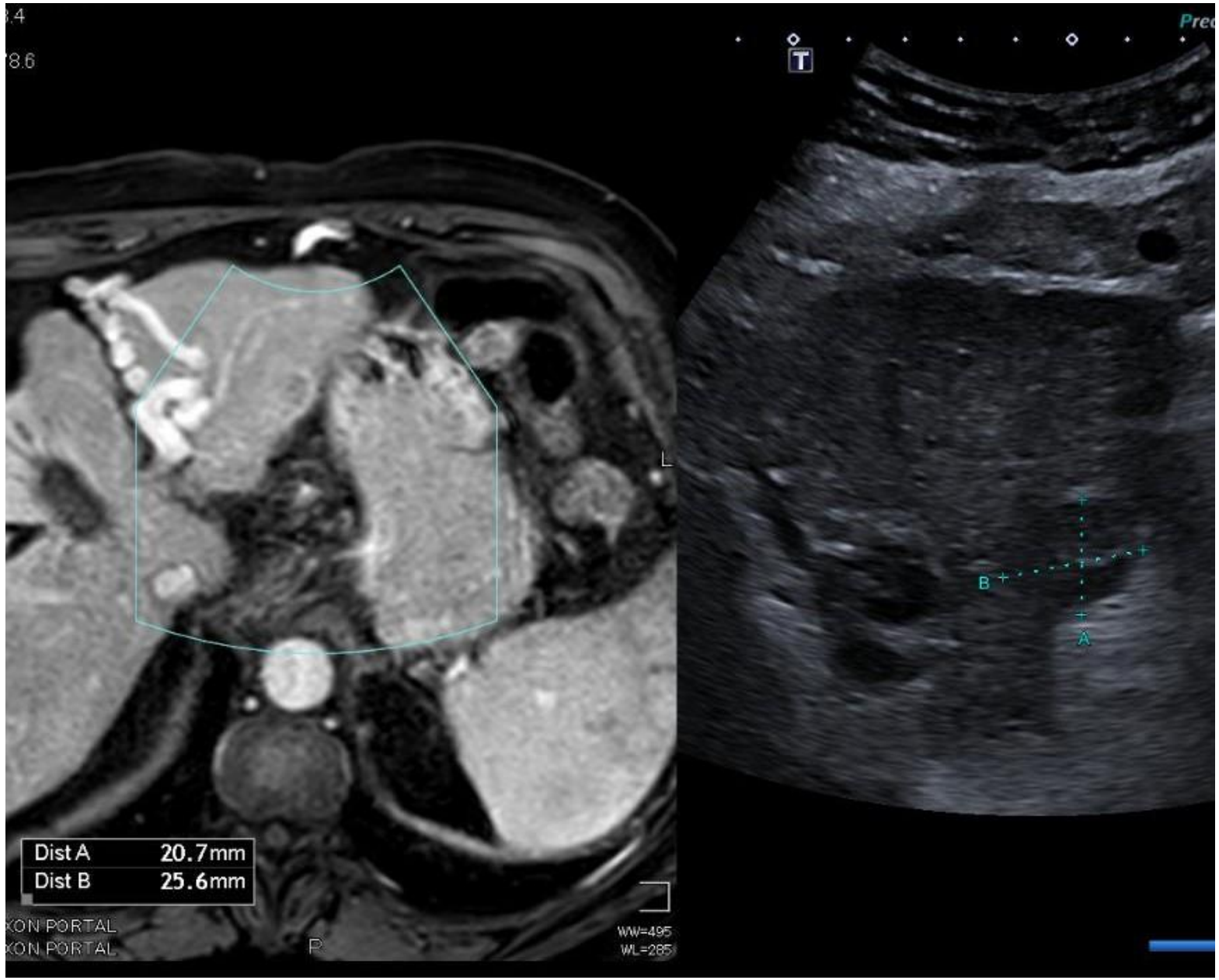
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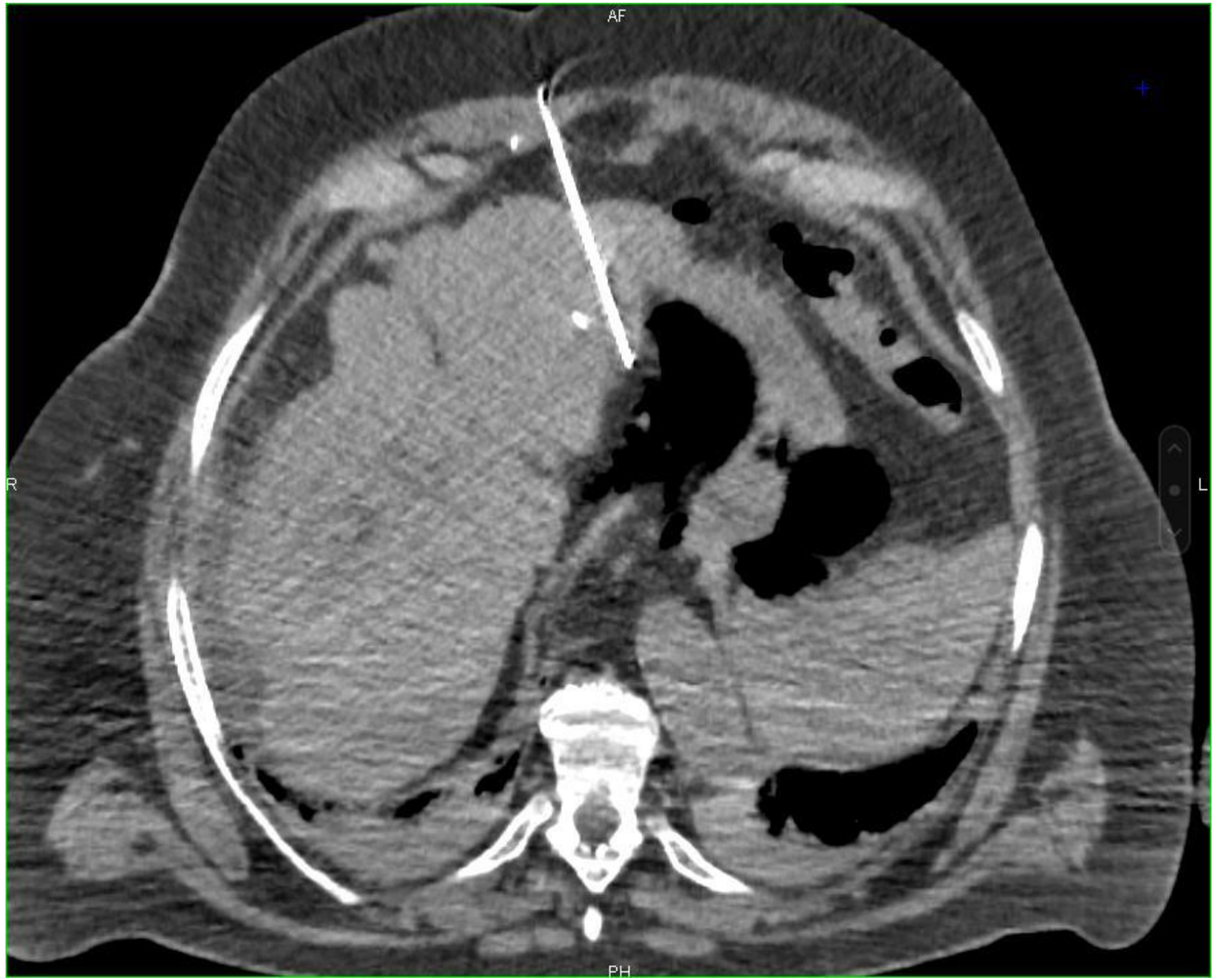
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Métastases pulmonaires

- **Indications** :
  - alternative si non opérables
  - Patients oligo-métastatiques
  - Lésions petites tailles (2-3cm)

- Radiofréquence ou cryoablation

Metastatic colorectal cancer: ESMO Clinical Practice Guideline for diagnosis, treatment and follow-up☆

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Radiofrequency ablation is a valid treatment option for lung metastases: experience in 566 patients with 1037 metastases

T. de Baère[1*], A. Aupérin[2], F. Deschamps[1], P. Chevallier[3], Y. Gaubert[4], V. Boige[5], M. Fonck[6], B. Escudier[5] & J. Palussiére[7]

