Congrès Médical UOAD – 16/02/2019

Radiologie ou Chirurgie ?

Embolisation prostatique (HPB) et autres techniques novatrices en RI

Dr Fabrice DEPREZ

Radiologie interventionnelle

CHU UCL Namur, site Godinne

Consultant externe SLBO

La RI du CHU Godinne

- **Equipe de radiologie interventionnelle composée de :**
  - **2 radiologues interventionnels** 11/11 au CHU Godinne
    - *Dr Jean-François De Wispelaere*
    - *Dr Fabrice Deprez*
  - **1 neuro-radiologue interventionnel**, en moyenne 1/11 au CHU Godinne (à la demande)
    - *Pr Frank Hammer* (CUSL, UCL)
  - Une équipe de **7 infirmiers ou TIM** spécialisés en RxI

- **Une salle de RxI (Philips) à la pointe de la technologie :**
  - Upgrade « Clarity » = optimisation dosimétrique
  - Cone-Beam CT (CBCT), angiographies 3D, fusion multimodale…
  - Un appareil d'écho-doppler disponible en permanence
  - Un très large éventail de techniques et de matériels disponibles

  + un accès à la **salle hybride du QO (General Electric)**

- **Une activité journalière de RI en constante augmentation, couvrant *un très large panel* de procédures**

- **Garde de RxI 24h/24 7j/7**


PHILIPS

Radiologie Interventionnelle *vs* Chirurgie ?

RI vs Chirurgie ?

1- Oncologie:

- Chimio-embolisation hépatique : c-TACE vs DEB-TACE
- Radio-embolisation hépatique : SIRT/TARE
- Thermoablations (Foie, Rein, Pancréas, Poumon, Os): RFA / MWA / cryoablation / IRE

2- Trauma rachis:

Vertébroplasties, kyphoplastie

3- Hémorragies: TOUTES les hémorragies sont potentiellement une indication de RI

Foie, rate, reins, tube digestif (estomac, duodénum, IG, colon, rectum)

Musculaires (++ si R/anticoag), Epistaxis, Post-partum

Anévrysmes …

RI vs Chirurgie ?

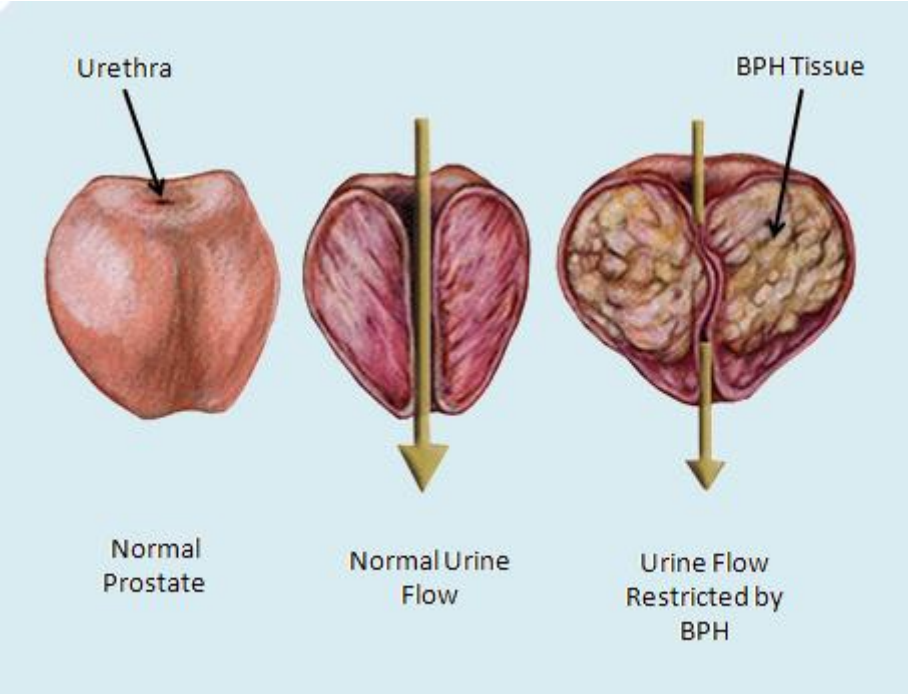
4- Traitements alternatifs à la chirurgie

- Endoprothèses vasculaires
- Fistules A-V de dialyse, PAC…
- **HPB: Embolisation des artères prostatiques**
- **Fibromes utérins**
- Hémorroïdes
- Varices, varicocèles
- Embolisation bariatrique ?

…

L'hypertrophie prostatique bénigne

- Hypertrophie **adénomateuse (supéro-médiane)** de la prostate
- Homme >50ans - prévalence: 50% si >80ans
- <u>Symptômes:</u> **troubles mictionnels** → pollakiurie, mictions de petit volume, bas débit, nycturie… plus rarement, rétention urinaire aigue



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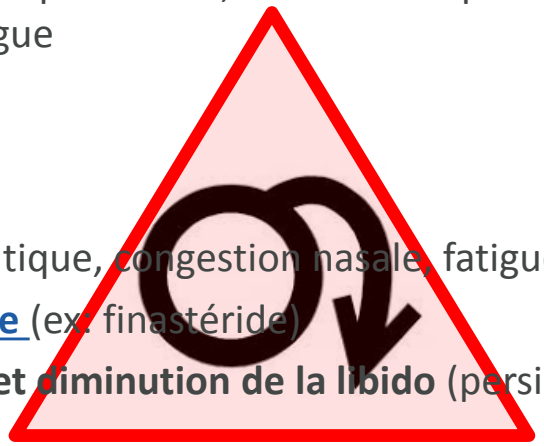
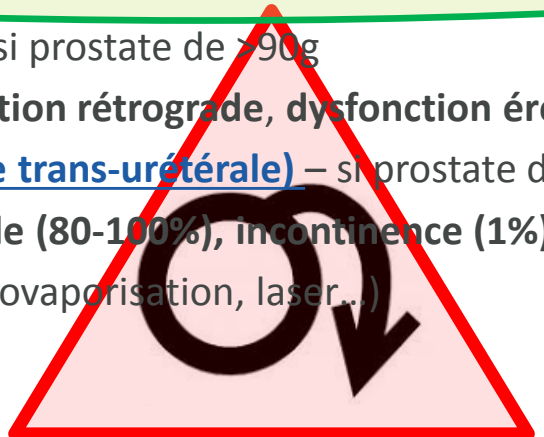


- Traitements:
  - ✓ **α-bloquants** (ex: tamsulosine)
    E2aires: hypotension orthostatique, congestion nasale, fatigue, **troubles de l'érection**
  - ✓ **Inhibiteurs de la 5-α-reductase** (ex: finastéride)
    E2aires: **dysfonction érectile et diminution de la libido** (persistante après R/), infertilité, dépression,
  - ✓ (Anti-cholinergiques)
  - ✓ **Embolisation des artères prostatiques** – PAE (Prostatic Artery Embolization)
  - ✓ **Prostatectomie chirurgicale** – si prostate de ≥90g
    E2aires: **incontinence, éjaculation rétrograde**, **dysfonction érectile** (40%), hémorragie…
  - ✓ **TURP (resection endoscopique trans-urétérale)** – si prostate de >30g <90g
    E2aires: **éjaculation rétrograde (80-100%), incontinence (1%), sténose urétrale (10%)**…
  - ✓ Autres (thermothérapie, électrovaporisation, laser…)



International Prostate Symptom Score (I-PSS)

Patient Name: _____ **Date of birth:** _____ **Date completed** _____

In the past month:	Not at All	Less than 1 in 5 Times	Less than Half the Time	About Half the Time	More than Half the Time	Almost Always	Your score
1. Incomplete Emptying How often have you had the sensation of not emptying your bladder?	0	1	2	3	4	5	
2. Frequency How often have you had to urinate less than every two hours?	0	1	2	3	4	5	
3. Intermittency How often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5	
4. Urgency How often have you found it difficult to postpone urination?	0	1	2	3	4	5	
5. Weak Stream How often have you had a weak urinary stream?	0	1	2	3	4	5	
6. Straining How often have you had to strain to start urination?	0	1	2	3	4	5	
	None	**1 Time**	**2 Times**	**3 Times**	**4 Times**	**5 Times**	
7. Nocturia How many times did you typically get up at night to urinate?	0	1	2	3	4	5	
Total I-PSS Score							

Score: 1-7: *Mild* 8-19: *Moderate* 20-35: *Severe*

Quality of Life Due to Urinary Symptoms	Delighted	Pleased	Mostly Satisfied	Mixed	Mostly Dissatisfied	Unhappy	Terrible
If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?	**0**	**1**	**2**	**3**	**4**	**5**	**6**

IPSS

The questions refer to the following urinary symptoms:

Questions	Symptom
1	Incomplete emptying
2	Frequency
3	Intermittency
4	Urgency
5	Weak Stream
6	Straining
7	Nocturia

Question eight refers to the patient's perceived quality of life.

The first seven questions of the I-PSS are identical to the questions appearing on the American Urological Association (AUA) Symptom Index which currently categorizes symptoms as follows:

Mild (symptom score less than of equal to 7)
Moderate (symptom score range 8-19)
Severe (symptom score range 20-35)

QoL

The IIEF-5 Questionnaire (SHIM)

Please encircle the response that best describes you for the following five questions:

Over the past 6 months:					
1. How do you rate your confidence that you could get and keep an erection?	Very low 1	Low 2	Moderate 3	High 4	Very high 5
2. When you had erections with sexual stimulation, how often were your erections hard enough for penetration?	Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
3. During sexual intercourse, how often were you able to maintain your erection after you had penetrated your partner?	Almost never of never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5
4. During sexual intercourse, how difficult was it to maintain your erection to completion of intercourse?	Extremely difficult 1	Very difficult 2	Difficult 3	Slightly difficult 4	Not difficult 5
5. When you attempted sexual intercourse, how often was it satisfactory for you?	Almost never or never 1	A few times (much less than half the time) 2	Sometimes (about half the time) 3	Most times (much more than half the time) 4	Almost always or always 5

Total Score: _____

1-7: Severe ED 8-11: Moderate ED 12-16: Mild-moderate ED 17-21: Mild ED 22-25: No ED

IIEF

(erectile function)

Sélection des patients

- Equipe MULTIDISCIPLINAIRE !
  - ✓ Toujours via un **urologue référent** (*CHU Godinne: Dr. Marcelo Di Gregorio*)
  - ✓ Collaboration urologie – radiologie interventionnelle – radiologie diagnostique

- Evaluation du patient (par l'urologue):
  - ✓ IPSS et QoL, IIEF
  - ✓ TRUS et RMI + CTA
  - ✓ PSA +/- biopsies écho-guidées
  - ✓ Evaluation urodynamique

PAE (prostatic arterial embolization) ssi:

IPSS>18 et/ou QoL>3

Prostate > 30cm³

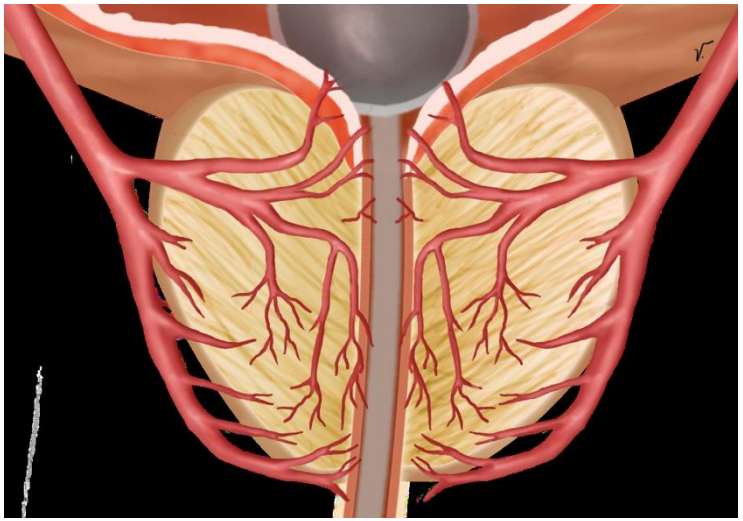
Pas de cancer

Pas de vessie «neuro» / décomp.

