Ablation des masses extraténaux

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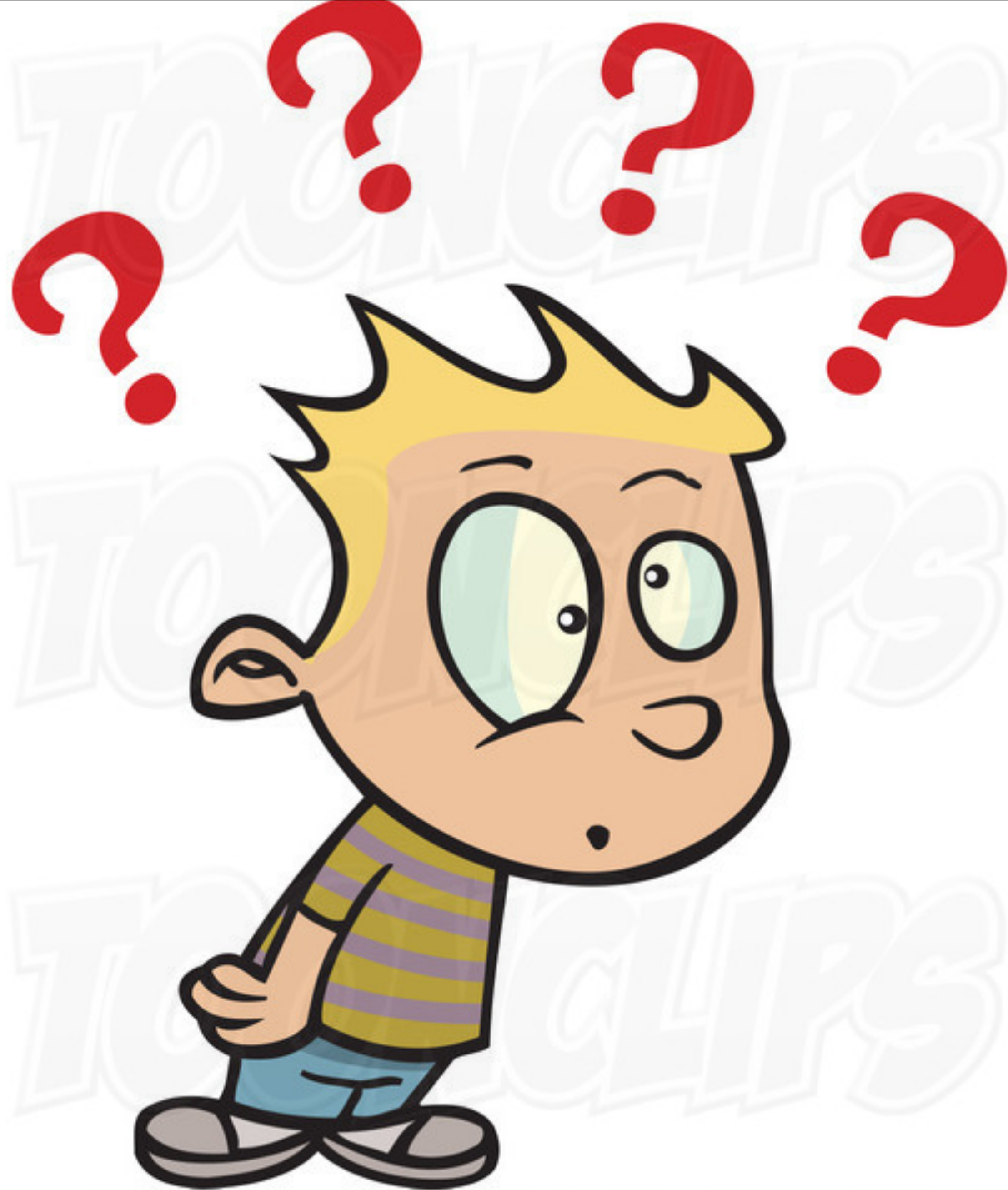
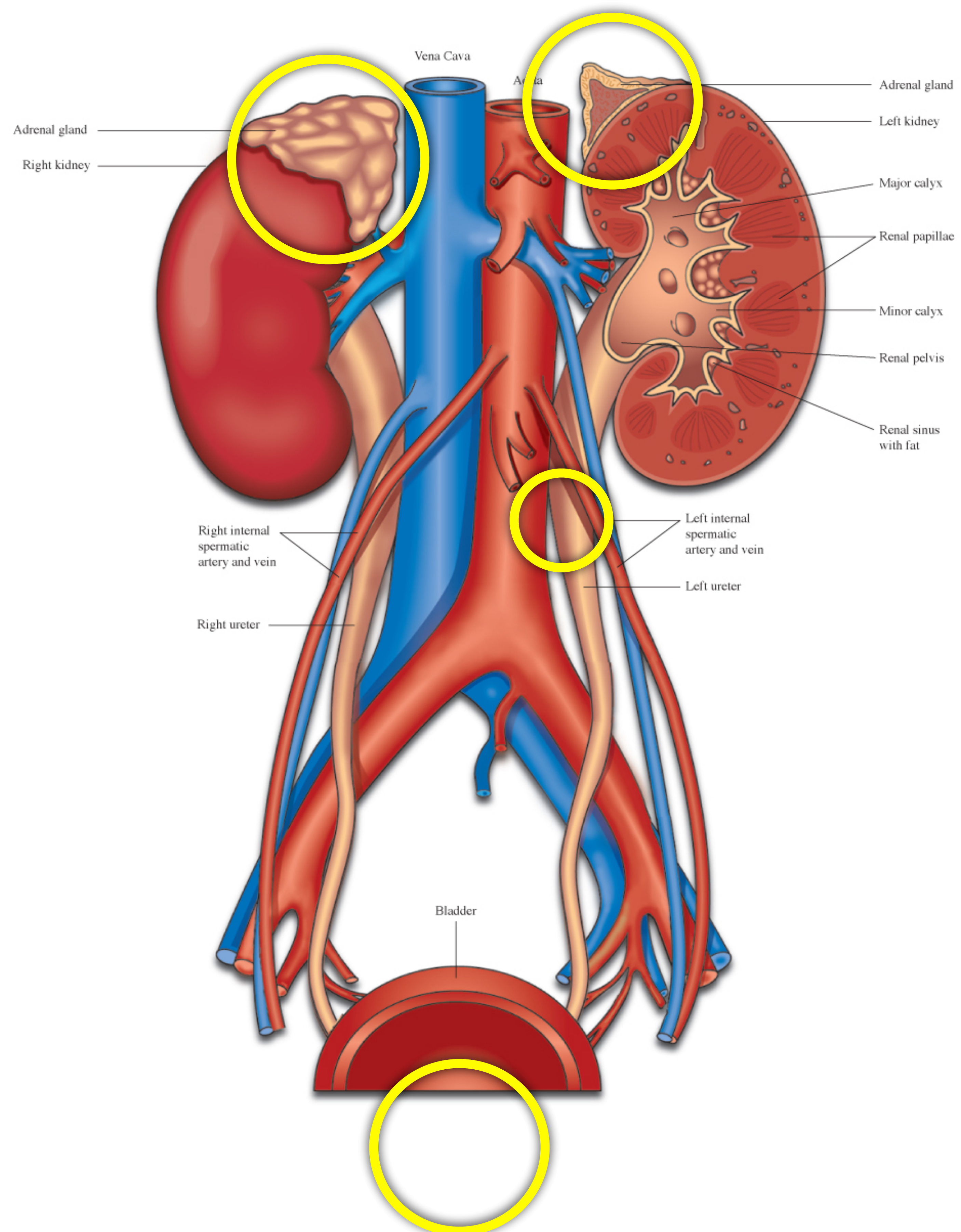
Extrarenal ???



je suis confus !!!!