Departments of [1]Image Guided Therapy; [2]Biostatistics, Gustave Roussy Cancer Campus, Villejuif; [3]Department of Imaging, Hopital Archet 2, Nice; [4]Department of Imaging, Hopital de la Timone, Marseille; [5]Department of Medical Oncology, Gustave Roussy Cancer Campus, Villejuif; Departments of [6]Medical Oncology; [7]Imaging, Institut Bergonie, Bordeaux, France

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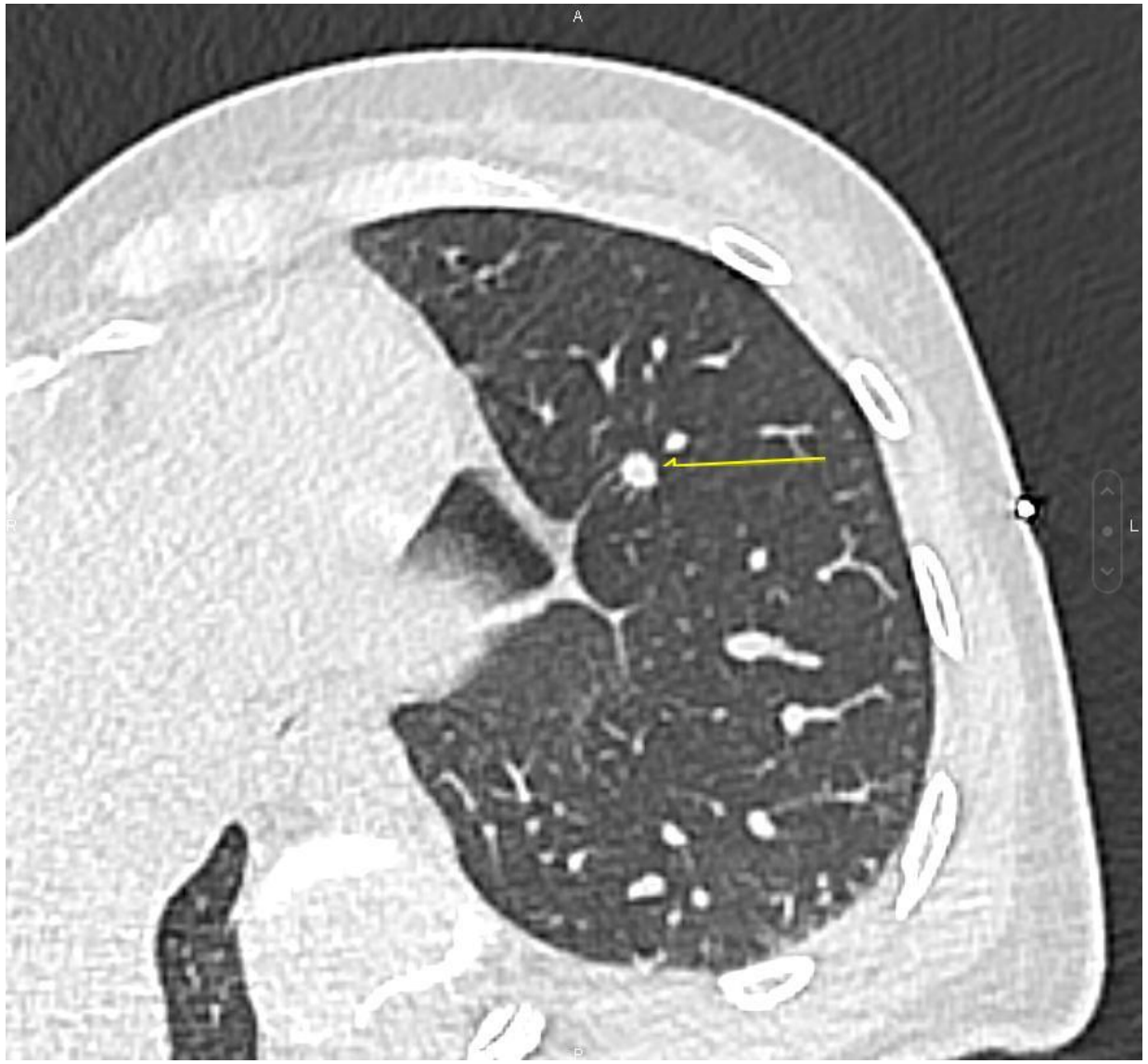
Métastases pulmonaires

- **Avantages** :
  - Une seule séance
  - Biopsie dans le même temps
  - Répétition possible du traitement (poumon radique)
  - Pas d'impact sur la fonction respiratoire