- Consultation en radiologie interventionnelle
  - ✓ Discussion de l'ensemble des options thérapeutiques
  - ✓ Technique, effets secondaires, consentement

- Critères d'exclusion: **très rares**
  - ✓ IRC sévère *(option: CO2),* **artériosclérose sévère des artères iliaques (CTA)**
  - ✓ Troubles de la coagulation marqués, infection urinaire…

Technique



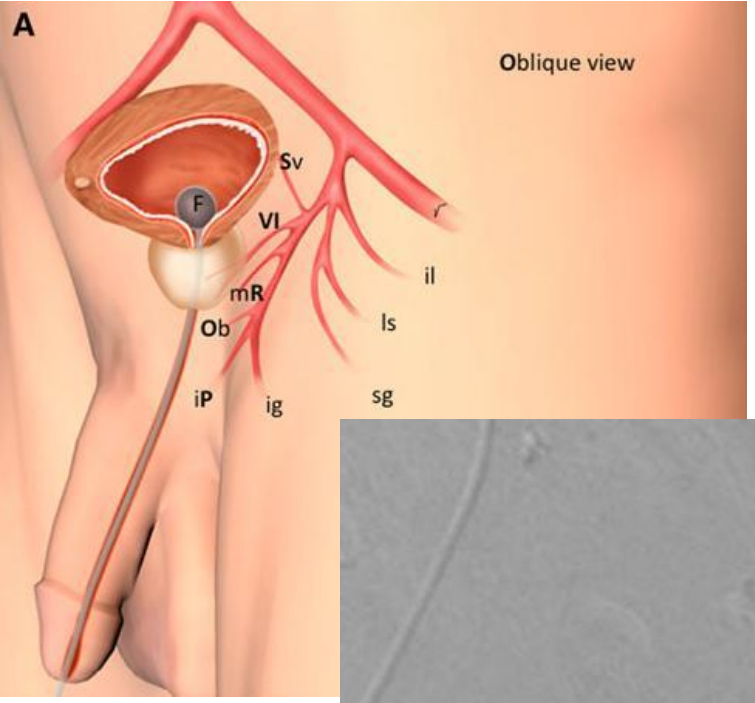
- Intervention **« one-day »** (hôpital de jour)

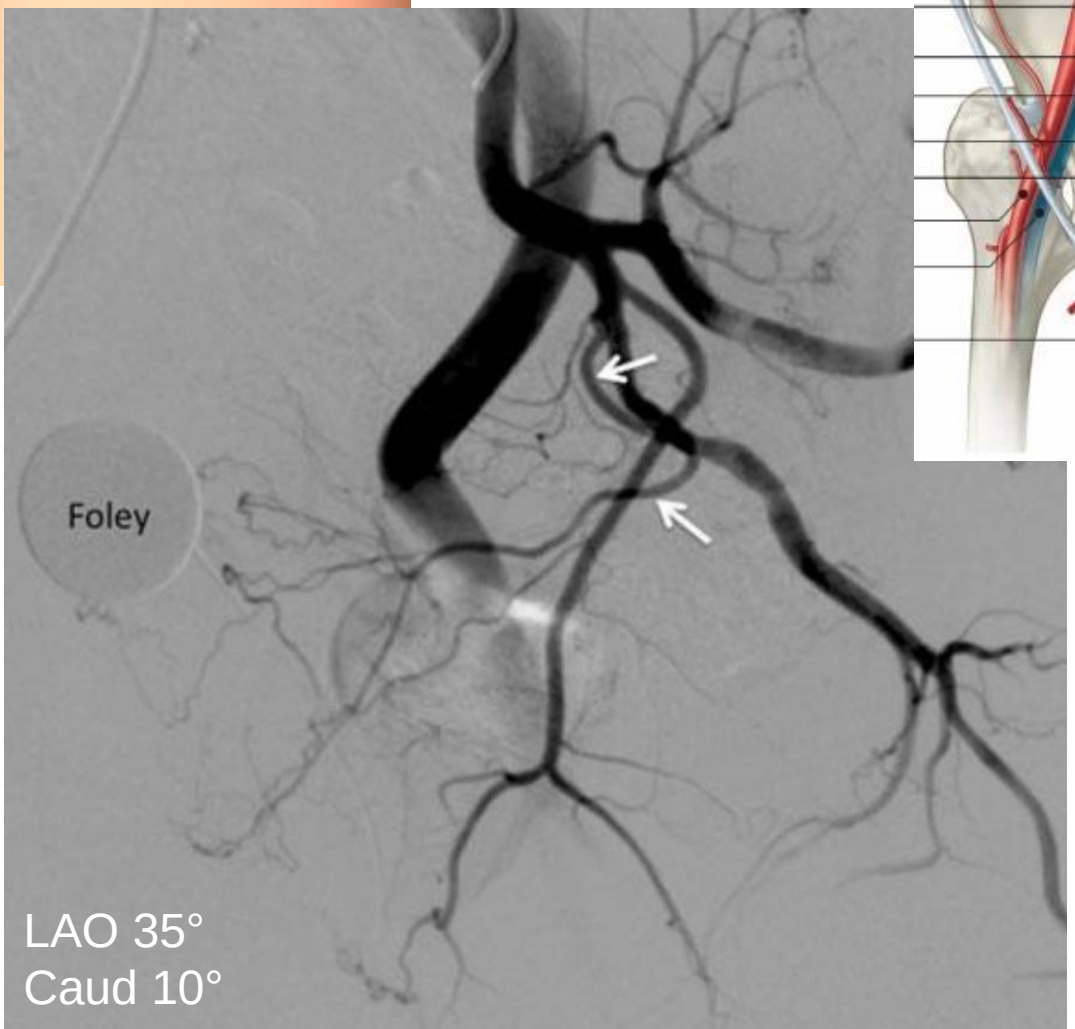
- Sonde urinaire (Foley) – retrait avant sortie
- Sous anesthésie locale
- Abord fémoral commun unilatéral (4F + système de fermeture)
- Micro-cathétérisme hyper-sélectif des artères prostatiques
- Embolisation par µsphères de 300-500 µm, bilatéralement

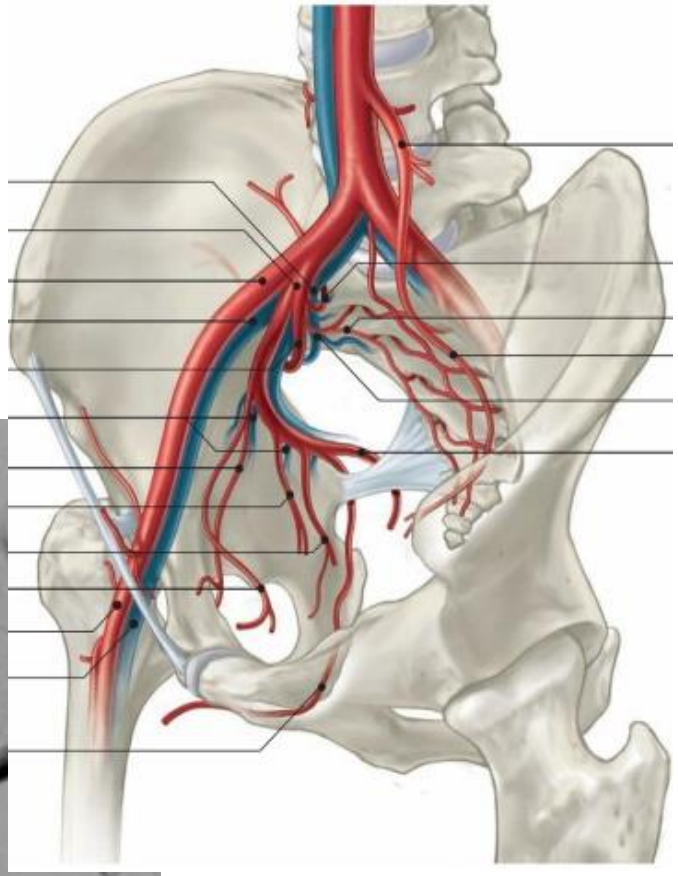
! Procédure longue: 2 à 3h en moyenne

- Traitement antidouleur post-op (2-3j): paracétamol +/- tramadol SN
  + prednisone 20mg/j pdt 3j