Vena Cava
Aorta
Adrenal gland
Right kidney
Adrenal gland
Left kidney
Major calyx
Renal papillae
Minor calyx
Renal pelvis
Renal sinus with fat
Right internal spermatic artery and vein
Left internal spermatic artery and vein
Left ureter
Right ureter
Bladder

Introduction

- Adrenal lesions are frequently encountered - 4-6% of all imaging studies
- Can be non functioning adenomas, functioning adenomas or neoplasms - primary or secondary
- Surgical resection is the mainstay of therapy in primary tumours and functioning adenomas
- Resection of isolated metastasis offers survival benefit
- Co-morbid issues may make surgery difficult

Adrenal gland ablation

Size = generally < 5 cm

- Isolated adrenal metastasis
- Adrenal metastasis from RCC
- Primary adrenal carcinoma, including recurrence
- Conn’s adenoma and other functioning adenomas like cortisol secreting
- Pheochromocytoma

Techniques

- Radiofrequency ablation
- Alcohol ablation
- Cryoablation
- Microwave ablation

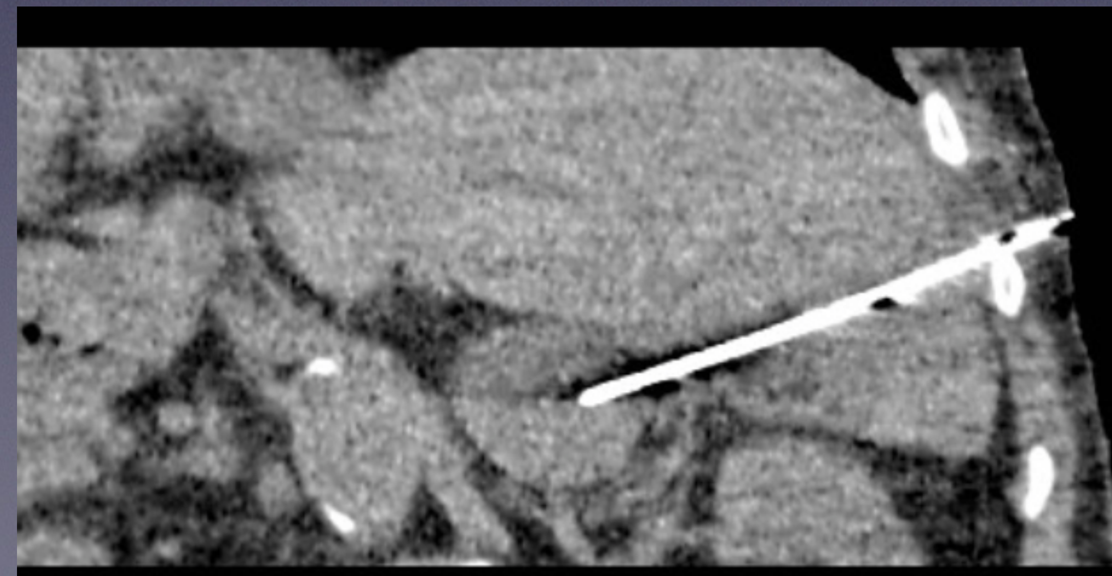
Patient preparation and planning

- Pre procedure adrenergic blockage to prevent catecholamine surge
- Anaesthetic check up. Adequate volume correction
- Propensity to bleed

Variable	With α-Blocker Premedication (*n* = 7)*	Without α-Blocker Premedication (*n* = 5)*	*P* Value
Δ SBP	67 (38, 122)	114 (74, 179)	.034
Δ DBP	24 (−2. 64)	45 (26, 104)	.07
Δ PP	44 (14, 67)	65 (38, 75)	.17
Δ MAP	38 (12, 83)	68 (42, 129)	.06

Strategies to target the adrenal gland

- Angled gantry
- Prone caudo cranial access
- Transhepatic access
- Ipsilateral decubitus position
- Hydrodissection
- Pre op embolisation



AJR Am J Roentgenol. 2016 Aug 4:W1-W7. [Epub ahead of print]

Assessment of Early Treatment Response With DWI After CT-Guided Radiofrequency Ablation of Functioning Adrenal Adenomas.

Nunes TF[1], Szejnfeld D[1], Szejnfeld J[1], Kater CE[2], Faintuch S[3], Castro CH[4], Goldman SM[1].

Technical success defined as :

normalisation of hormones
Complete necrosis of adrenal lesion

16/17 lesions complete success

Radiol Med. 2016 Oct;121(10):811-9. doi: 10.1007/s11547-016-0662-1. Epub 2016 Jun 14.

Comparison of radiofrequency ablation versus laparoscopic adrenalectomy for benign aldosterone-producing adenoma.

Yang MH[1], Tyan YS[2], Huang YH[3,4], Wang SC[1], Chen SL[5,6].

Treatment success: 100% in RFA group vs 94.5% in LA group

Less pain and hospital stay in the RFA group

J Vasc Interv Radiol. 2016 Jul;27(7):961-7. doi: 10.1016/j.jvir.2016.03.042. Epub 2016 May 27.

Clinical Outcomes following Percutaneous Radiofrequency Ablation of Unilateral Aldosterone-Producing Adenoma: Comparison with Adrenalectomy.

Sarwar A[1], Brook OR[2], Vaidya A[2], Sacks AC[3], Sacks BA[4], Goldberg SN[4], Ahmed M[4], Faintuch S[4].

	RFA	Adrenalectomy	p value
Number	12	32	
Size	1.8cm	1.9 cm	NS
BP	145/94	144/89	NS
No of medications	3.0	2.7	NS
Serum pottasium	3.2	3.5	NS

	RFA	Adrenalectomy	p value
BP	129/81	128/85	NS
No of medications ↓	58%	40%	NS
Serum pottasium	4.2	4.3	NS
Length of stay	0.6 d	1.7d	NS
Complications	0%	15%	$p<0.05$
Blood loss	1.2 ml	40 ml	$p<0.05$

Summary of studies of functioning adenomas

Author	Year	Type of ablation	Tumor no.	Patient no.	Type of functioning tumor	Tumor size (cm)	Resolution of Biochemical marker	Follow-up	Residual or recurrence	Complication
Arima et al[7]	2007	RFA	4	4	Cortisol-secreting adenoma	2.7 ± 0.6 (2.0–3.5)	All patients (100%)	33 mo (20–46 mo)	25% (¼) after first ablation, 0% after second ablation	Pneumothorax ($n = 1$)
Xiao et al[9]	2008	PAI, PEI	15	12	Aldosteronoma ($n = 11$), cortisol-secreting adenoma ($n = 6$)	2.8 ± 0.7 (2.1–4.4)	All patients (100%)	2 y	0%	No
Mendiratta-Lala et al[5]	2010	RFA	13	13	Aldosteronoma ($n = 10$), cortisol-secreting adenoma ($n = 1$), testosterone-secreting adenoma ($n = 1$), pheochromocytoma ($n = 1$)	< 3.2 (1.0–3.2)	All patients (100%)	21.2 mo (6–60 mo)	0%	Small pneumothorax ($n = 1$) Limited hemothorax ($n = 1$) Self-limited procedural hypertension ($n = 2$)
Liu et al[6]	2010	RFA	24	24	Aldosteronoma	1.6 (0.4–2.5)	23 of 24 patients (95.8%)	21.2 mo (6.1–38.5 mo)	0%	Small pneumothorax ($n = 1$) Retroperitoneal hematoma ($n = 3$)