- **Inconvénients** :
  - Anesthésie générale
  - Complications : pneumothorax, hémoptysie, embolie gazeuse
  - Risque traitement incomplet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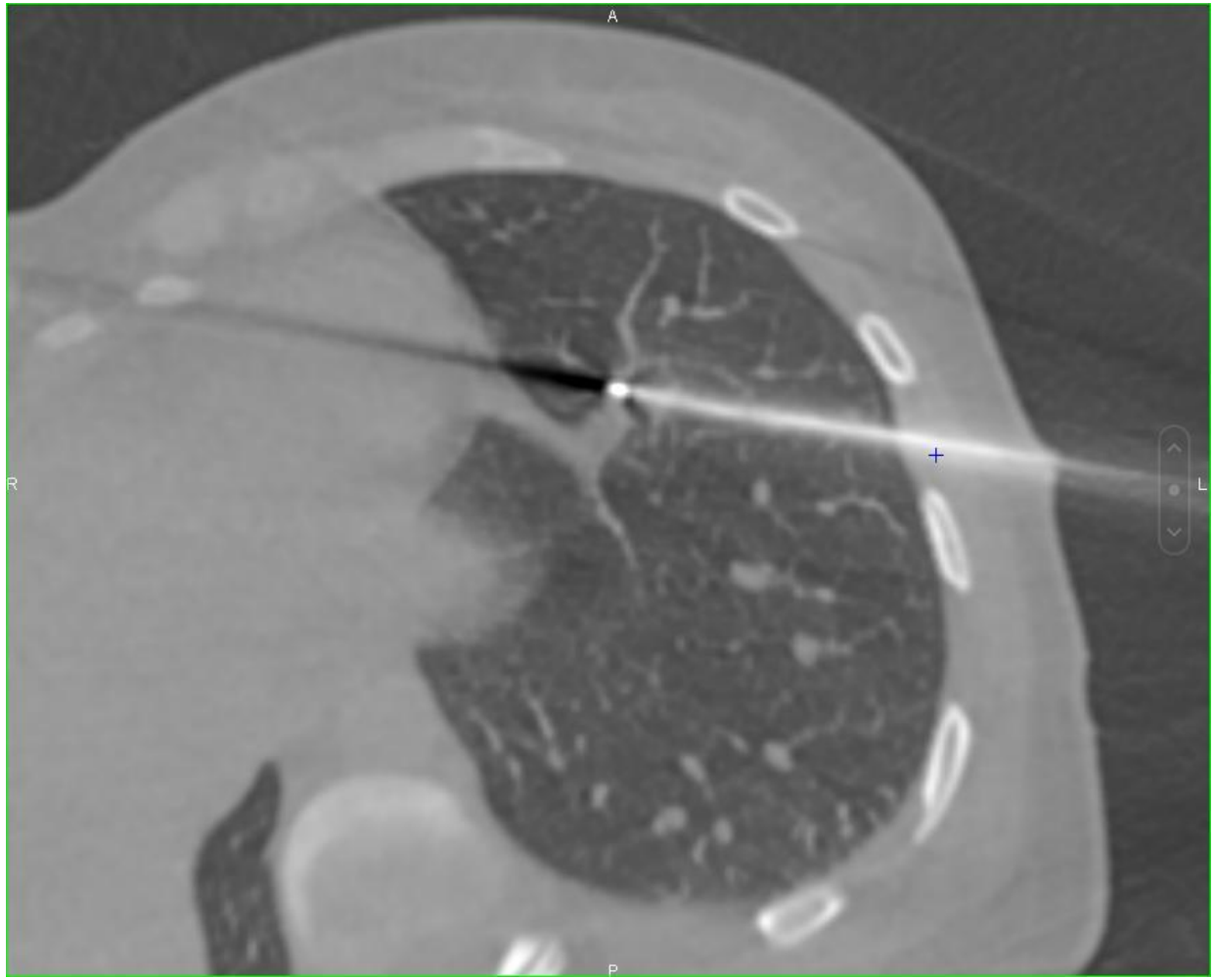
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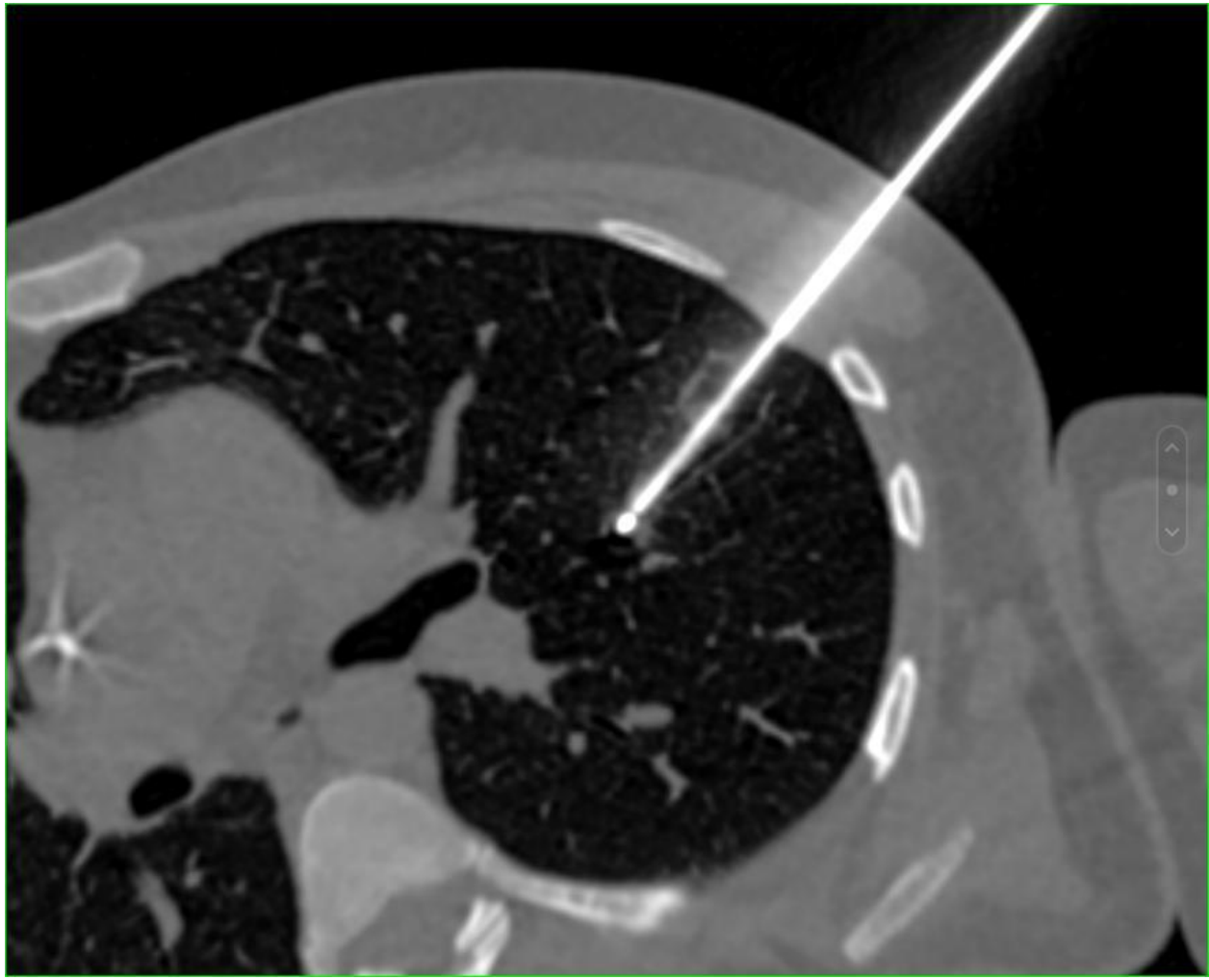