Anatomie

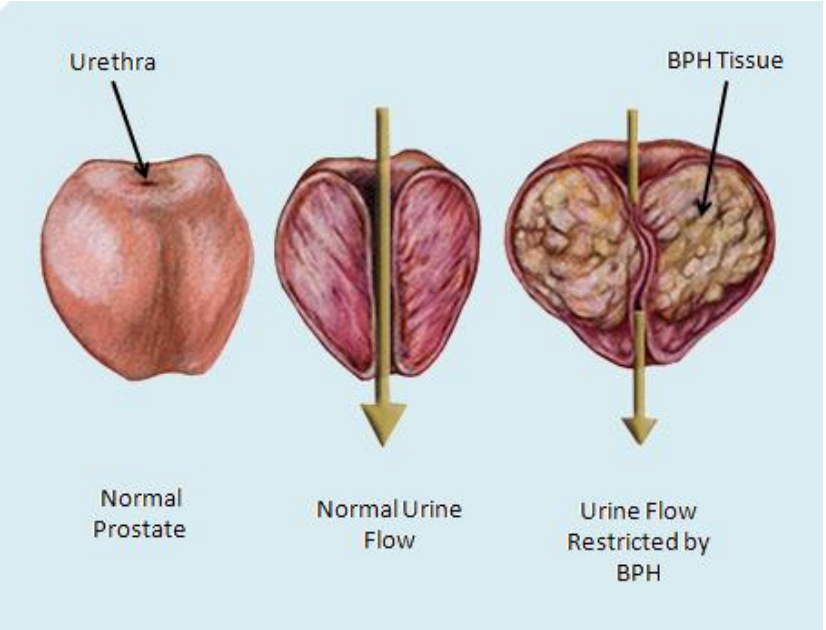




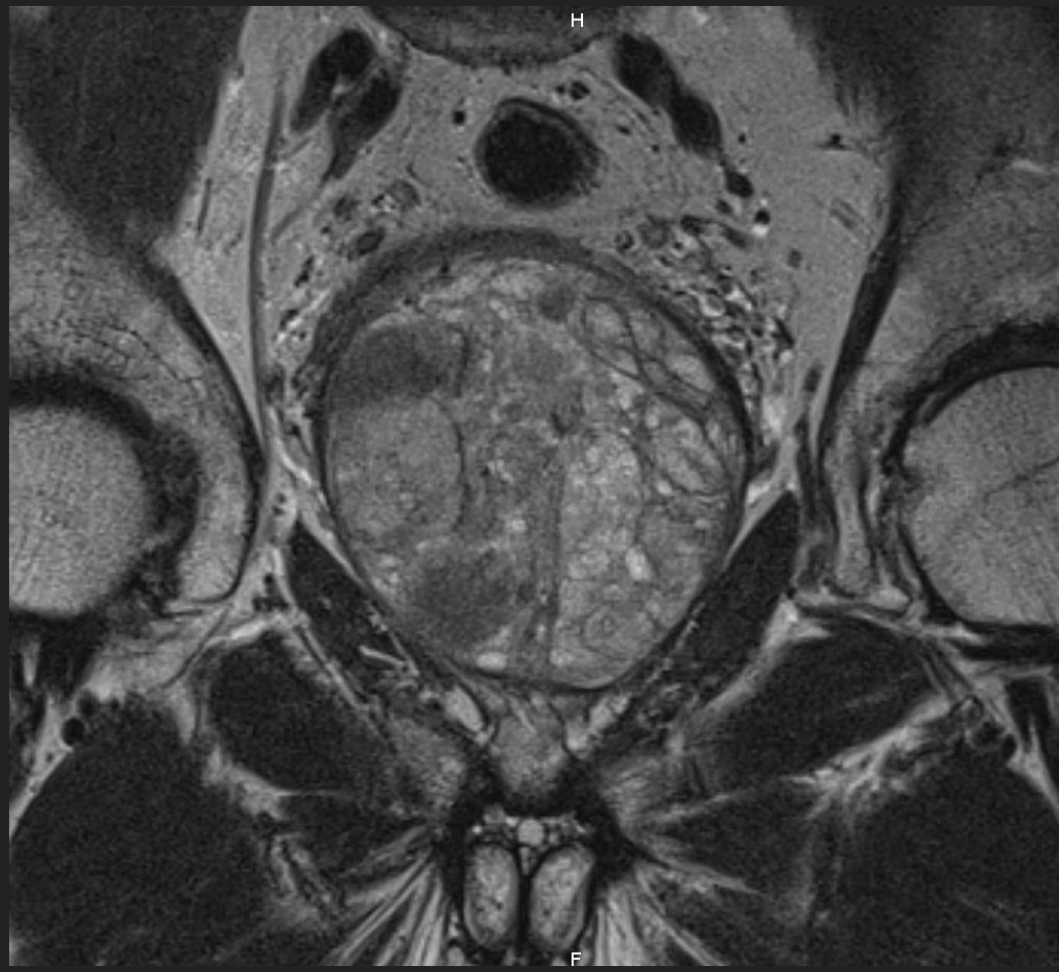


Case 1 – Prostate Embolization

- ♂, 85y
- Very large BPH (140g)




93.5 mm
F


H
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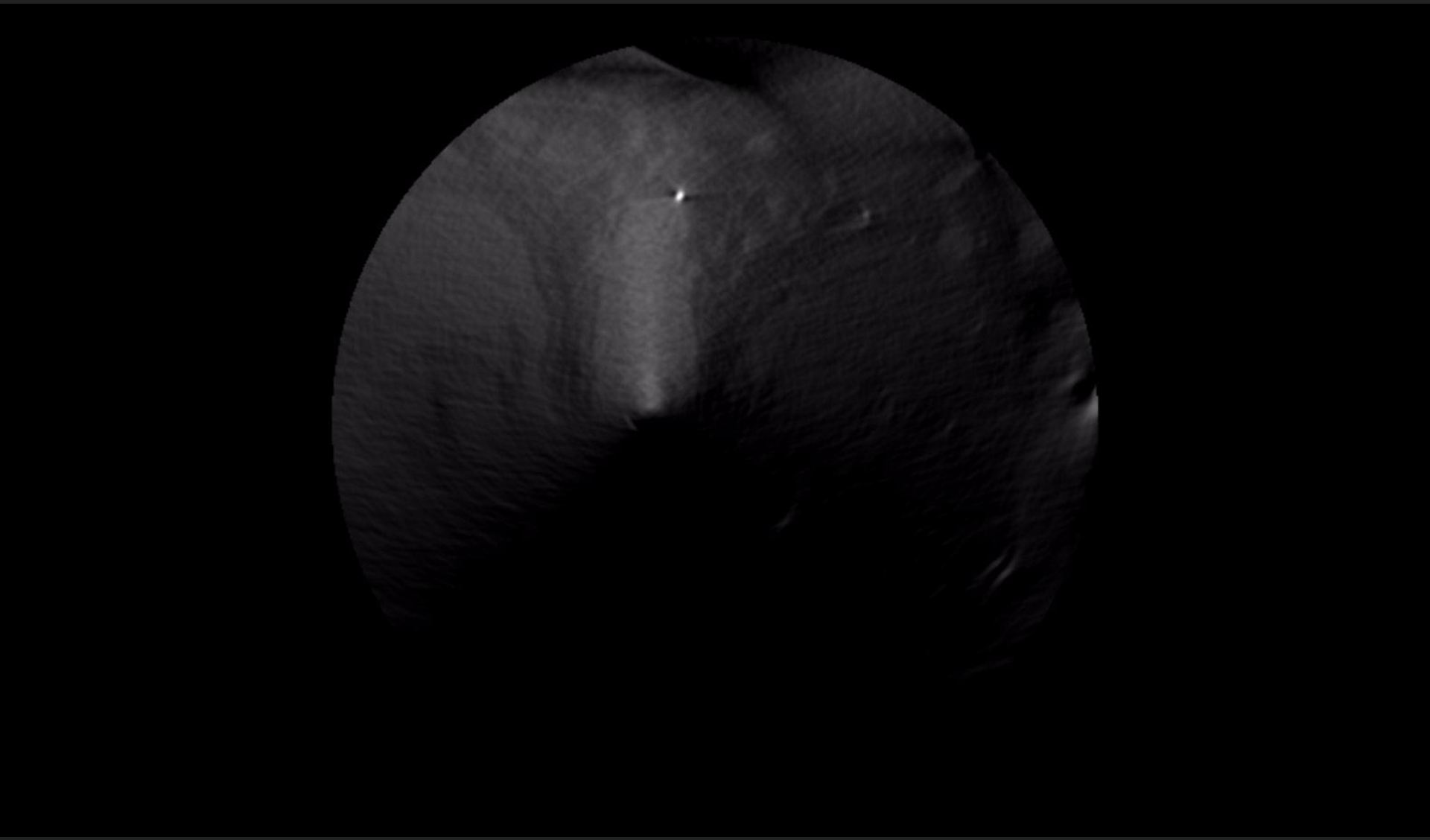
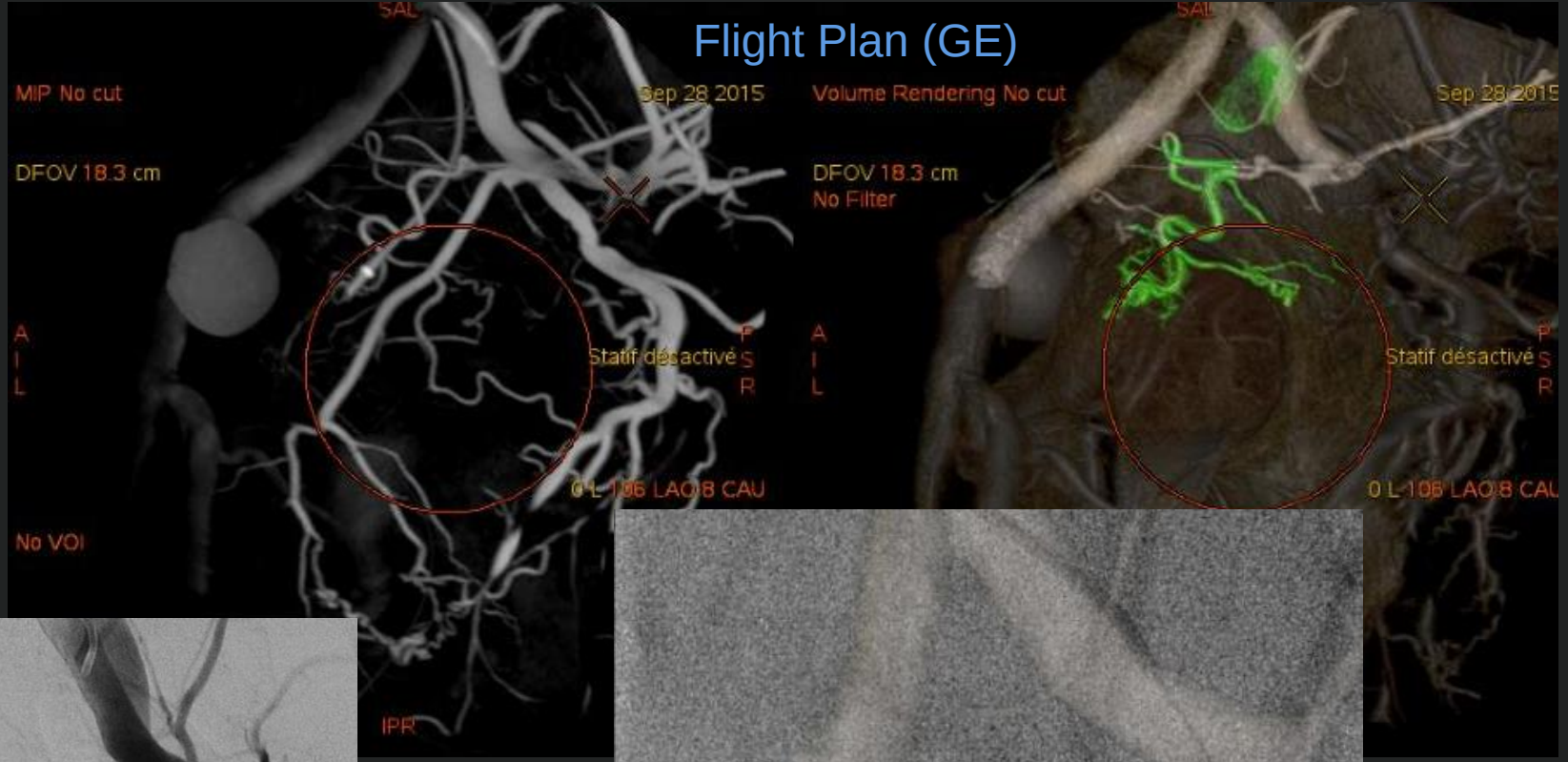
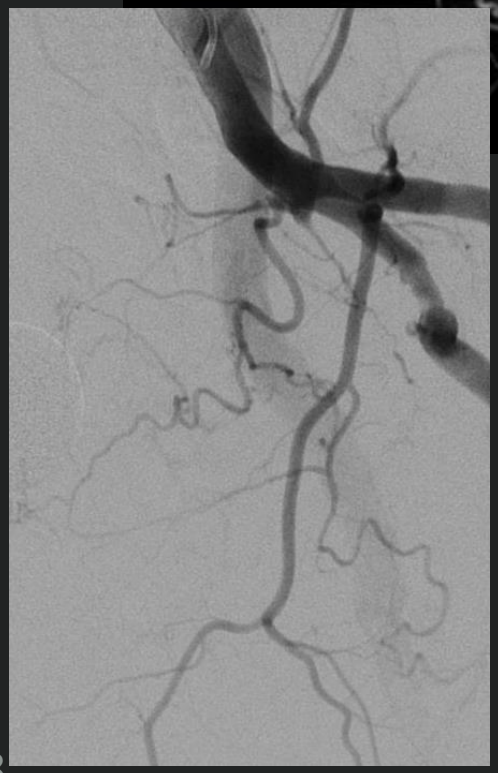
(Filt. 6)