Summary of studies of neoplasms

Author	Year	Type of ablation	Tumor no.	Patient no.	Type of tumor	Tumor size	Follow-up	Local residual or recurrence rate	Complication	Prognosis
Shibata et al[17]	2000	PEI	9	7	Metastasis from HCC	3.8 cm (2.5–6.0 cm)	19.3 mo (6–36 mo)	33% (3/9)	Adrenal insufficiency ($n = 1$)	3 patients (42.9%) died at 8–36 mo 4 patients (57.1%) are alive at 6–28 mo
Wood et al[12]	2003	RFA	15	8	Primary adrenal ca. and adrenal ca. metastasis to other sites	4.3 cm (1.5–9.0 cm)	10.3 mo (1–20 mo)	20% (3/15)	No	NA
Mayo-Smith and Dupuy[8]	2004	RFA	11	10	Metastasis from lung ca. ($n = 5$), RCC ($n = 4$), melanoma ($n = 2$)	3.9 cm (1–8 cm)	11.2 mo (1–46 mo)	18.2% (2/11)	Small hematoma ($n = 1$) Adrenal insufficiency ($n = 1$)	6 of 10 patients (60%) died at 3–16 months
Xiao et al[9]	2008	ACI, PEI	20	14	Metastasis from lung ca. ($n = 9$), liver ca ($n = 6$), gastric ca. ($n = 3$), RCC ($n = 2$)	5.9 cm (3.1–8.6 cm)	24 mo	70% (14/20)	No	5 of 14 patients (35.7%) died at 2 years
Welch et al[19]	2011	CA	12	12	Metastasis from RCC ($n = 6$), HCC ($n = 1$), lung ca. ($n = 2$), others ($n = 3$)	2.7 cm (1.2–4.5 cm)	18 mo (3–55 mo)	9.1% (1/11)	Hypertensive crisis ($n = 6$)	NA
Yamakado et al[14]	2009	TACE + RFA	8	6	Metastasis from HCC	5.2 ± 1.8 cm (3.5–8.0 cm)	37.7 mo (4.0–70.9 mo)	25% (2/8)	No	Median survival time, 24.9 months
Li et al[18]	2011	MW	10	9	Primary adrenal ca. ($n = 1$), adrenal metastasis ($n = 9$)	3.8 cm (2.1–6.1 cm)	11.3 (3–37)	10% after first ablation, 0% after second ablation	Hypertensive crisis ($n = 1$)	NA
Wolf et al[10]	2012	RFA, MW	20	19	Metastasis from RCC ($n = 7$), lung ca. ($n = 8$), HCC ($n = 1$), others ($n = 4$)	4.2 cm (2–8 cm)	14.1 mo (1–67 mo)	15% after first ablation, 5% after reablation	Hypertensive crisis ($n = 2$)	16 of 19 patients (84.2%) died during follow-up

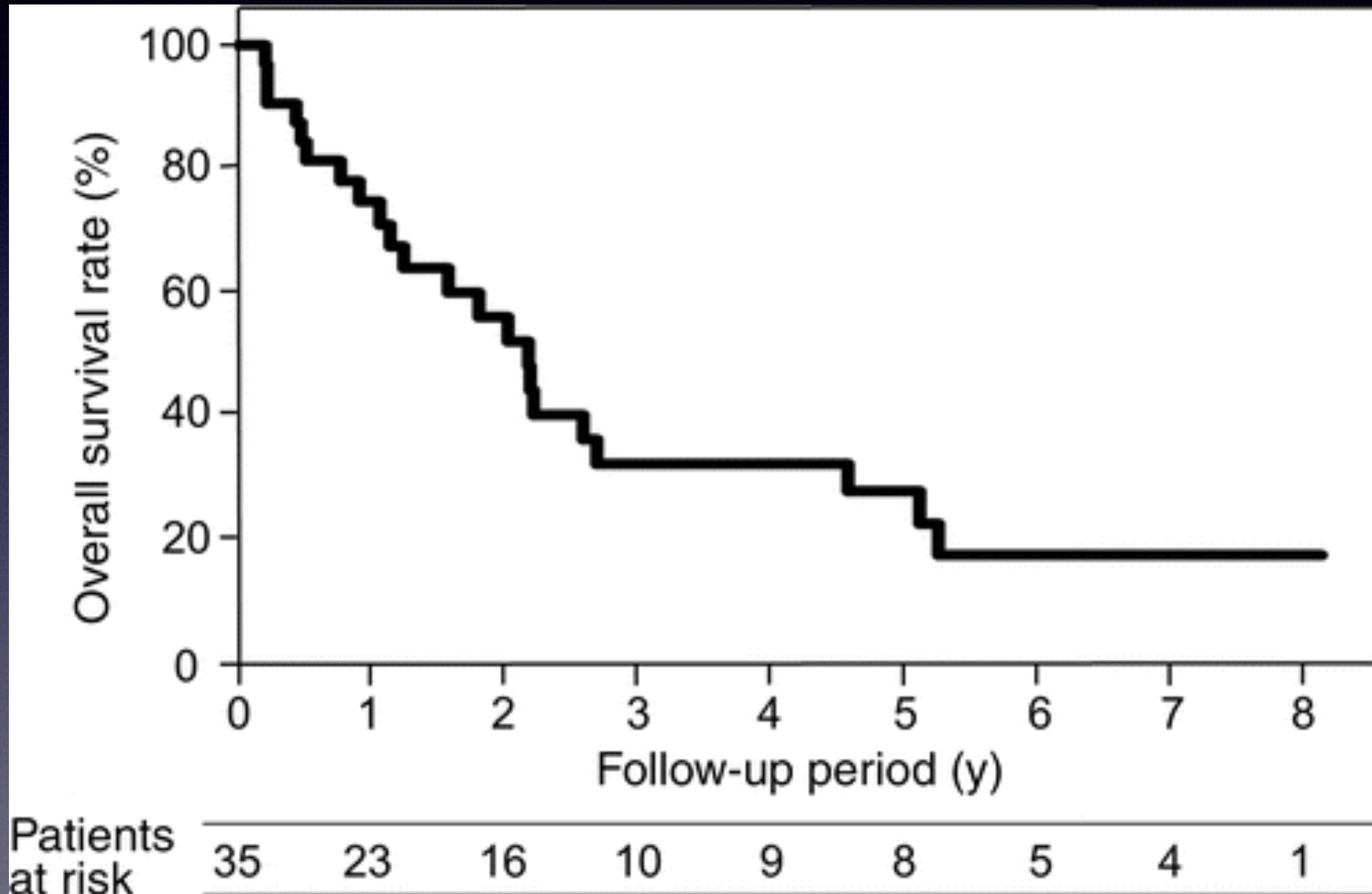
Urology. 2009 Dec;74(6):1341-3. doi: 10.1016/j.urology.2009.06.058. Epub 2009 Sep 25.

Radio-frequency ablation of solitary adrenal gland metastasis from renal cell carcinoma.

Mouracade P[1], Dettloff H, Schneider M, Debras B, Jung JL.