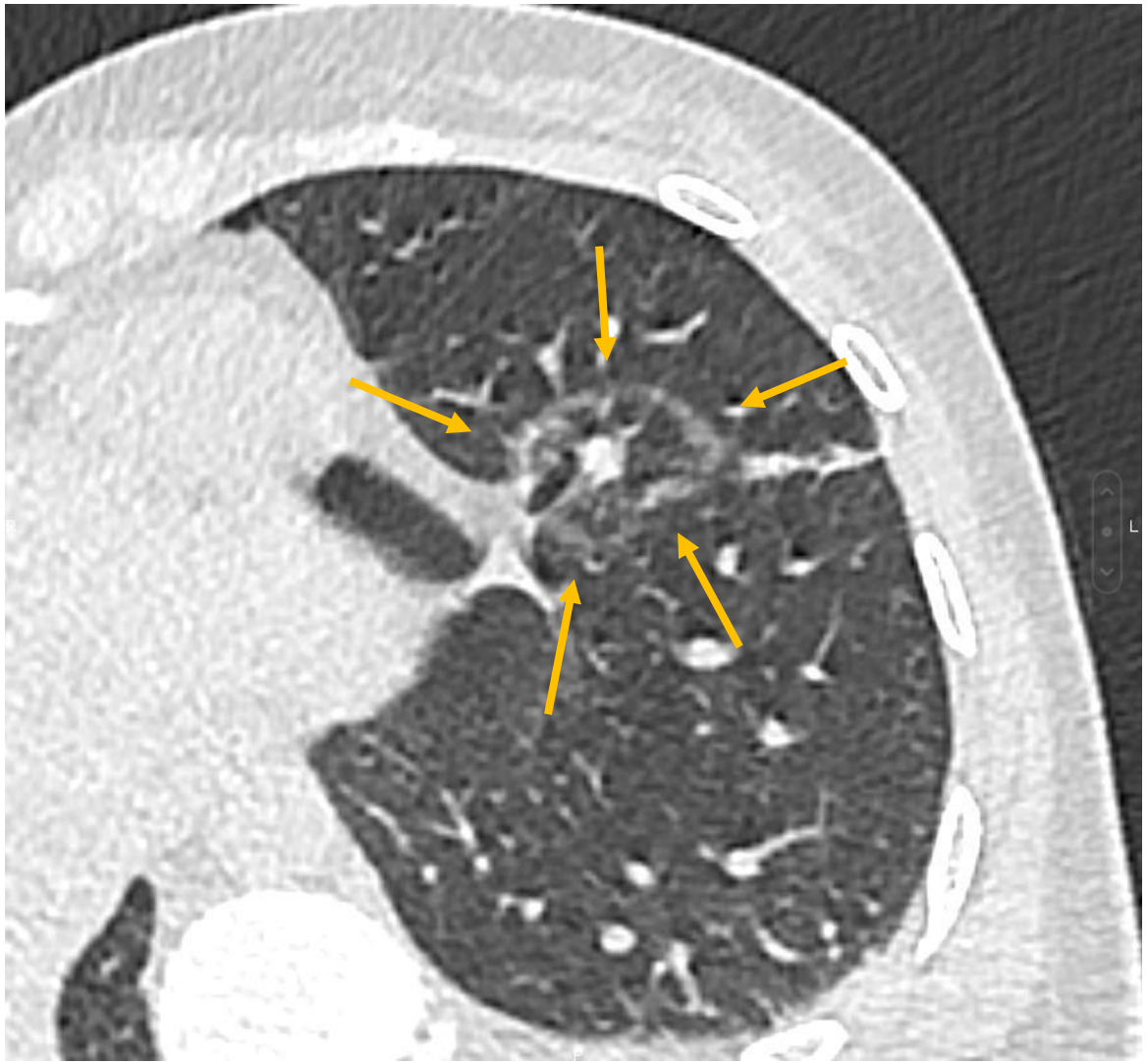


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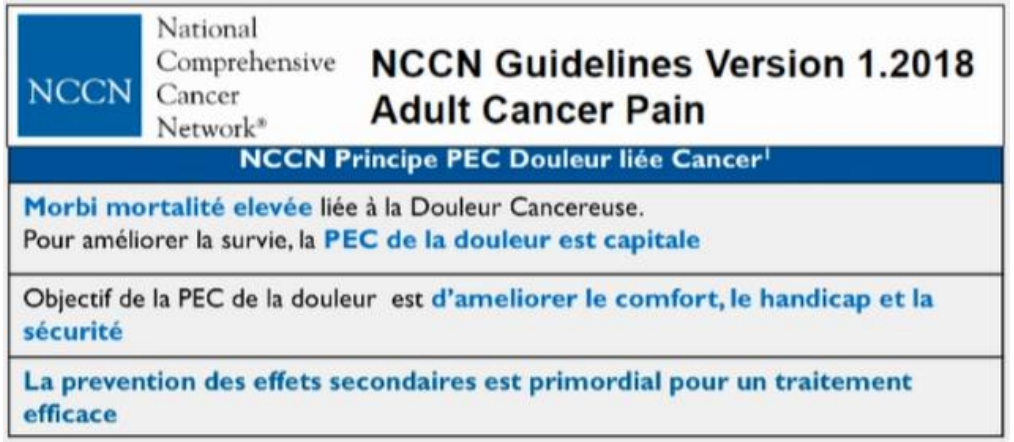
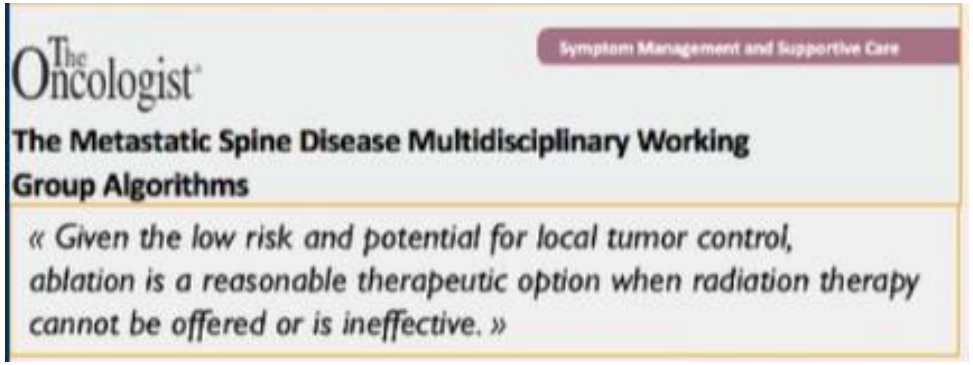
Autres localisations métastatiques

- **Os** :
  - Contexte palliatif
    - prise en charge de la douleur +++
  - Contexte curatif



  - Techniques :
    - Ablation : RF ou cryoablation
    - Cimentoplastie, ostéosynthèse renforcée
    - Neurolyse