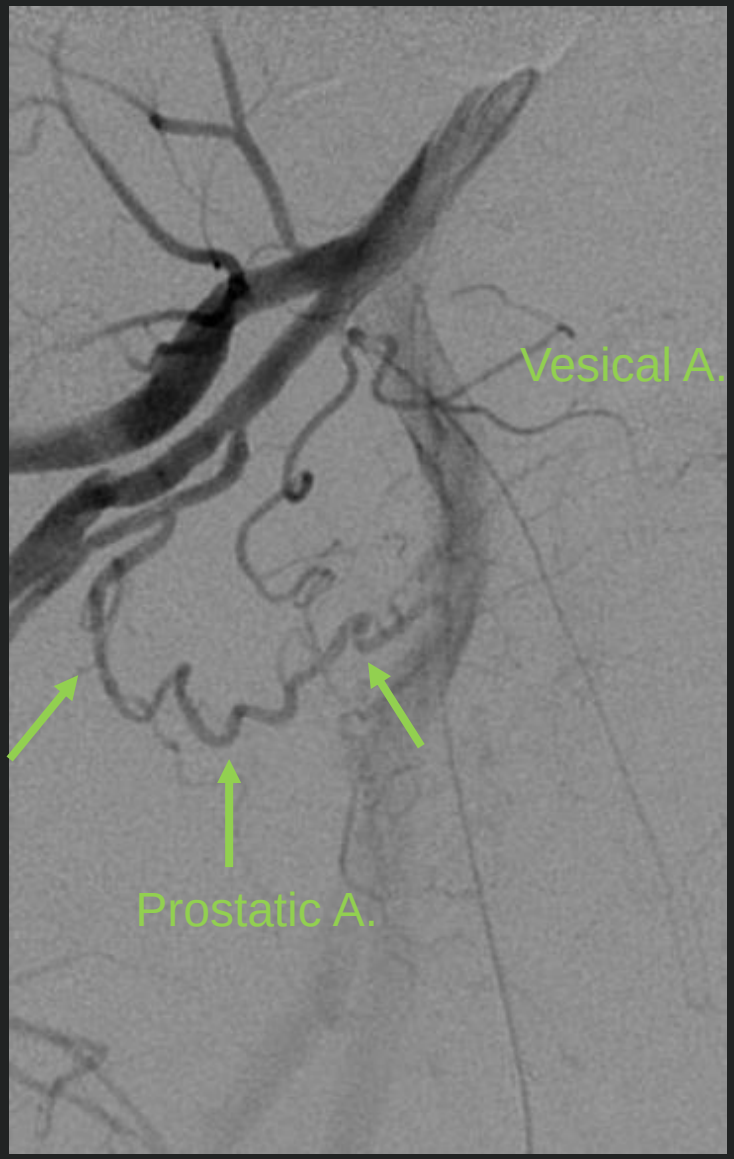
Flight Plan (GE)

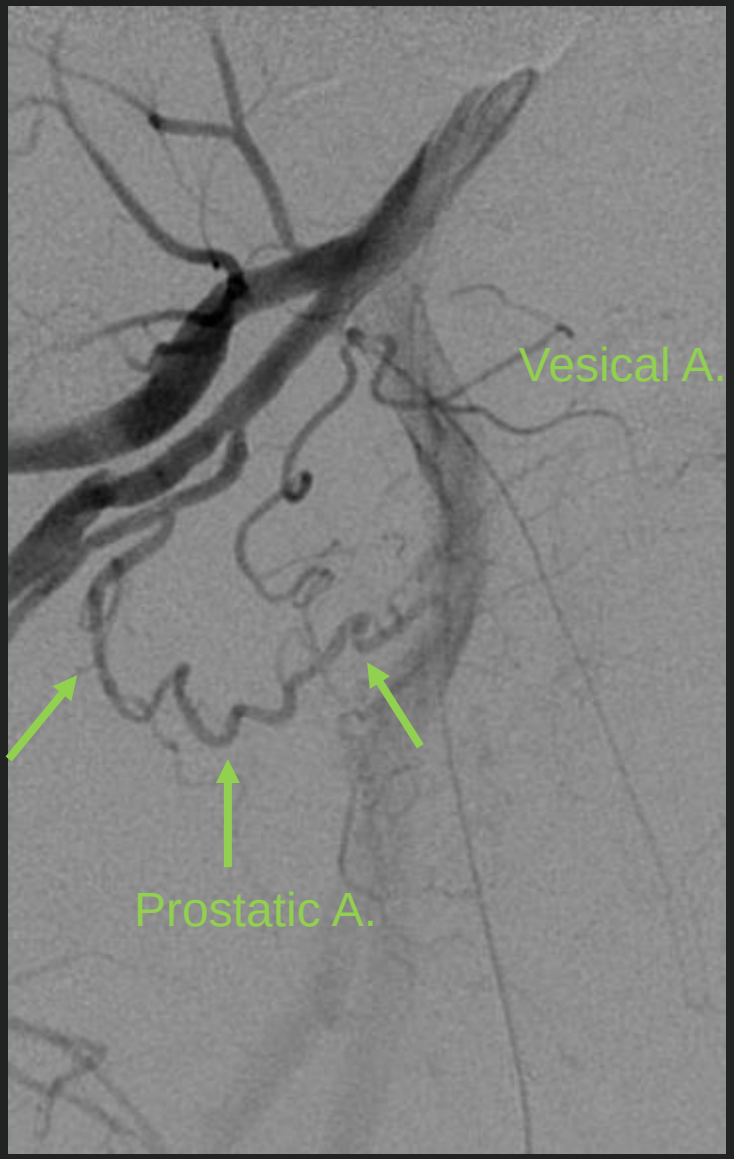


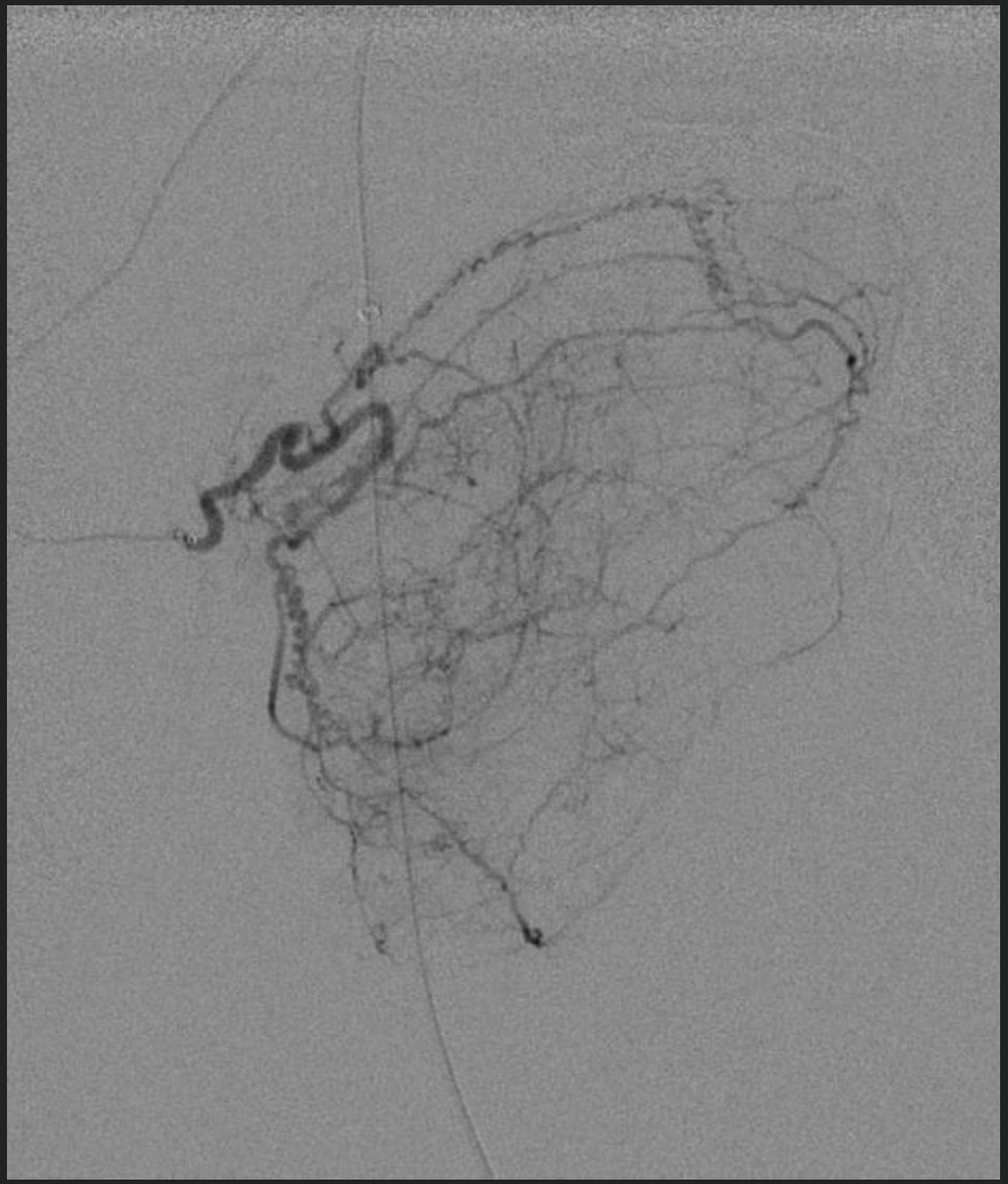


3D RoadMap

RAO 35°
Caud 10°

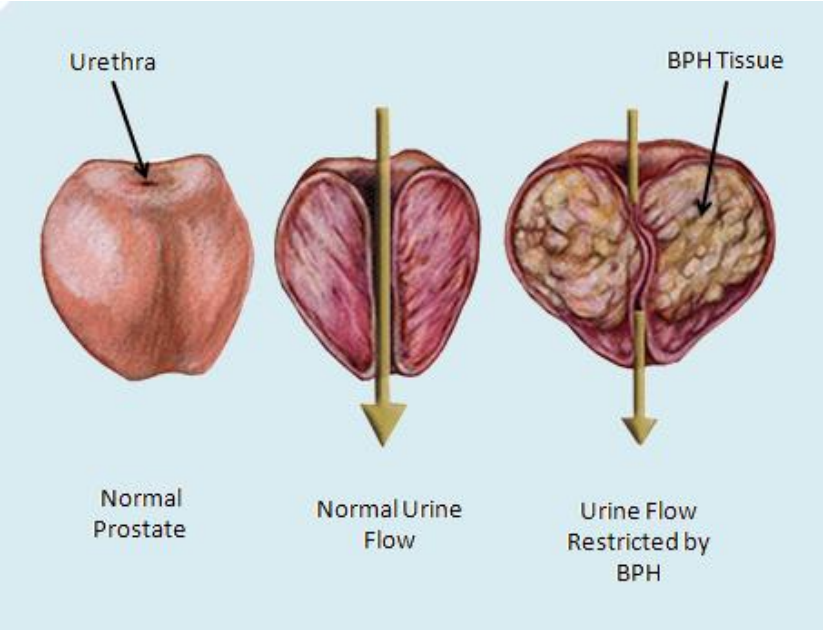

Vesical A.
Prostatic A.