Can be very delayed - 5 years: excellent local control rates

Treating metastasis

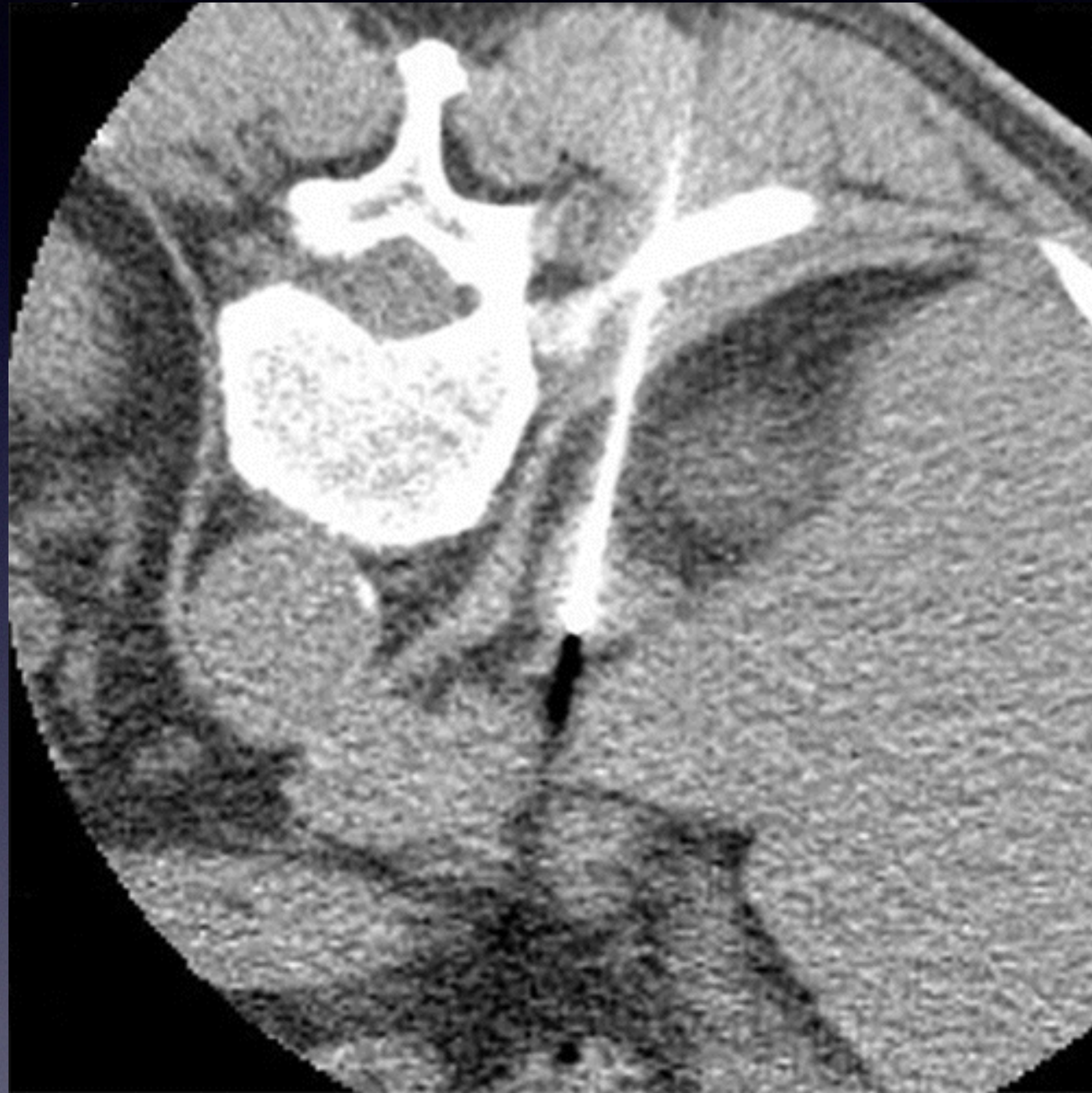


J Vasc Interv Radiol. 2016 Mar;27(3):395-402. doi: 10.1016/j.jvir.2015.11.034. Epub 2015 Dec 24.

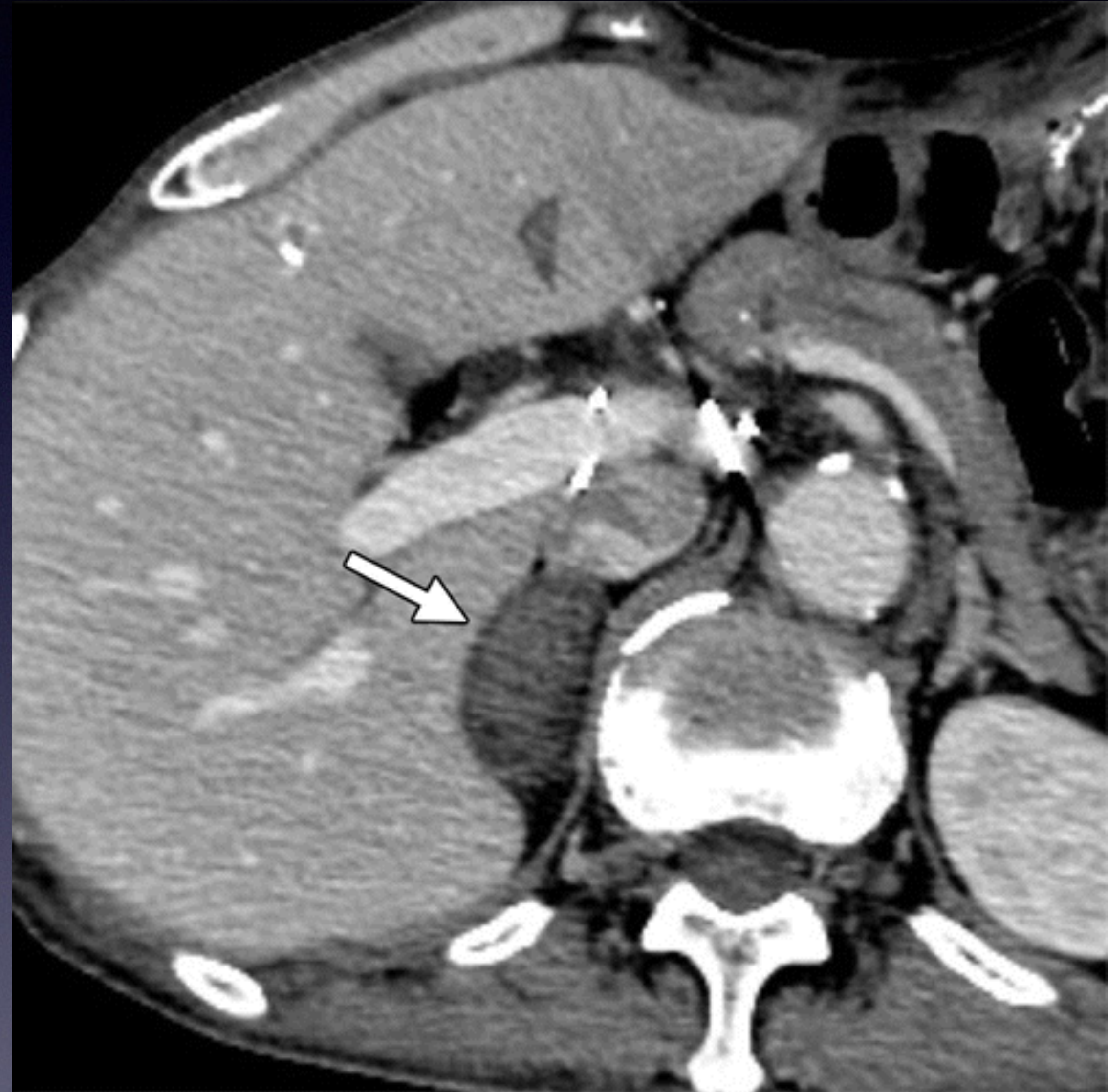
Catecholamine Surge during Image-Guided Ablation of Adrenal Gland Metastases: Predictors, Consequences, and Recommendations for Management.

Fintelmann FJ[1], Tuncali K[2], Puchner S[3], Gervais DA[3], Thabet A[3], Shyn PB[2], Arellano RS[3], Tatli S[2], Mueller PR[3], Silverman SG[2], Uppot RN[3].