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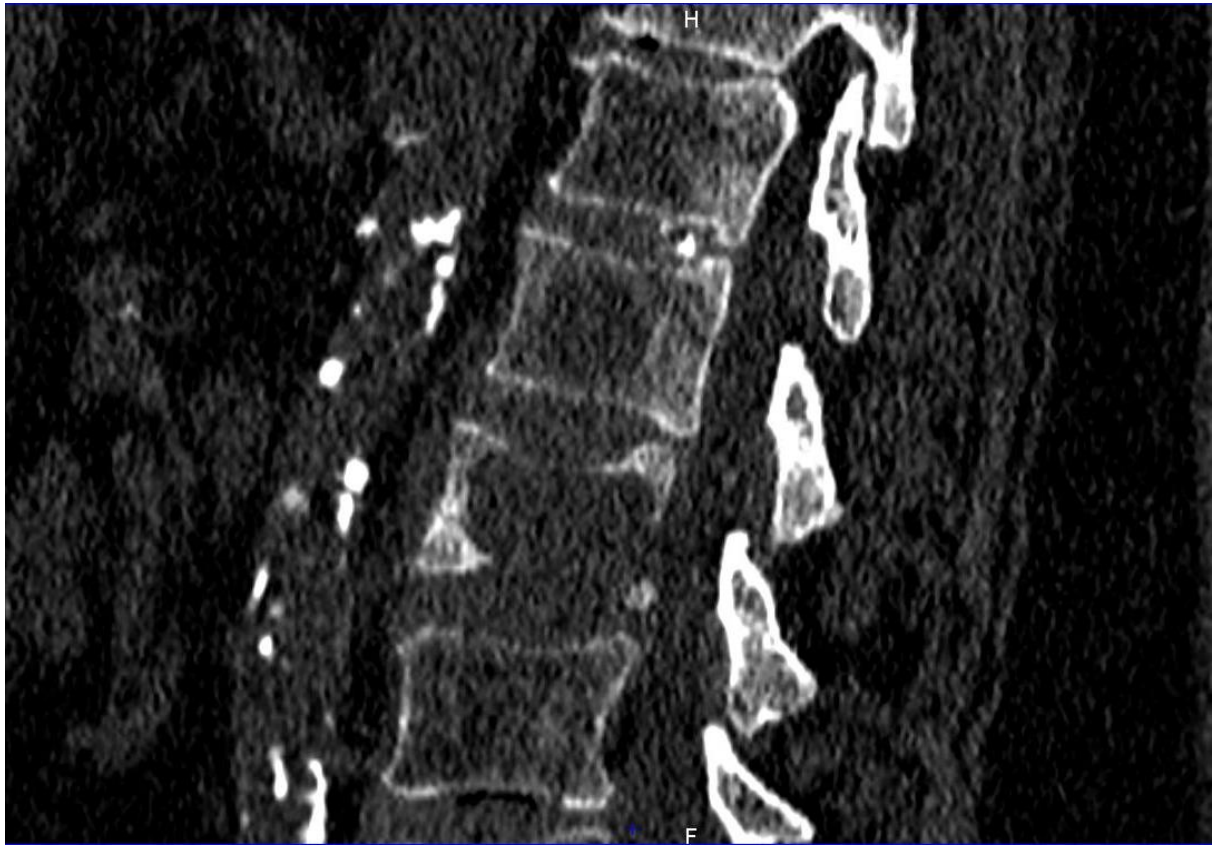
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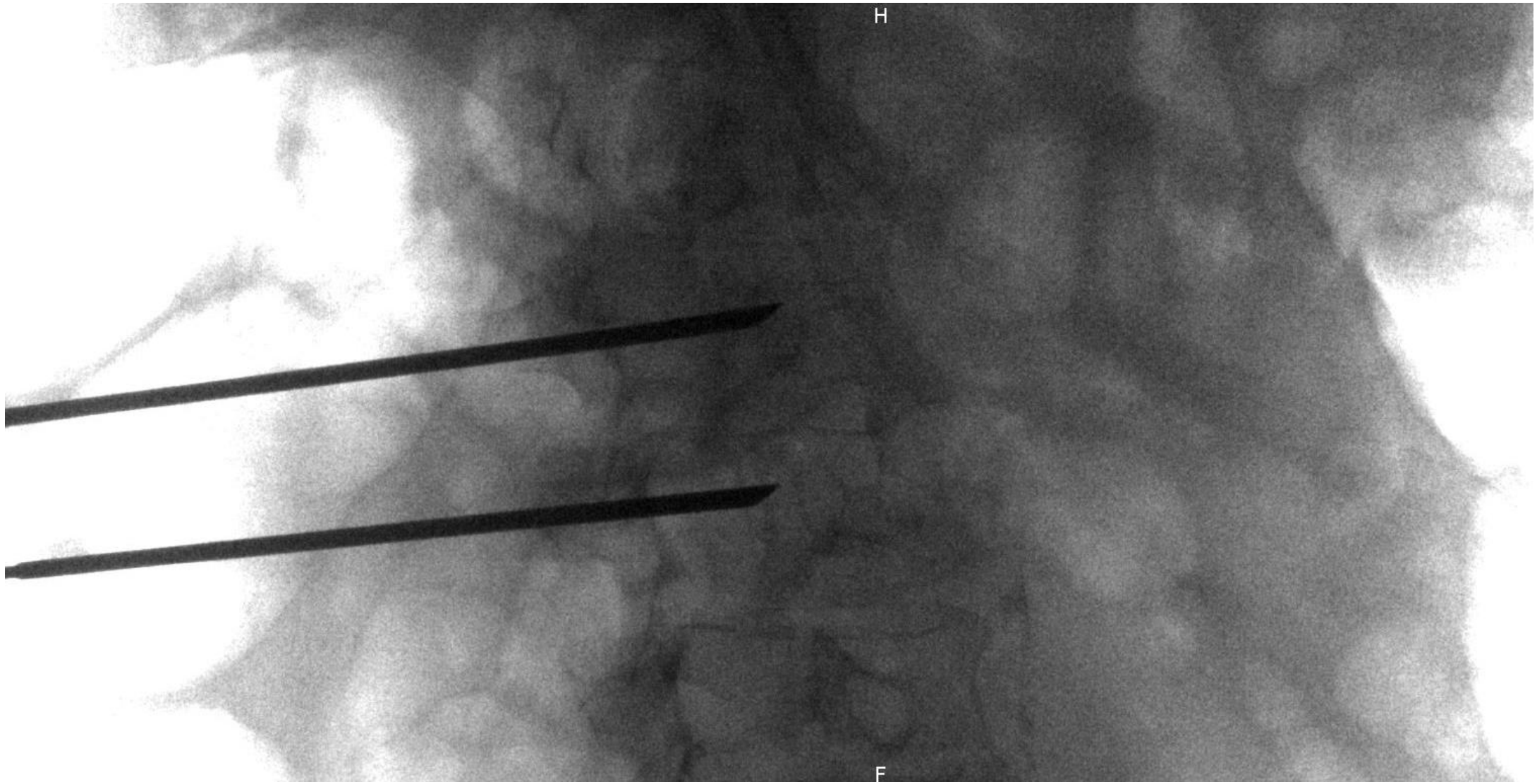