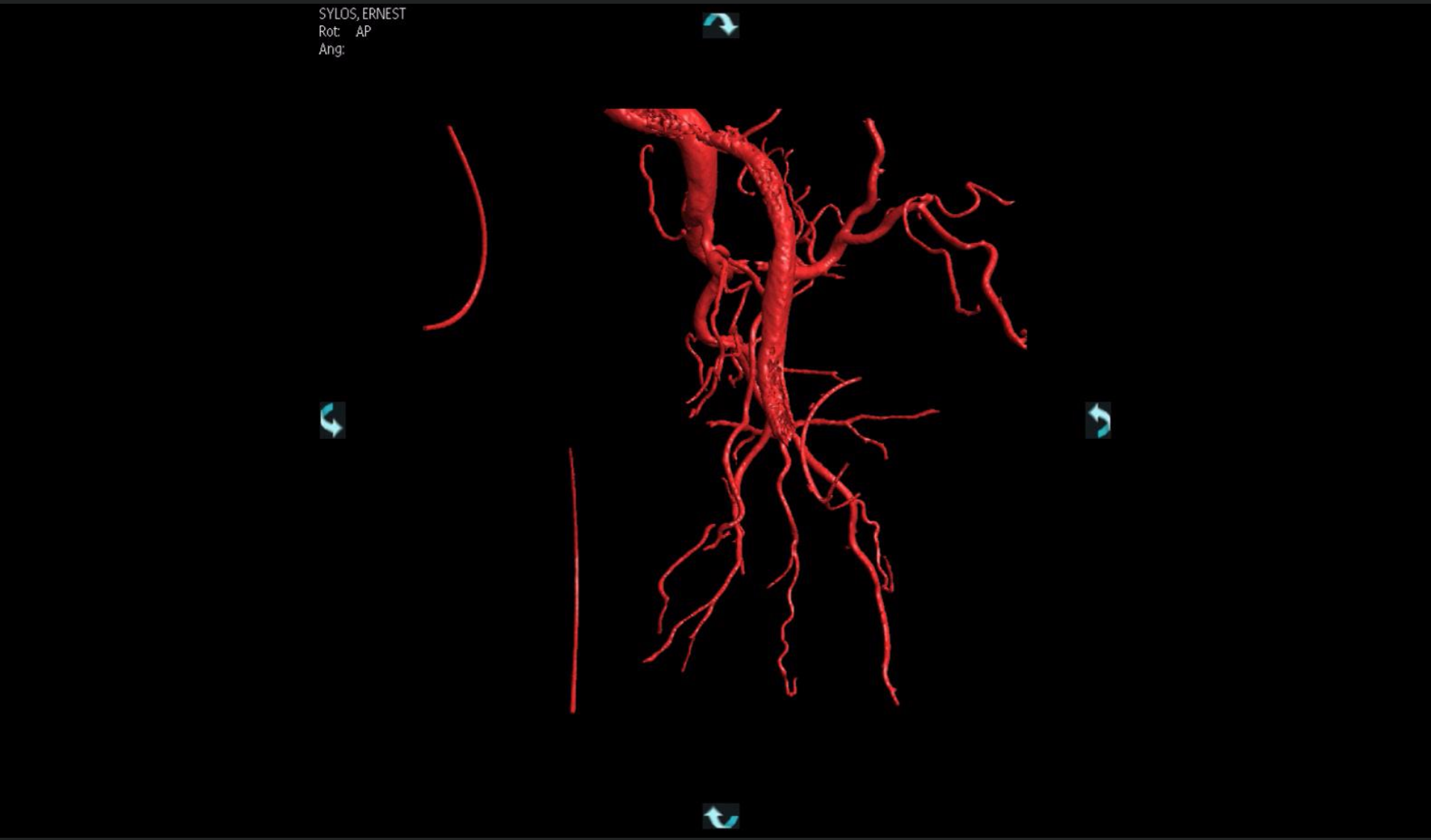

Vesical A.
Prostatic A.