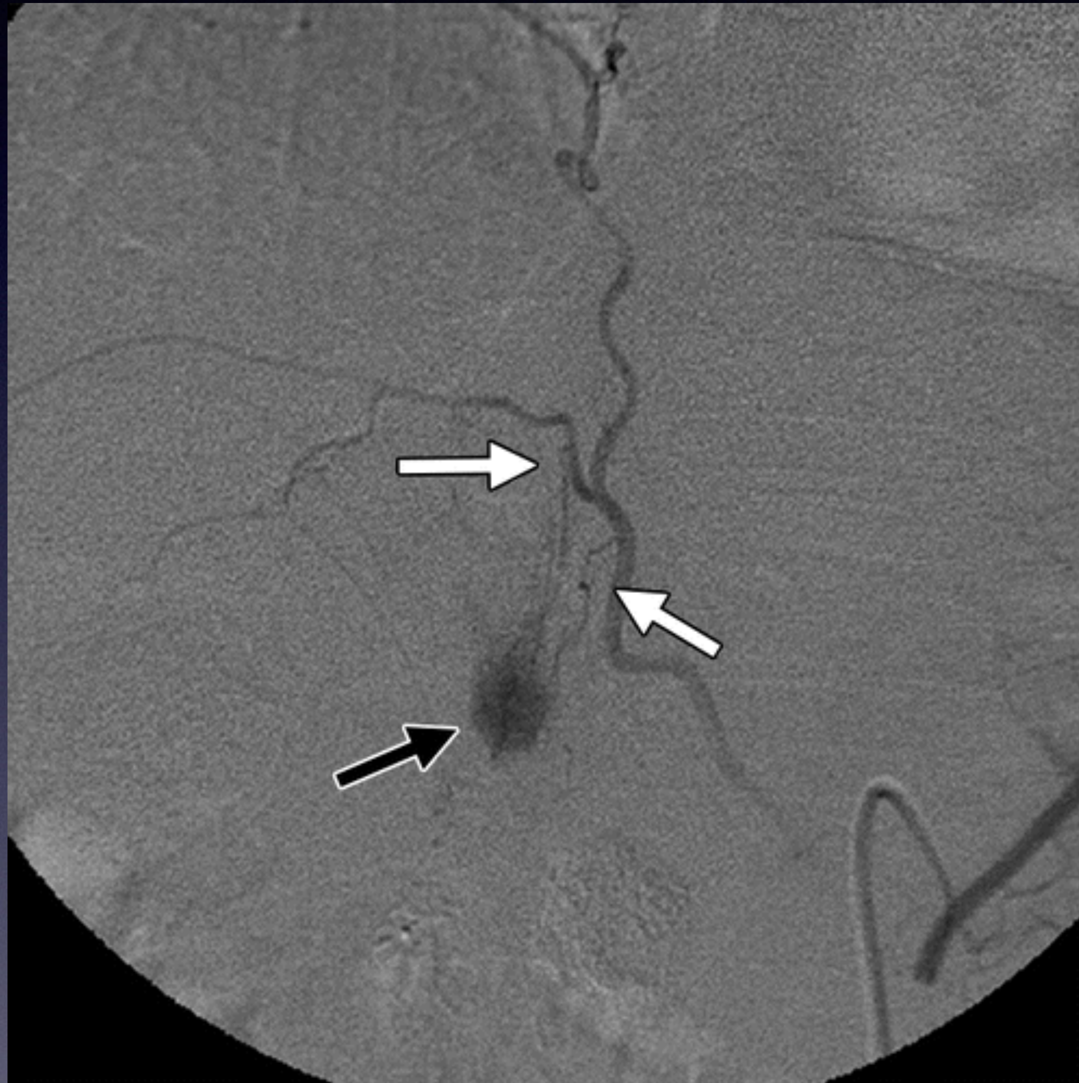
- Hypertensive crisis in 43%
- More in smaller tumours, those with functioning adrenal tissue