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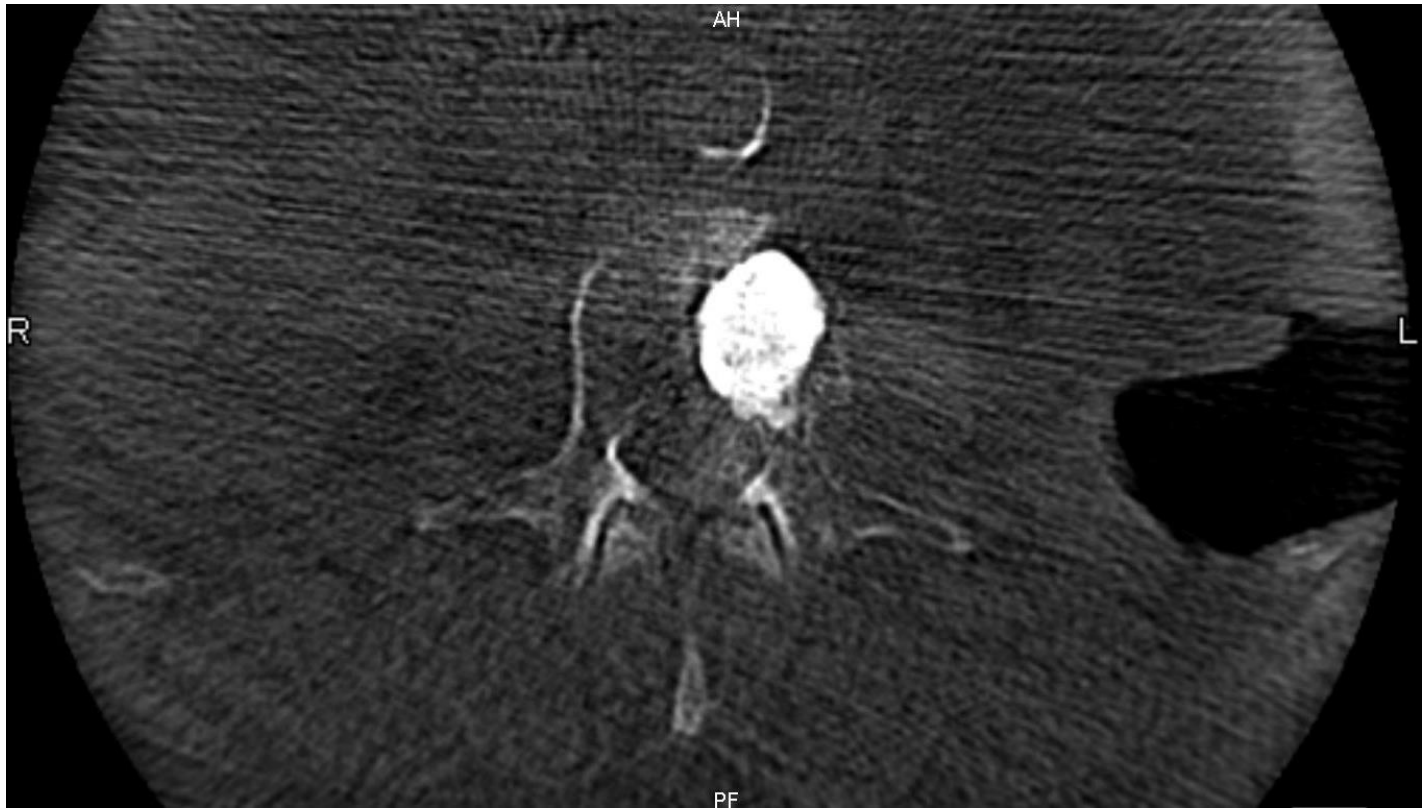
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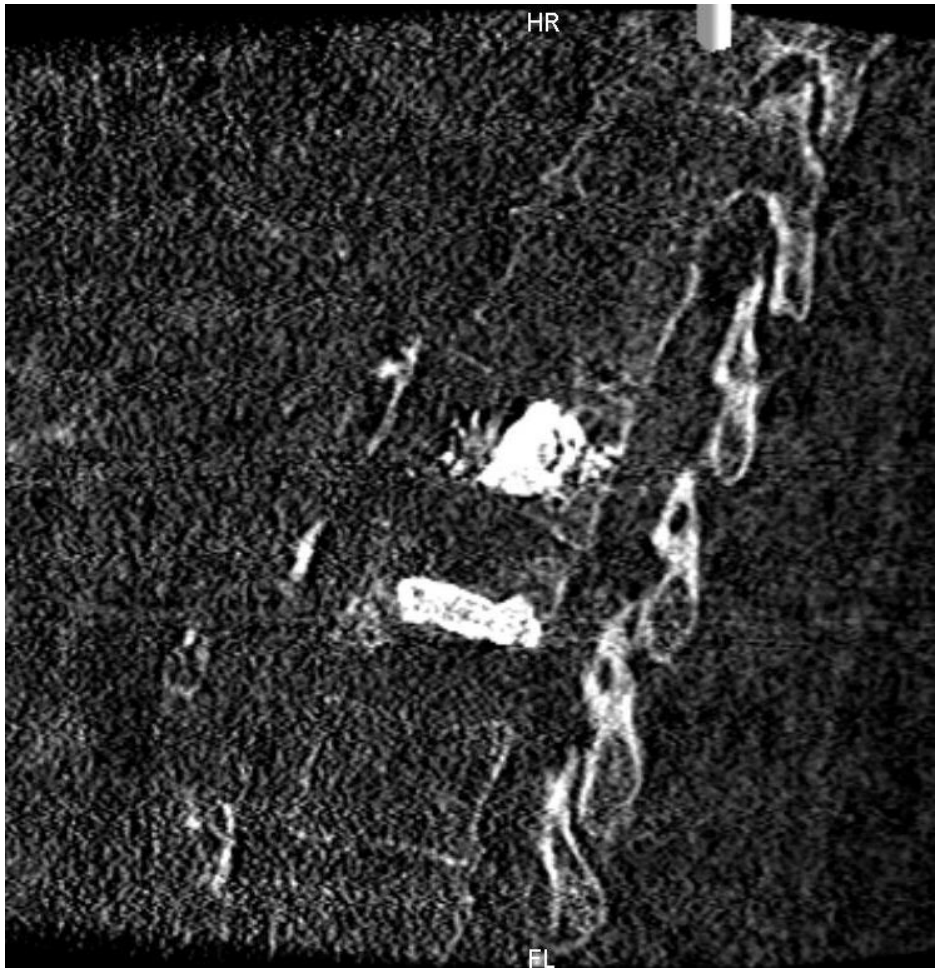