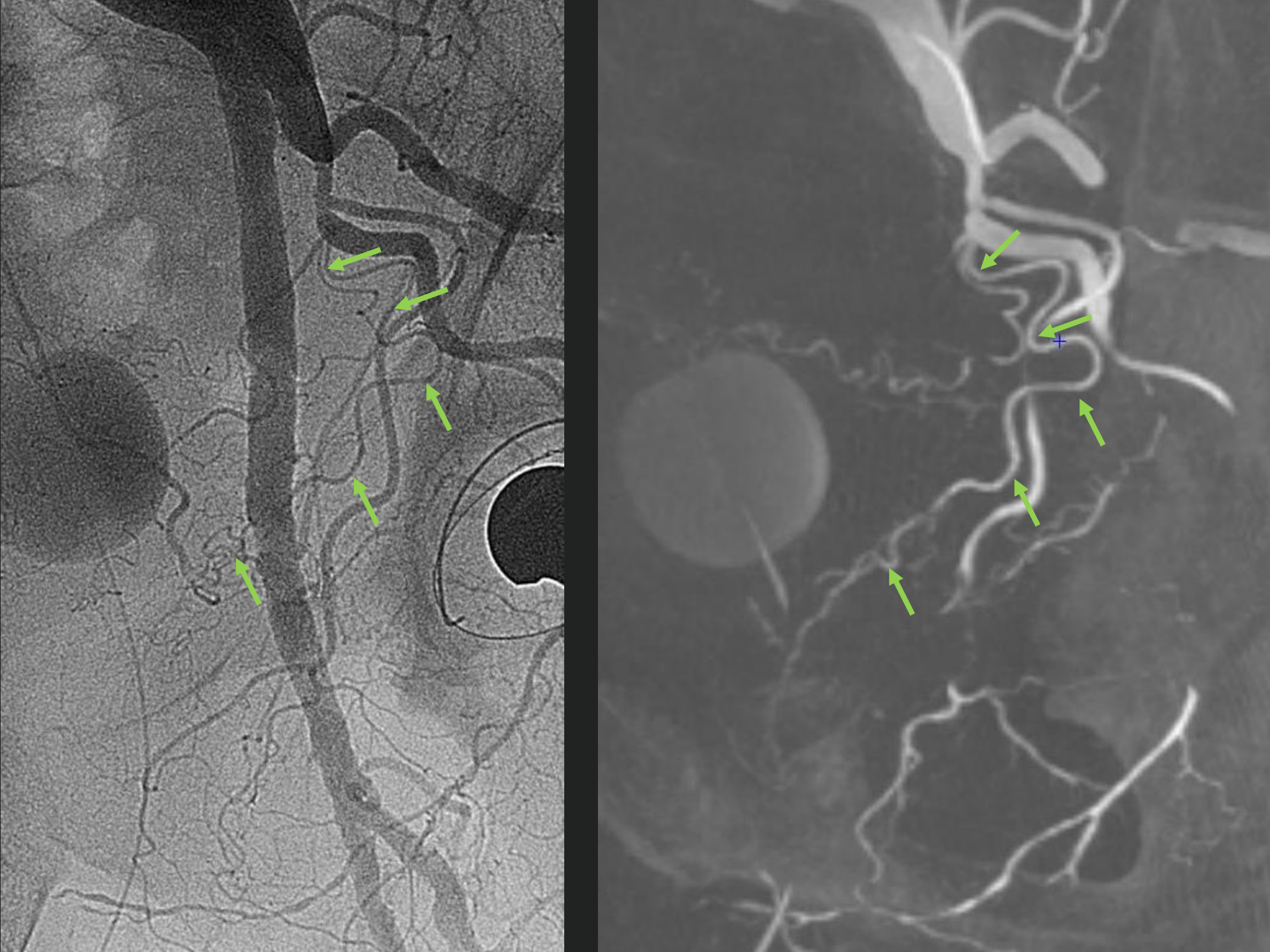


Case 2 – Prostate Embolization

- ♂, 80y
- BPH

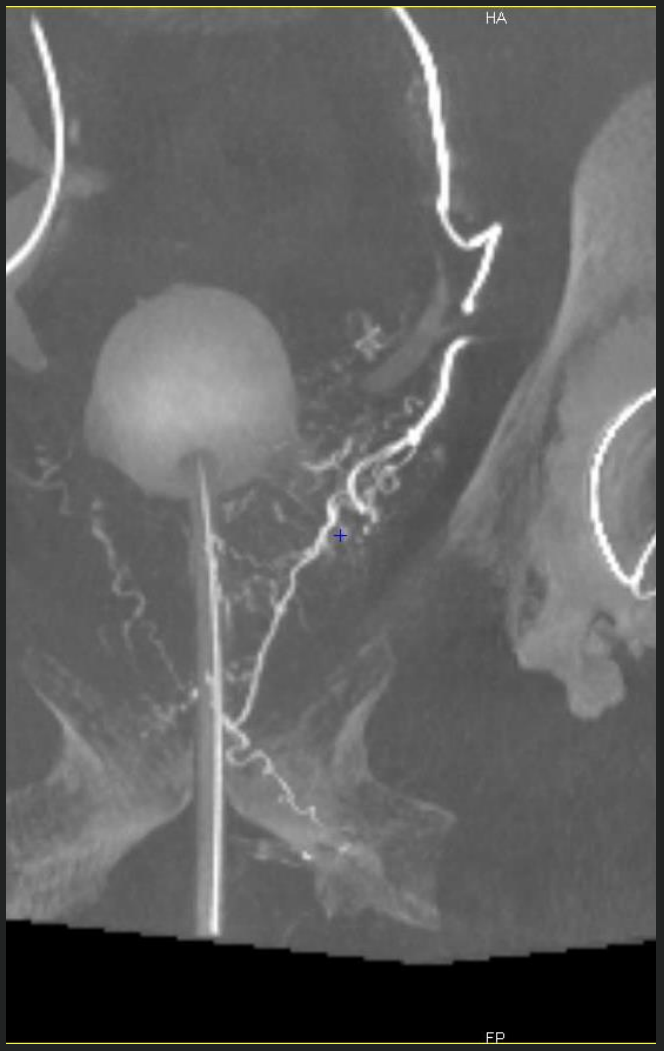


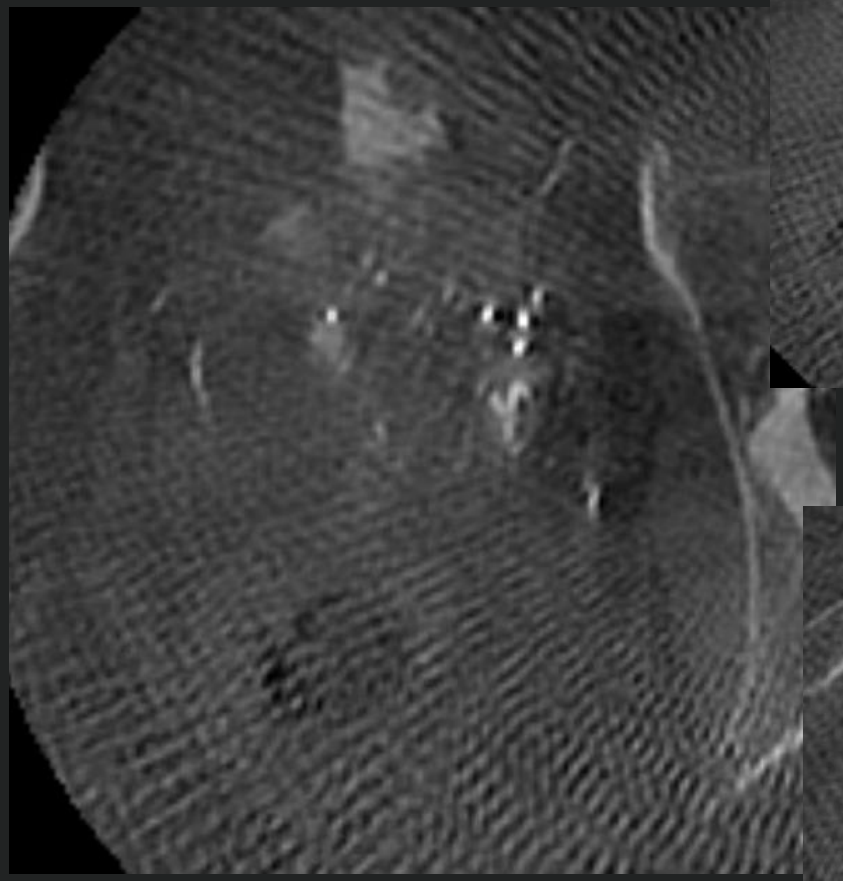

SYLOS, ERNEST
Rot: AP
Ang:

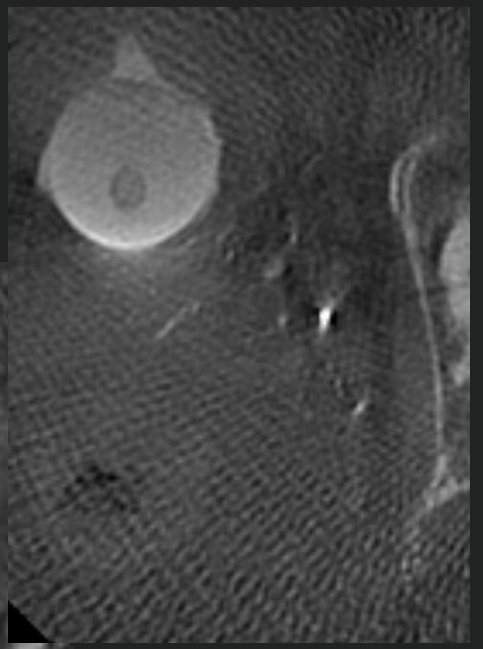


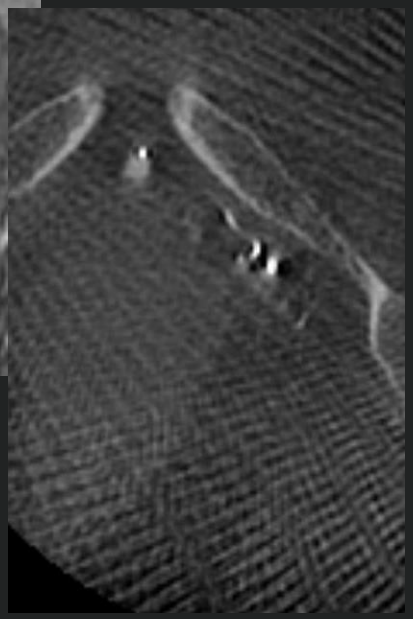
3D RoadMap

Hyperselective aCBCT









Clinical Results to Date (2008 →)

- Succès **technique**: **bilateral PAE**
  - ✓ 92% des cas
  - ✓ mais **amélioration des symptômes** même si échec technique partiel (**embolisation unilatérale**)!

- Succès **clinique**, 3-6 mois post-PAE:
  - ✓ **98%** des patients décrivent une **amélioration des symptômes**
    - → **98%** des patients ont un score **IPSS<8** *(versus >18 avt PAE)*
    - → **96%** des patients ont une **QoL≤3** *(versus >3 avt PAE)*

- Suivi des patients: par l'urologue !

The role of prostatic arterial embolization in patients with benign prostatic hyperplasia: a systematic review.

Schreuder SM, Scholtens AE, Reekers JA, Bipat S.

Cardiovasc Intervent Radiol. **2014 Oct**;37(5):1198-219. PMID: 25005565

But: Méta-analyse de 9 séries (between June 2008 and March 2013)

706 patients – suivi jusqu'à 12 mois post PAE.

Résultats:

IPSS and QOL-related symptoms improved mainly during the first month, with a further improvement up to 30 months.

- Mean IPSS score: **t0 = 23.31** → t+1m = 11.92 → **t+30m = 8.1**
- Mean QOL: **t0 = 4,34** → t+1m = 2,4 → **t+30m = 1,67**

No deterioration of the IIEF was seen after PAE

No case of impotence or retrograde ejaculation reported.

The PAE procedure seems **safe**:

- 6 bladder ischemia → 2 transient, 4 R/minor surgery (resection of a small area of necrosis).
- 20 transient rectal bleeding
- No cases of intestinal wall ischemia or corpus cavernosum ischemia.
- Most patients experienced no or mild pain. 4 patients with severe pain (VAS 9 or 10 – dt 4 bladder ischemia).
- Minor complications: hematoma on puncture site (n = 26), hematuria (n = 59), hematospermia (n = 38), urinary tract infection (n = 67), prostatitis and balanitis (n = 10) → Transient and R/Ab.

Prostatic Artery Embolization for Treatment of Benign Prostatic Hyperplasia in Patients with Prostates > 90 g: A Prospective Single-Center Study.

de Assis AM, Moreira AM, de Paula Rodrigues VC, Yoshinaga EM, Antunes AA, Harward SH, Srougi M, **Carnevale FC**.

J Vasc Interv Radiol. **2015 Jan**;26(1):87-93. PMID: 25541446

But:

Options thérapeutiques limitées pour les HPB de >90g:

- TURP = "gold standard" ssi <90 g, non recommandée si >90g.
- OP (open prostatectomie) = "gold standard" si >90g, mais avec **morbidité lourde**: risque chirurgical (hémorragie), incontinence post-op et dysfonction érectile → jusqu'à 40% !

Résultats après embolisation prostatique (n=34):

Mean prostate size: ↓ **135.1 g** → **91.9 g** at 3 months of follow-up (P < .0001).

Mean IPSS: ↓↓↓ **=** improved from **18.3 to 2.7** (P < .0001).

QoL index: ↓↓↓ **=** improved from **4.8 to 0.9** (P < .0001).

→ **Clinical success** at 3 months of follow-up was seen in **97.1%** of the patients, including 100% of patients with urinary retention.

→ Clinical improvement in LUTS (lower urinary tract symptoms) was achieved **without urinary incontinence, erectile or ejaculatory disorders, or significant blood loss.**

Prostatic artery embolization for the treatment of symptomatic benign prostatic hyperplasia in men ≥75 years: a prospective single-center study.

de Wang MQ, Wang Y, Yan JY, Yuan K, Zhang GD, Duan F, Li K

World J Urol. 2016 Jan

PURPOSE:

To compare the safety and efficacy of PAE for the treatment of benign prostatic hyperplasia (BPH) in men ≥75 years, who we defined as elderly, to those <75 years.

METHODS:

- 157 patients with LUTS due to BPH → PAE. (n = 52 ≥75y - n = 105 <75y).
- Follow-up: IPSS, QoL, peak urinary flow rate (Q_{max}), post-void residual volume (PVR), IIEF-5, PAS, prostate volume (PV), at 1, 3, 6, and every 6 months thereafter.

RESULTS:

More coexistent systemic diseases were identified in ≥75y than in <75y ($P < 0.05$).

Technical success rate of PAE was 90.4 % in ≥75y vs 95.2 % in <75y (p=0,06).

147p with follow-up with a mean of 20 months.

→Significant improvements in IPSS, QoL, Q_{max}, PV, PVR, and PSA in both groups after PAE.

→**No significant differences in the changes of IPSS, Q_{max}, PVR, PSA, and IIEF-5 between groups**

No major complications were noted.

CONCLUSION:

PAE could be used as an **effective, safe, and well tolerable method in the treatment of elderly** symptomatic BPH patients, similarly to younger patients, and it may play an important role in patients in whom medical therapy has failed, who are at high surgical and anesthetic risk or who refuse the standard surgical therapy.

Embolisation des fibromes utérins

- L'embolisation utérine est proposée depuis 1979
  - Saignement traumatique ou tumoral
  - Hémorragie du post-partum

- L'embolisation des **fibromes utérins** est proposée depuis 1989/**1995** (Lancet)

- **Essor récent** (USA, France, Allemagne…)
  1. Pression *économique* (assurances US)
     * USA: 350 000 hystérectomies/an pour fibrome
     * France: 60 000 env.
  2. Influence des résultats d'*études favorables*

(France : Femic , Ecosse : Rest trial , Nederland : Emmy trial , Canada : arrêtée car préférence embolisation…)

… retard +++ de la Belgique !

(lobby gynécologique)

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POLITICS

Rice 'resting comfortably' after surgery

Expected to return to work on Monday

Friday, November 19, 2004 Posted: 4:07 PM EST (2107 GMT)

WASHINGTON (CNN) -- National security adviser Condoleezza Rice, President Bush's nominee to be the next secretary of state, is doing well after successful surgery, Jim Wilkinson, deputy national security advisor, told CNN Friday.