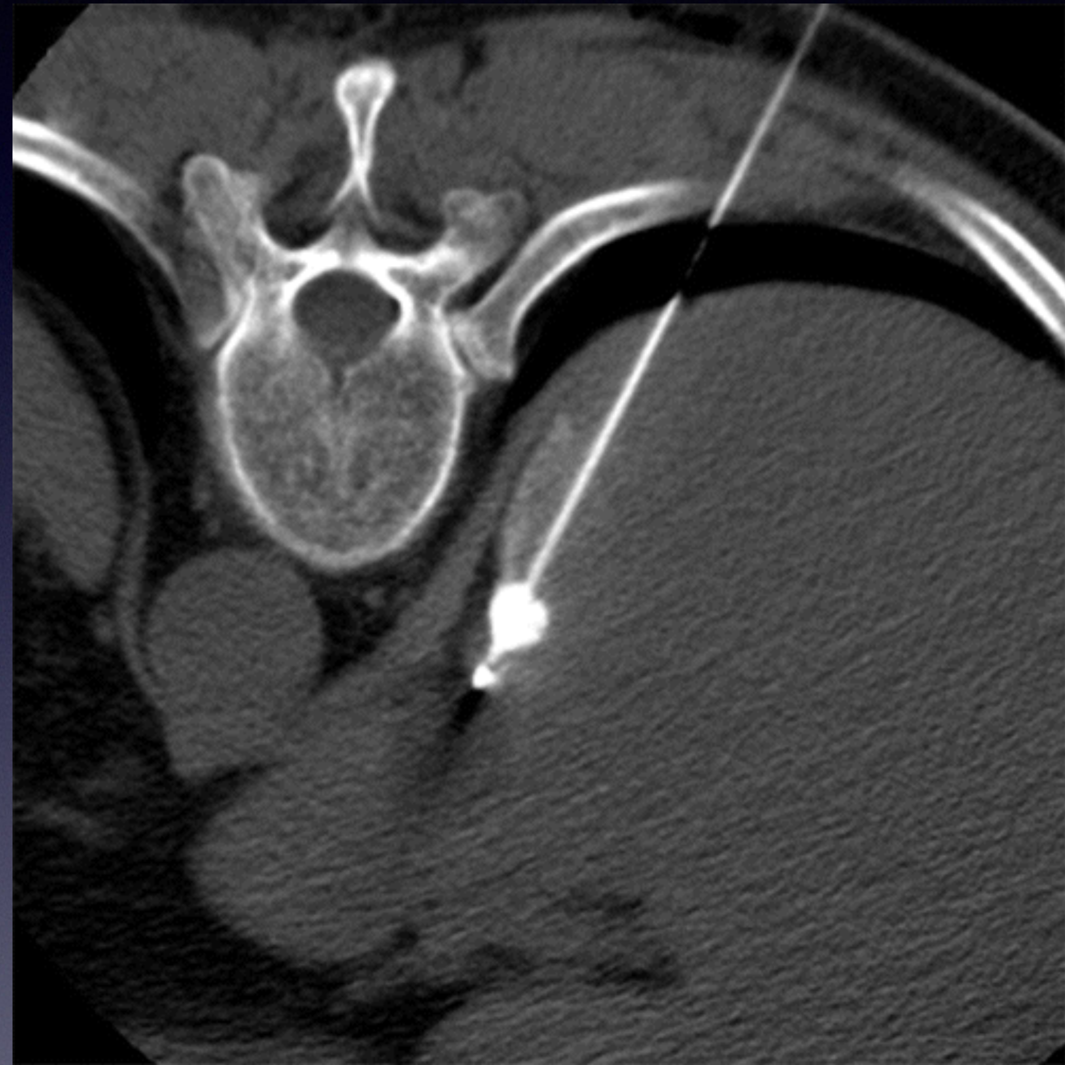
Post curative lobectomy for lung cancer

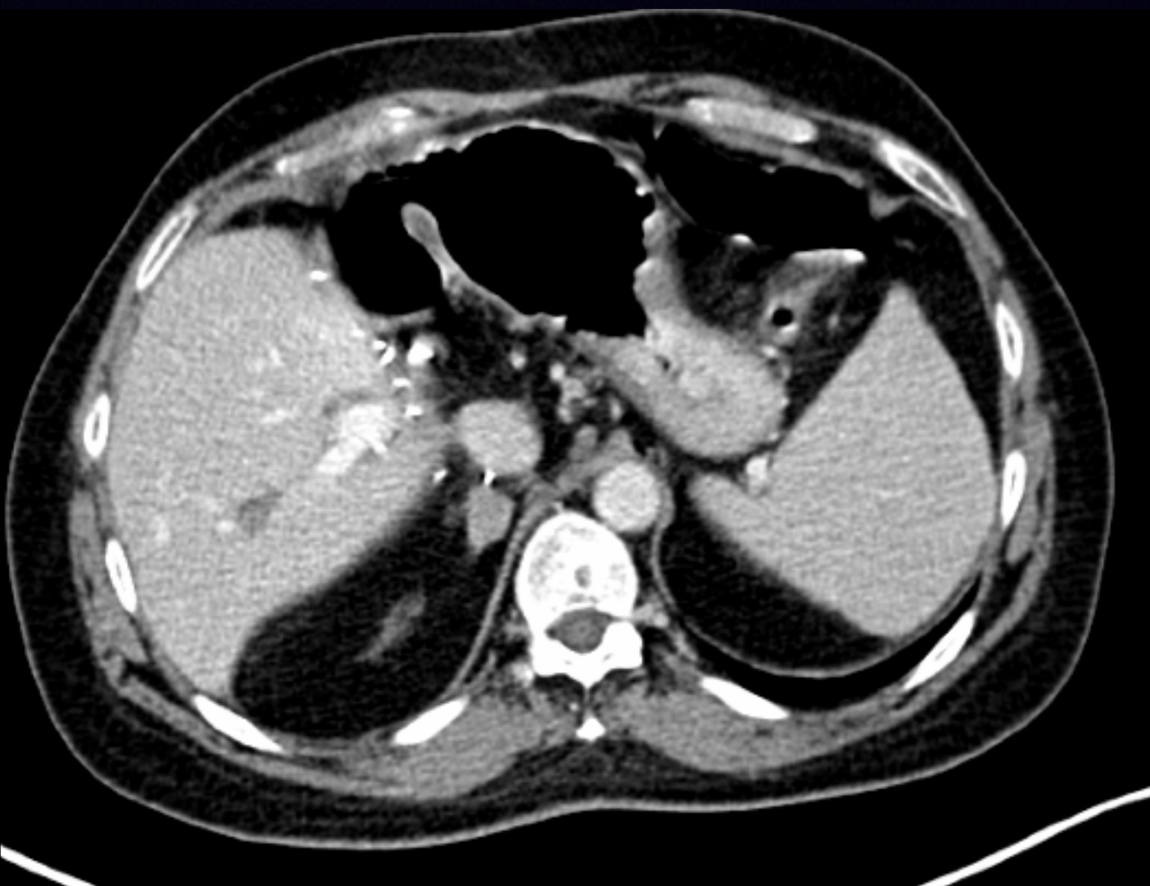


4 year follow up

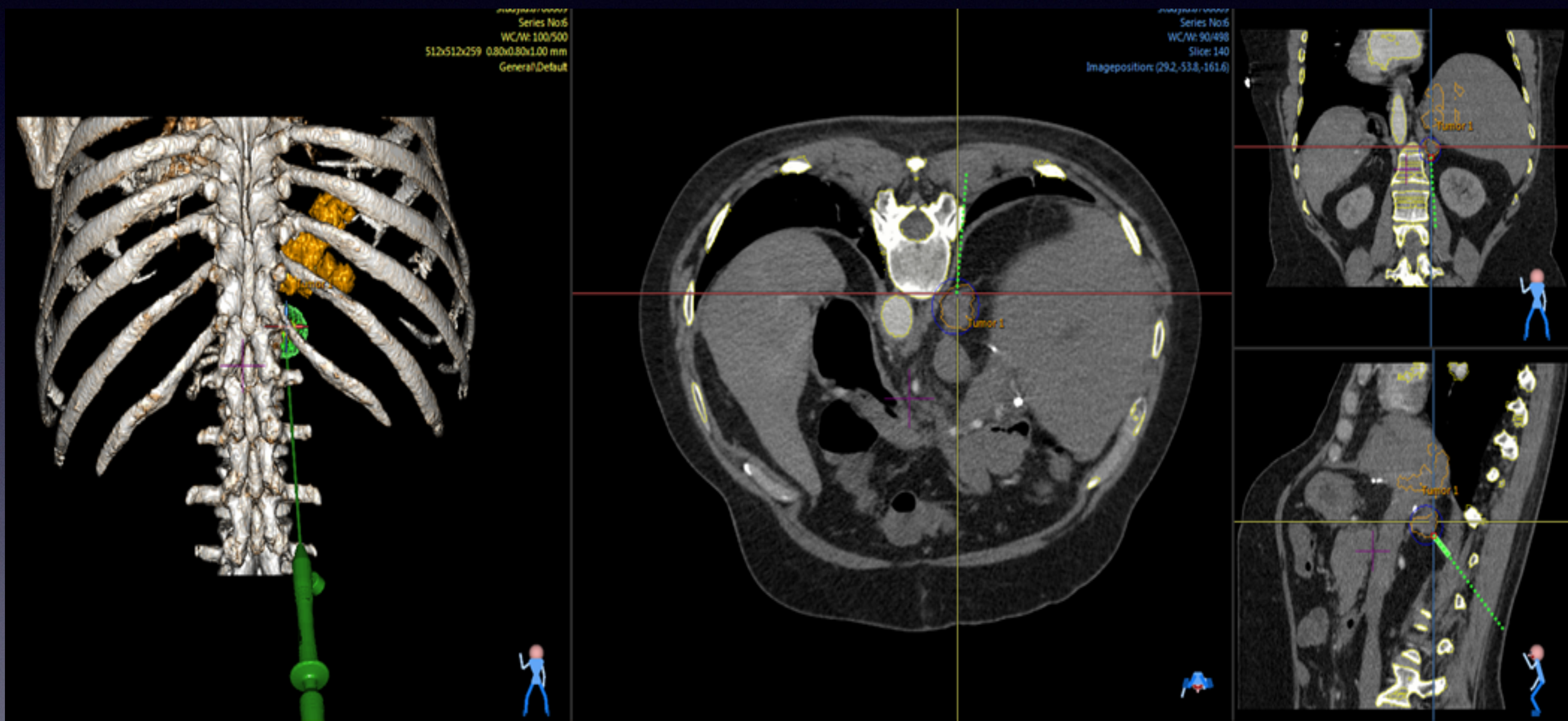