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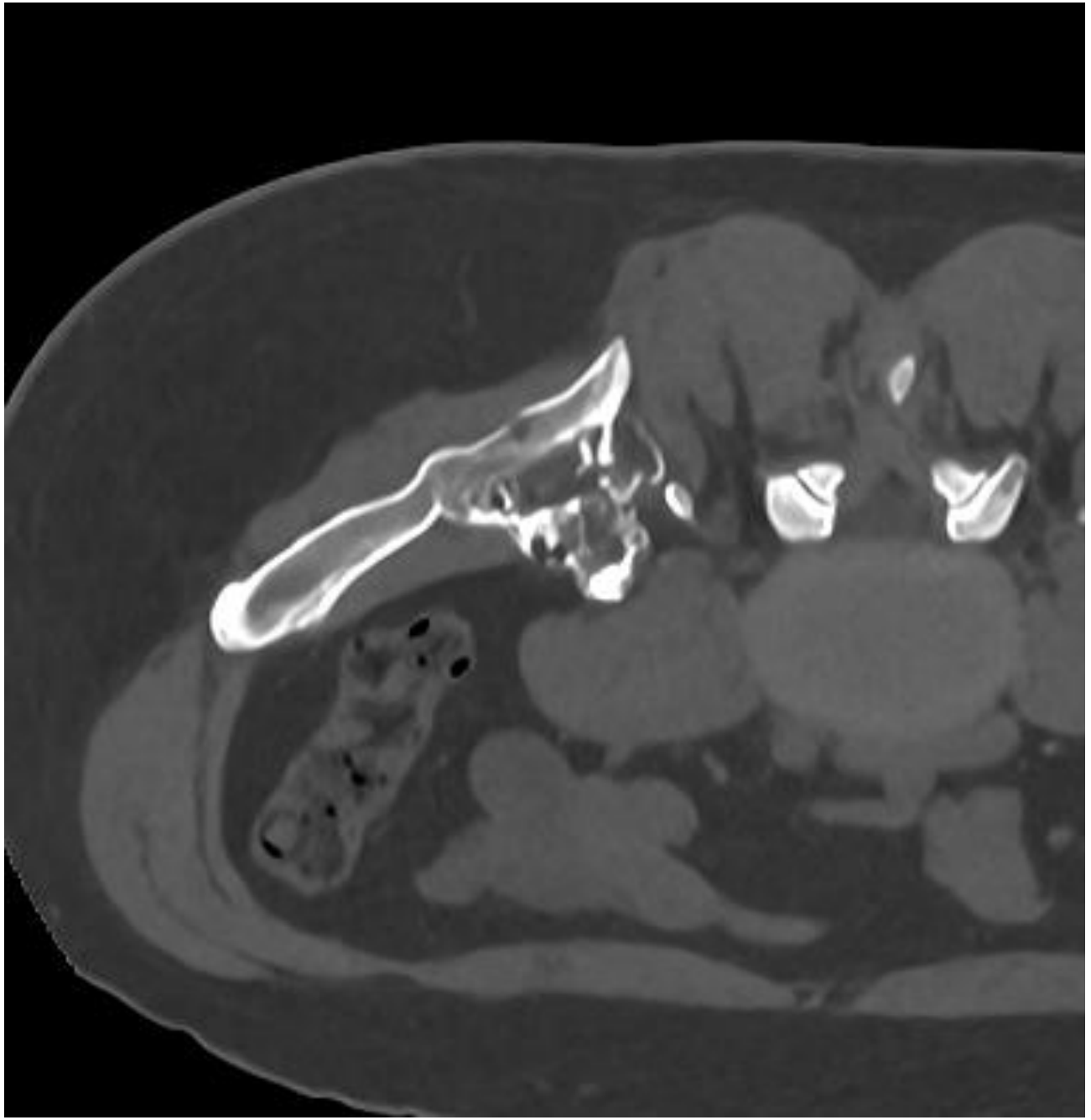
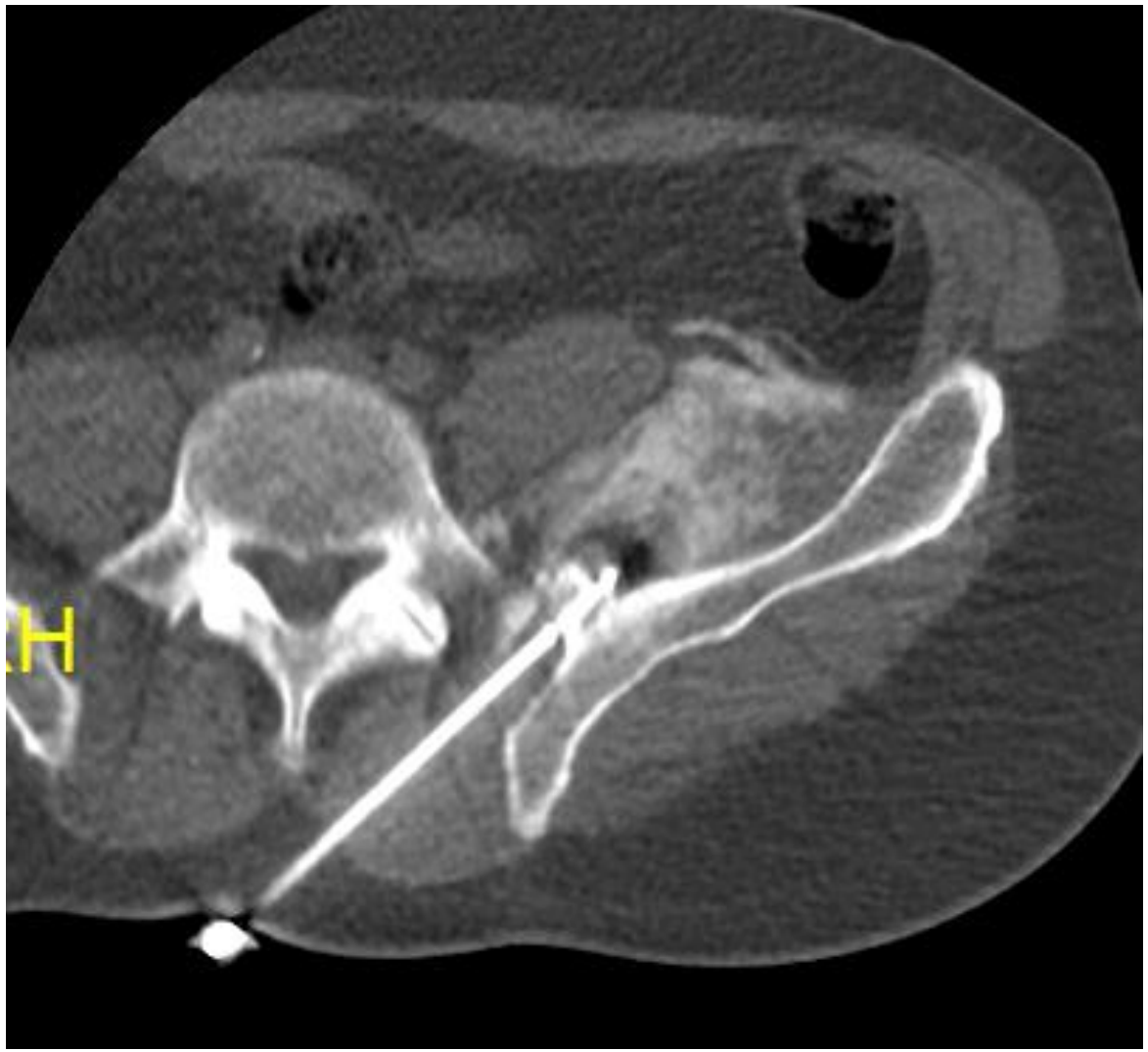
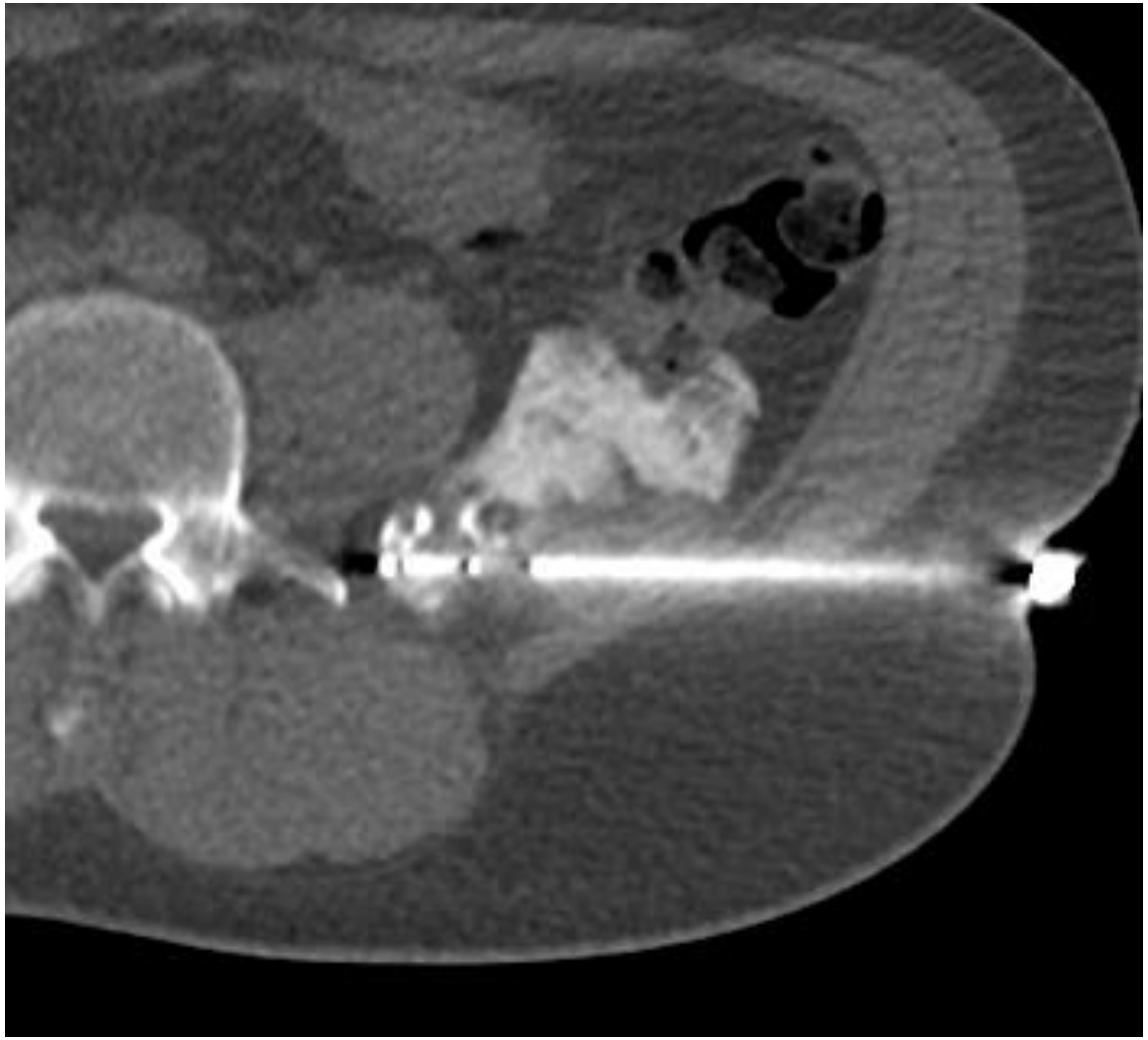
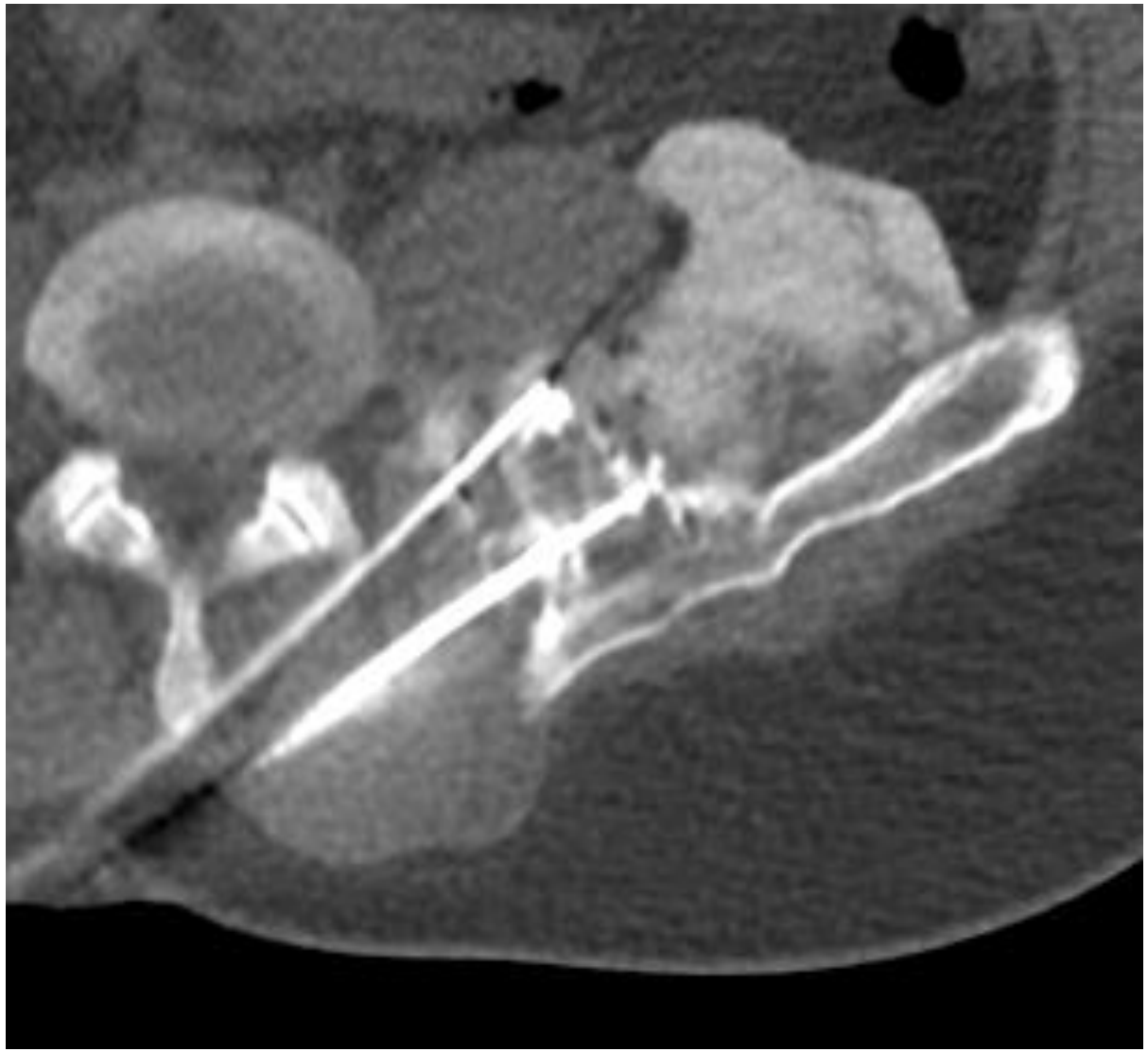