Rice is "out of surgery and resting comfortably after undergoing a successful uterine fibroid embolization at Georgetown University Hospital this morning," he said. "The minimally invasive procedure took an hour and a half and was performed by interventional radiologist James Spies."

National security adviser Condoleezza Rice

NBC NIGHTLY NEWS WITH BRIAN WILLIAMS

sponsored by Cialis

Treating uterine fibroids without surgery

Alternative to hysterectomy often not discussed with patients

By Robert Bazell
Correspondent
NBC News
Updated: 12:59 p.m. ET Aug. 25, 2004

Laura Rogers, a 38-year-old allergist, suffered from uterine fibroids, a condition that strikes hundreds of thousands of women each year. Even though she is a physician, her own gynecologist did not tell her about a non-surgical treatment option.

"Frustr... azell ...ent

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The Frontier: Interventional Radiology

To fix a brain aneurysm, doctors had to saw open the skull. Now they can use a tiny catheter instead. The promise of IR.

Choice: An aneurysm under IR repair

Silent Treatment

Hysterectomy Alternative Goes Unmentioned to Many Women

Gynecologists Often Don't Cite Less-Invasive Procedure To Treat Fibroid Tumors

Bailiwick of Other Specialists

By Kevin Helliker And Lauren Etter

Hundreds of thousands of women go to gynecologists each year with a common condition known as uterine fibroid tumors. When it's severe, a majority of them get the same recommendation: a hysterectomy, or removal of the uterus.

In recent years, a less invasive procedure, known as uterine artery embolization or UAE, has been growing in popularity. Yet some patients, and even some gynecologists, say many gynecologists aren't telling their patients about the alternative.

A study presented at a medical conference in 2002 found that of 100 UAE patients at Chicago's Northwestern Memorial Hospital, 79 had learned about the procedure from a source other than a gynecologist. A survey by Yale University School of Medicine in 2000 found that 13 of 21 UAE patients had learned about the procedure from the Internet.

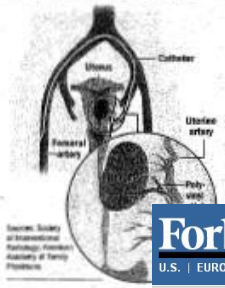
"It's sad," says Juergen Eisenmann, a gynecologist who is medical director of the South Florida Institute for Reproductive Medicine. "We do a disservice not to mention all the options."

In the large majority of cases, UAE brings relief from uterine fibroid tumors, and it has a much shorter recovery time than hysterectomies. These tumors aren't cancerous, but their growth can be debilitating. UAE involves cutting off the blood supply to the tumors, causing them to shrink.

Some gynecologists blame the failure

Delicate Remedy

Uterine artery embolization uses small polyvinyl particles to cut off the blood supply to fibroid tumors in the uterus.



that they provide, they are ... refer you" to another spe... Ruth Rhaber, a gynecologis... women's health at Kaiser ... Northern California, a large ... tenance organization.

Gynecologists in the U... about 200,000 hysterectomie... fibroids, meaning that $400 ... mal fees is at stake. Wom... have uterine problems almo... to, or are referred to, gynec... medical profession's expe... uterus.

UAE isn't a perfect solu... recommended for women ... have children. Studies have ... as many as 20% of patie... dergo it experience further ... toms after three years, and the proce... dure is too new for doctors to know ... whether that percentage will rise with

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Health

Nonsurgical Technique Effective Against Fibroids

-- Robert Preidt

FRIDAY, April 1 (HealthDay News) -- A nonsurgical treatment for uterine fibroids, known as uterine fibroid embolization (UFE), has a five-year success rate of 73 percent, according to a new study involving 182 women.

The New York Times nytimes.com

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November 23, 2004

Treating Troubling Fibroids Without Surgery

By LAWRENCE K. ALTMAN

Condoleezza Rice, the national security adviser, shares at least one thing with millions of other American women: she had fibroids, benign tumors in the uterus that required treatment.

Ms. Rice, the nominee for secretary of state, entered the hospital for an overnight stay last week to undergo a procedure - uterine artery embolization - that is rapidly becoming an alternative to major surgery for troublesome fibroids.

For most women, fibroids, consisting of muscle and fibrous tissue, are no bother. But for millions of others, fibroids can be so large (in some cases, the size of a melon) or so numerous that they cause discomfort, severe bleeding, anemia, urinary frequency and other symptoms.

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abcNEWS

Elyse Fine found an alternative to hysterectomy for treatment of her uterine fibroids.
ABC News

Conflicting Opinions

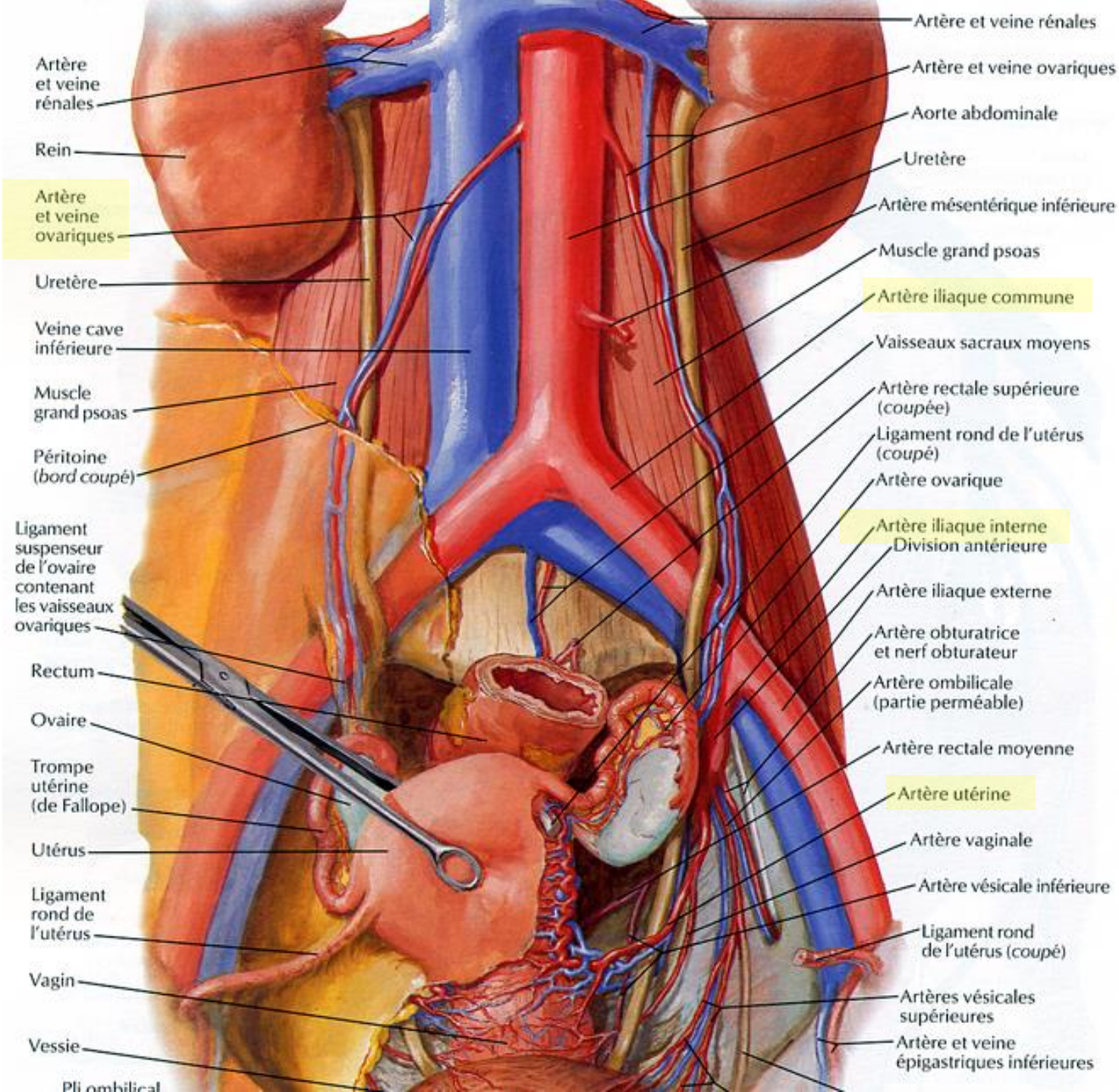
Is a Turf War Compromising Women's Medical Care?

ABCNEWS.com

Aug. 27, 2004— Elyse Fine's gynecologist told her she needed a hysterectomy to treat a uterine fibroid that was causing heavy bleeding. But Fine, a 44-year-old mother of two, did not agree.

Every minute of every day in this country a woman has her uterus removed in a hysterectomy. Most of the surgeries are done on women under age 50, and the vast majority are performed to treat fibroids, benign tumors that develop in the uterus. Fibroids occur in as many as 80 percent of women. While the growths can cause pain and heavy bleeding, most do not need treatment.

Non-Surgical Option


Artère et veine rénales
Artère et veine ovariques
Aorte abdominale
Uretère
Artère mésentérique inférieure
Muscle grand psoas
Artère iliaque commune
Vaisseaux sacraux moyens
Artère rectale supérieure (coupée)
Ligament rond de l'utérus (coupé)
Artère ovarique
Artère iliaque interne
Division antérieure
Artère iliaque externe
Artère obturatrice et nerf obturateur
Artère ombilicale (partie perméable)
Artère rectale moyenne
Artère utérine
Artère vaginale
Artère vésicale inférieure
Ligament rond de l'utérus (coupé)
Artères vésicales supérieures
Artère et veine épigastriques inférieures
Artère et veine rénales
Rein
Artère et veine ovariques
Uretère
Veine cave inférieure
Muscle grand psoas
Péritoine (bord coupé)
Ligament suspenseur de l'ovaire contenant les vaisseaux ovariques
Rectum
Ovaire
Trompe utérine (de Fallope)
Utérus
Ligament rond de l'utérus
Vagin
Vessie
Pli ombilical

Bilan Pré-Embolisation

- Sélection des patientes: **fibromes symptomatiques**
- Confirmation du diagnostic de fibrome
  - Nombre et taille
  - Localisation
  - Vascularisation
- Eliminer un cancer associé !
- Eliminer une infection gynécologique ou annexielle évolutive

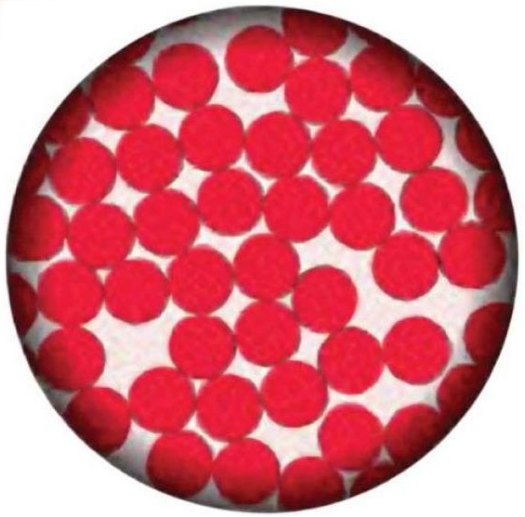
- Prévention du spasme artériel:
  - ✓ Arrêt des analogues de la Gn-RH 3 à 4 mois avant la procédure
  - ✓ Arrêt des progestatifs 4 à 6 semaines avant la procédure

Pelage JP, et al. Radiology 1999;210:573-5

- **Contre indications:**
  - ✓ **Fibrome sous-séreux pédiculé**
  - ✓ Pathologies associées (cancer, infection)
  - ✓ Désir de grossesse **AVEC** alternative chirurgicale simple (myomectomie) ?