For hypervascular tumours

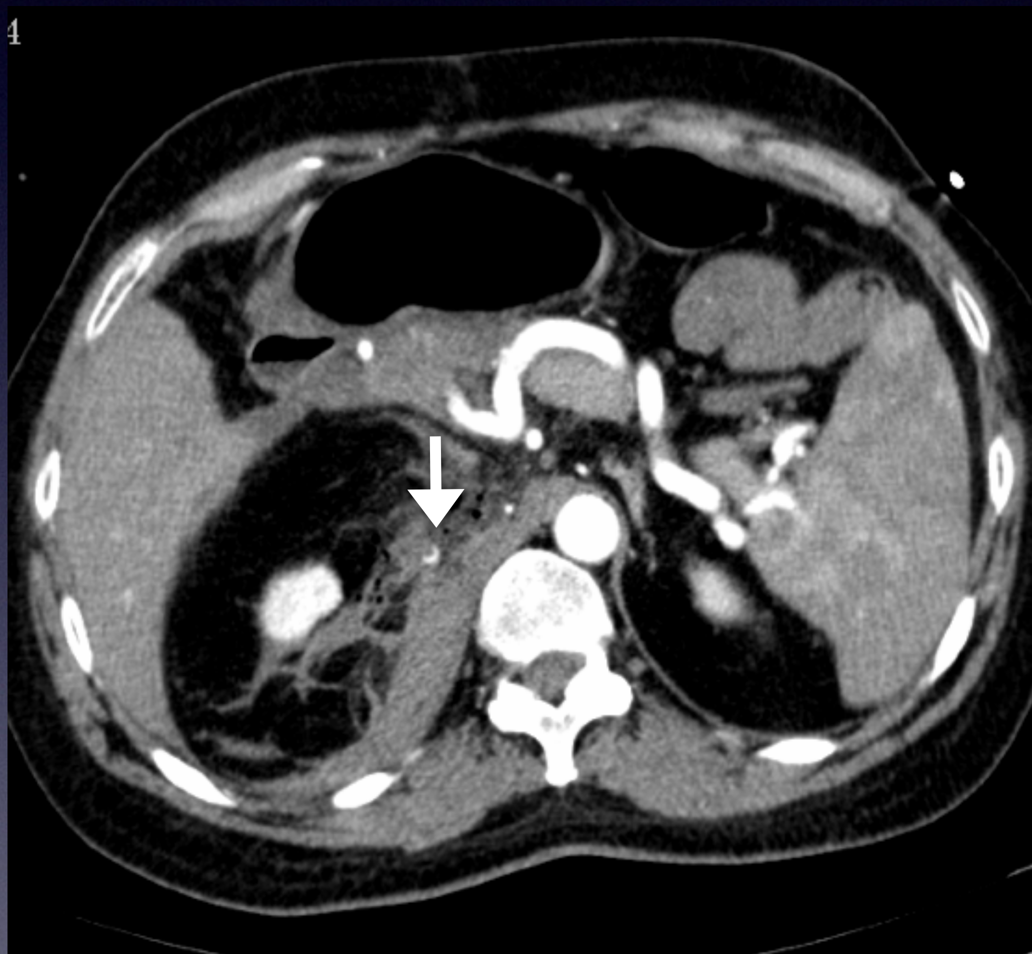




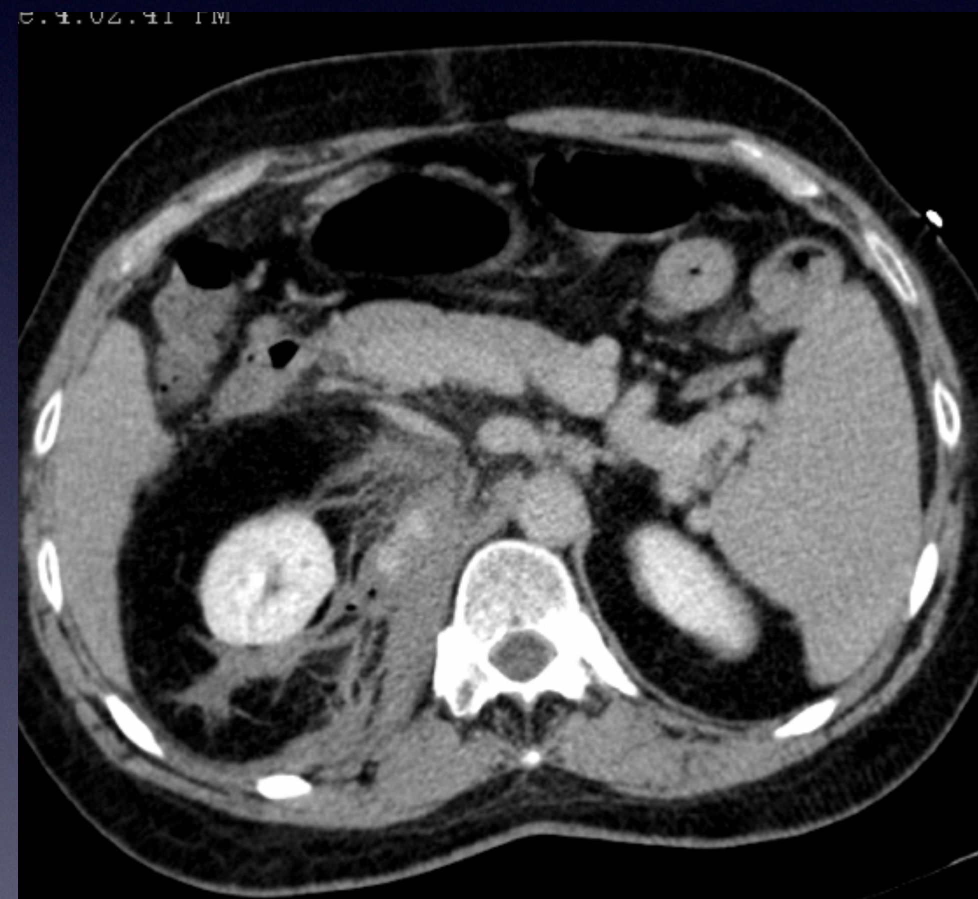
64 year old man with HCC
Slow growing adrenal lesion