Indications cimentoplastie métastases osseuses

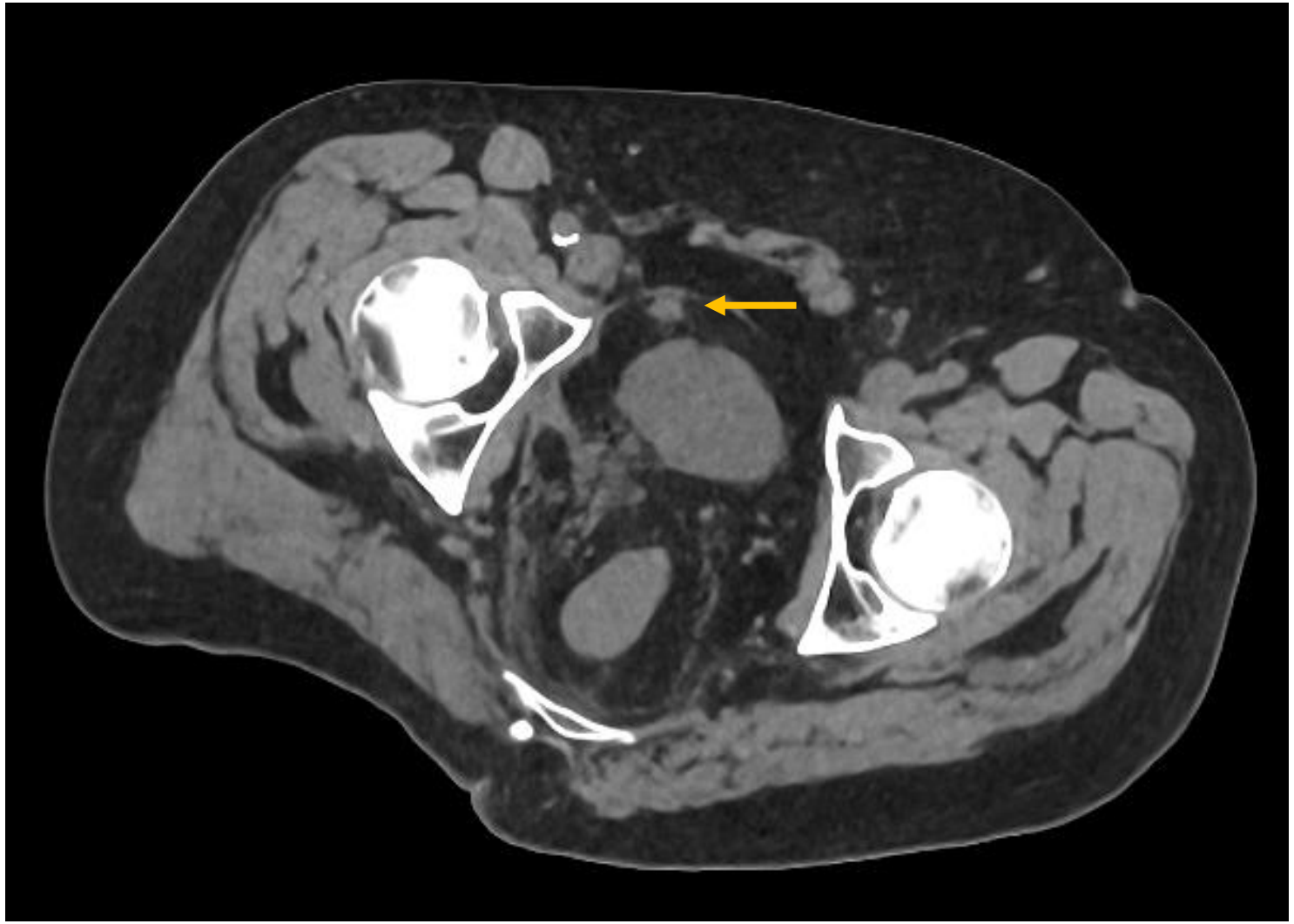
- Antalgique +++
- Consolidation: résistance en compression

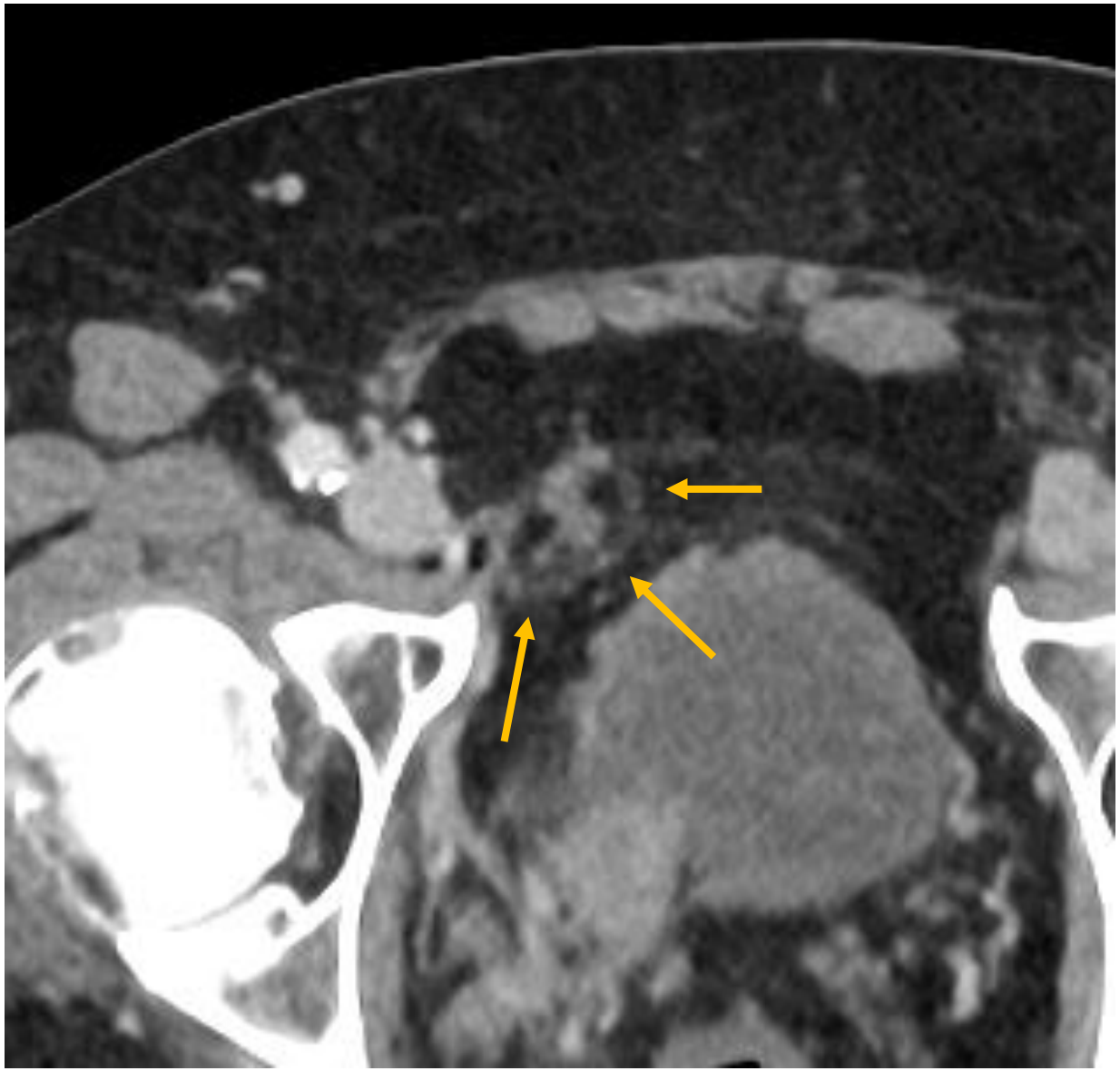
EVA: 7/10 2/10 à 1 mois

Remerciements icono : Dr F. DESCHAMPS IGR

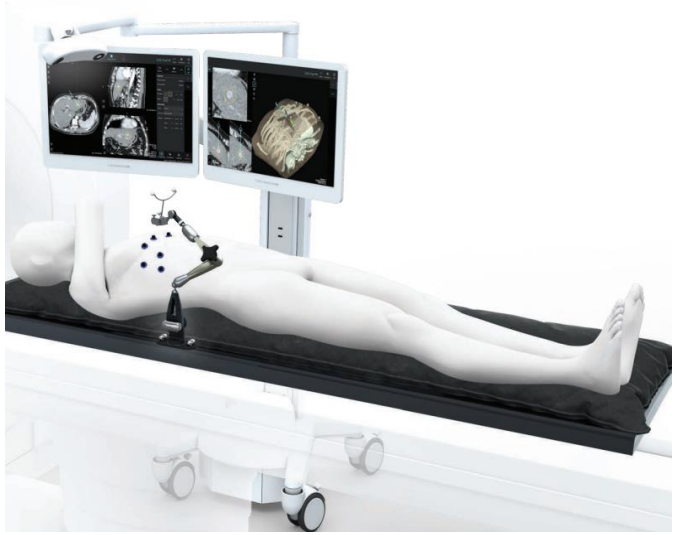
Autres localisations métastatiques

- **Surrénales**
- **Cutanée**
- **Péritoine**





Conclusion



- Techniques mini-invasives / multimodalité.
- Bonne option thérapeutique si patient non opérables et lésions de petite taille.
- Algologie interventionnelle.
- Nouvelles techniques guidage / aire ablation