TECHNIQUE

- Abord artériel fémoral commun unilatéral (rarement bilatéral) – intro 4F (1,5mm)
- Cathétérisme A.iliaques internes puis micro-cathétérisme A.utérines.
- Matériel d'embolisation:
  - ✓ Particule de PVA (>500 µm Ø)
  - ✓ **Micro-sphères (500-700µm Ø)**
- Système de fermeture du point de ponction artériel

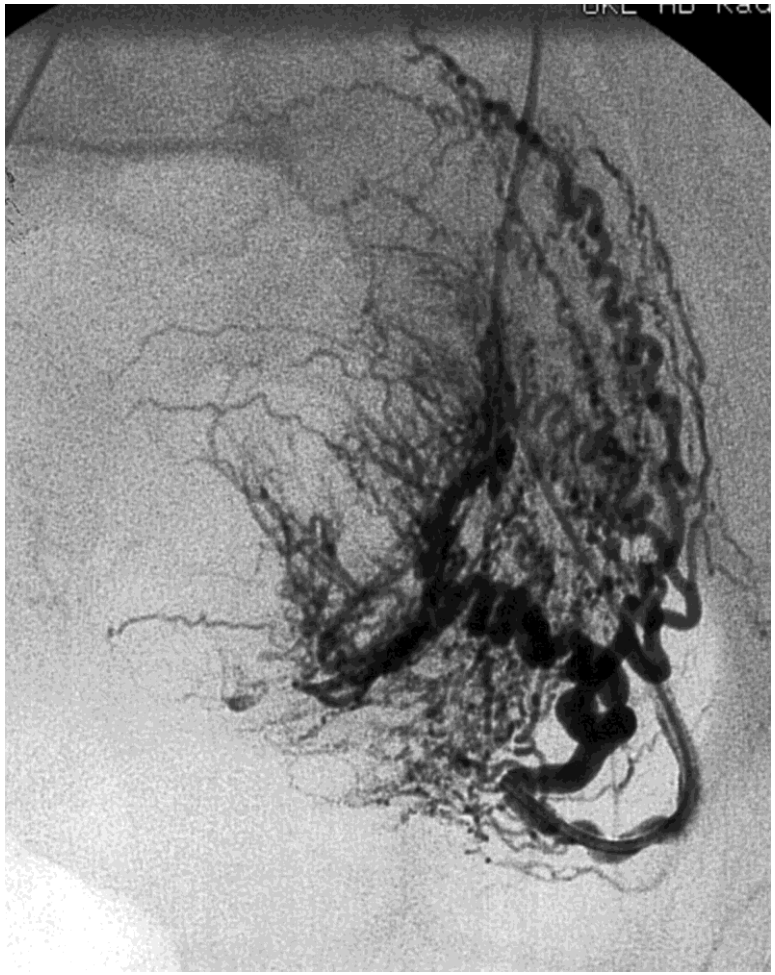


ANALGESIE

- Antidouleurs IV avant et pendant la procédure +/- anxiolytique

- Pendant la procédure: selon souhait patiente
  - ✓ **Pompe PCA**
  - ✓ Péridurale
  - ✓ Anesthésie générale

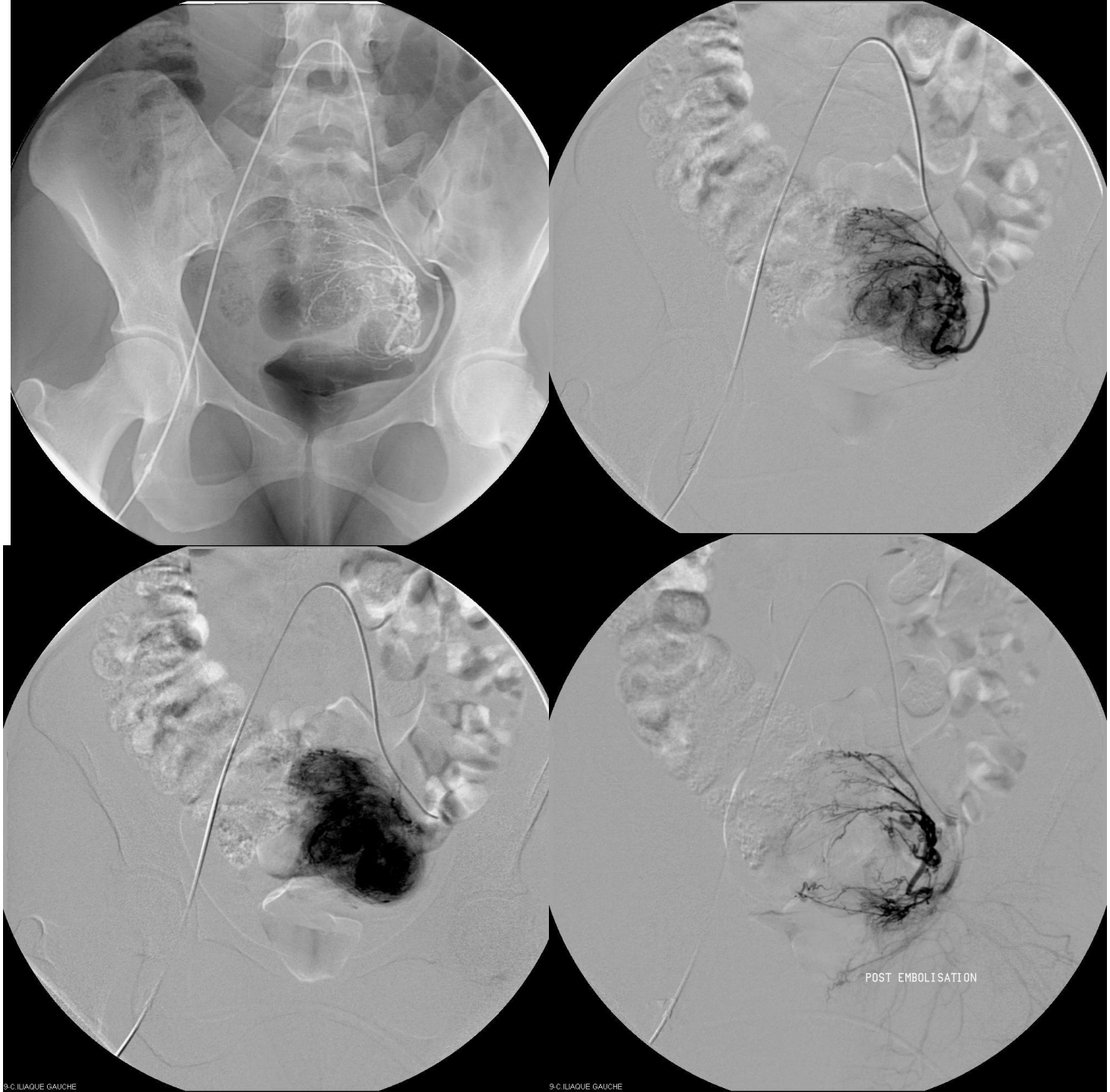
- **Après la procédure:**
  - ✓ **AINS**
  - ✓ Paracétamol +/- morphiniques



µKT sélectif de l’artère uterine G

Aspect après embolisation

- ✓ Disparition des branches distales
- ✓ Réduction du flux dans l’artère utérine
- ✓ Branches cervico-vaginales perméables
- ✓ Flux ovarien préservé (←)


POST EMBOLISATION
9-C.ILIAQUE GAUCHE
9-C.ILIAQUE GAUCHE


9-C ILIAQUE DROITE


POST EMBOLISATION
9-C ILIAQUE DROITE

RESULTATS

- **Disparition dans > 85% des cas des symptômes, à 6 mois :**
  - ✓ Saignements
  - ✓ Douleur pelvienne
  - ✓ **Amélioration de la qualité de vie**

- Diminution de la taille des fibromes (IRM de contrôle à 6 mois)
  - ✓ volume utérin - 50%
  - ✓ volume des fibromes - 60-70%

- Absence d'amélioration clinique après embolisation: 10%
  - ✓ **Echecs techniques: 1 à 4%**
  - ✓ **Gros fibromes > 10cm**
  - ✓ Adénomyose associée
  - ✓ Leiomyosarcome
  - ✓ Vascularisation extra-utérine (artères ovariennes,…)

Complications Graves de l'Embolisation

- Infection sévère <1-2%

- Aménorrhée secondaire 2-5%

  dont **Aménorrhée définitive** **2%**

→ Plus fréquent chez les femmes de plus de 45 ans

→ Amélioration technique: particules plus grosses (>500 µm) et mieux calibrées

- Expulsion de fibrome 1-5%

- Hystérectomie en Urgence 5,5/1000
  - Pour infection (et/ou nécrose)
  - Dans le premier mois après l'embolisation
  - Risque majoré avec les fibromes pédiculés

Douleurs Post-Embolisation

- **Quasi-constantes**
  - ✓ Douleurs dorsales, crampes abdominales
  - ✓ Nausées et vomissements
  - ✓ Fièvre
  - ✓ Saignements

- Sévères dans 50% des cas

- Précoces, maximum d'intensité **12-24 heures après l'embolisation**
- Persistent **pendant 3-7 jours**

- Traitement intra-veineux durant l'hospitalisation
- Relais per os à la sortie (**antalgiques, AINS**)

UFE BENEFITS COMPARED TO SURGERY

	UFE[a]		Hysterectomy[a]	Myomectomy[b]
Minor complications[c]	28.4%	<<	52%	71.7%
Major complications[c]	3.9%[a] 4.0%[b]		12%	1.7%

	Embolisation		Hystérectomie	Δ
Hospitalisation (jours)	1.71 ± 1.59	<<	5.85 ± 2.52	4.14 *P* < .001
Retour à une activité normale (jours)	9.50 ± 7.21	<<	36.18 ± 20.47	26.68 *P* < .001

Pinto-Pabon. Radiology 2003;226: 425-431

a) Spies, J.B., et al. (March 2004). Outcome of uterine embolization and hysterectomy for leiomyomas: Results of a multicenter study. *American Journal of Obstetrics and Gynecology, 191,* 22-31.

b) Goodwin, S.C., et al. (January 2006). Uterine artery embolization versus myomectomy: a multicenter comparative study. *Fertility and Sterility, 85,* 14-21.

c) Spies, J.B., et al. (November 2002). Complication After Uterine Artery Embolization for Leiomyomas. *Obstetrics and Gynecology, 100,* 873-880.
- Minor complications include Society of Interventional Radiology complication classification levels A & B
- Major complications include Society of Interventional Radiology complication classification levels C or higher

Merci pour votre attention !

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