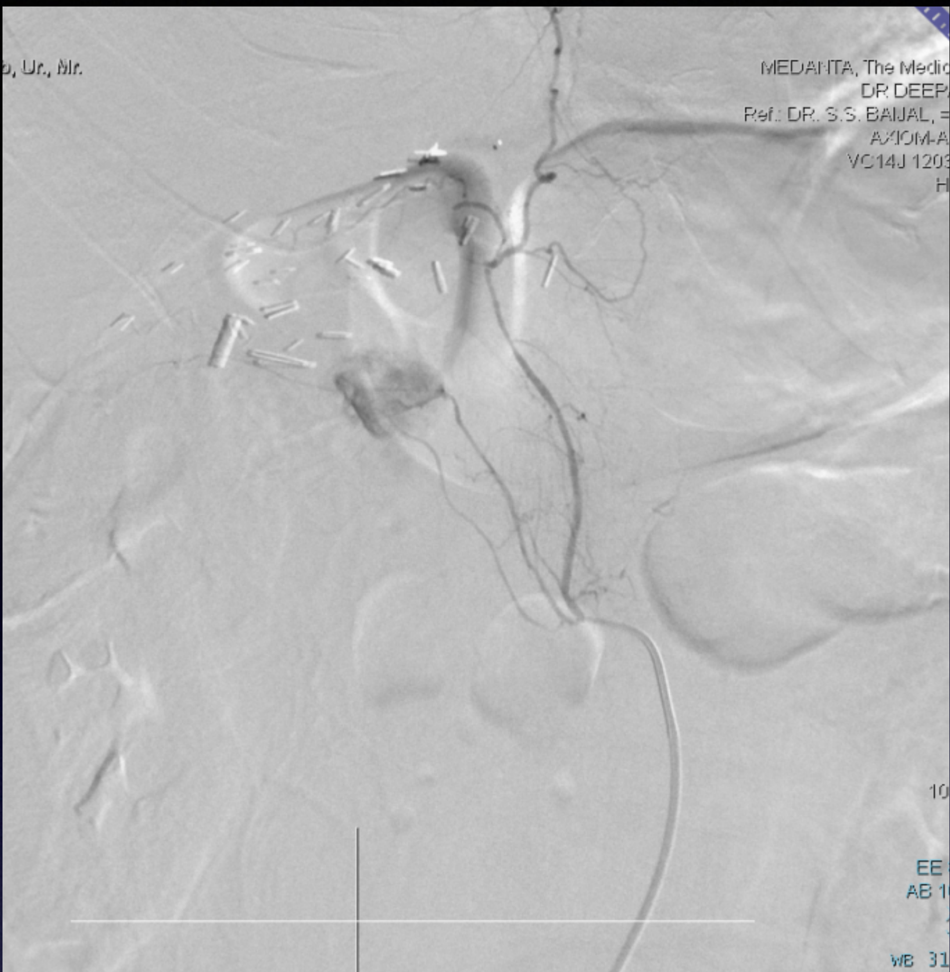
MAXIO robotic guidance



Post ablation arterial



Post ablation venous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DR DEEP
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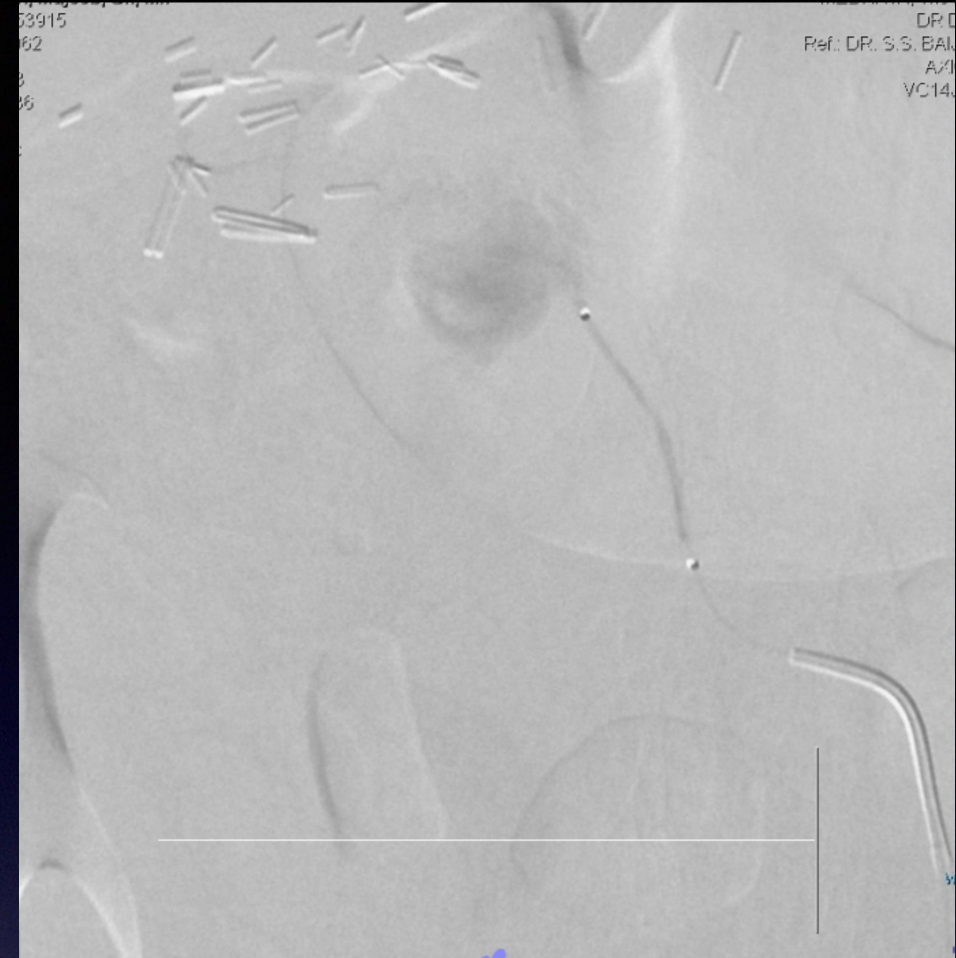
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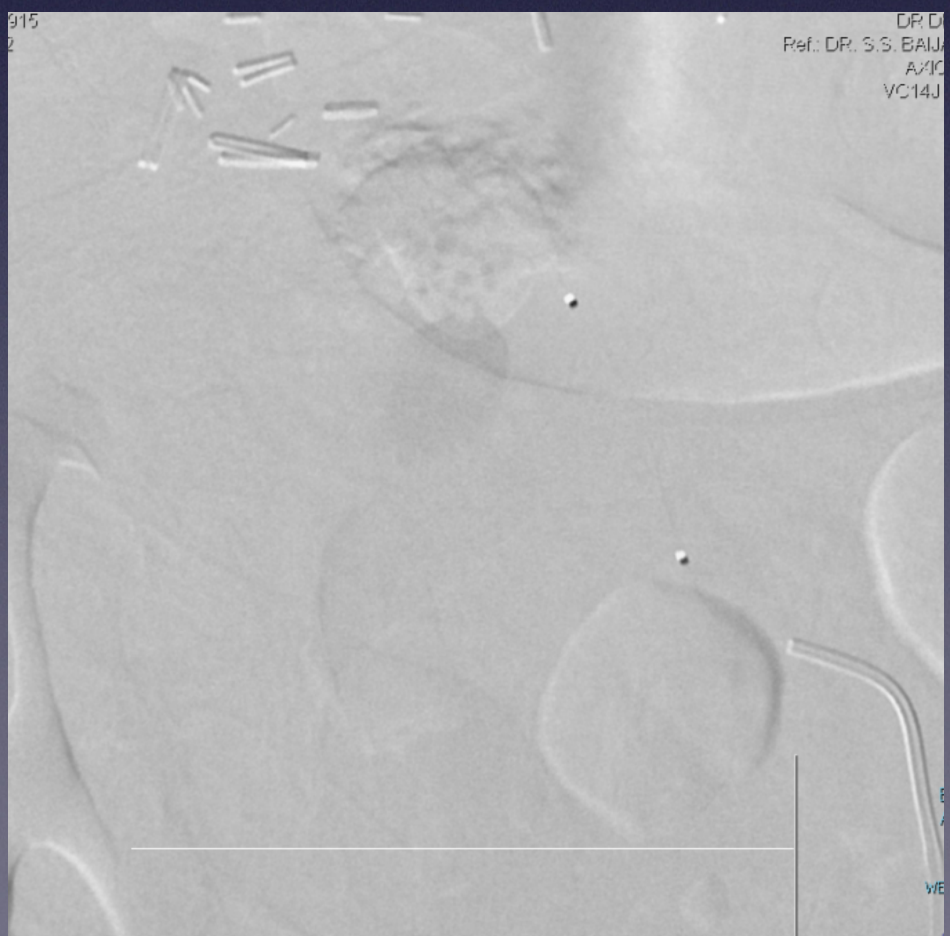
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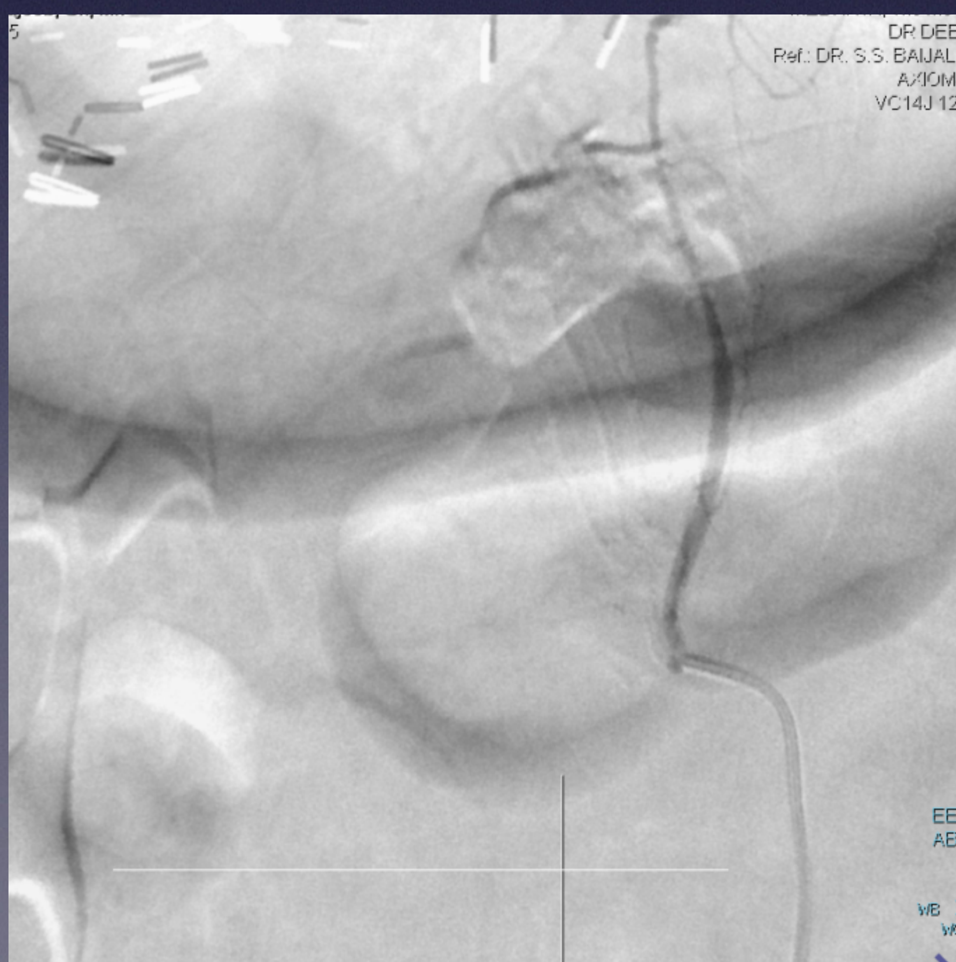
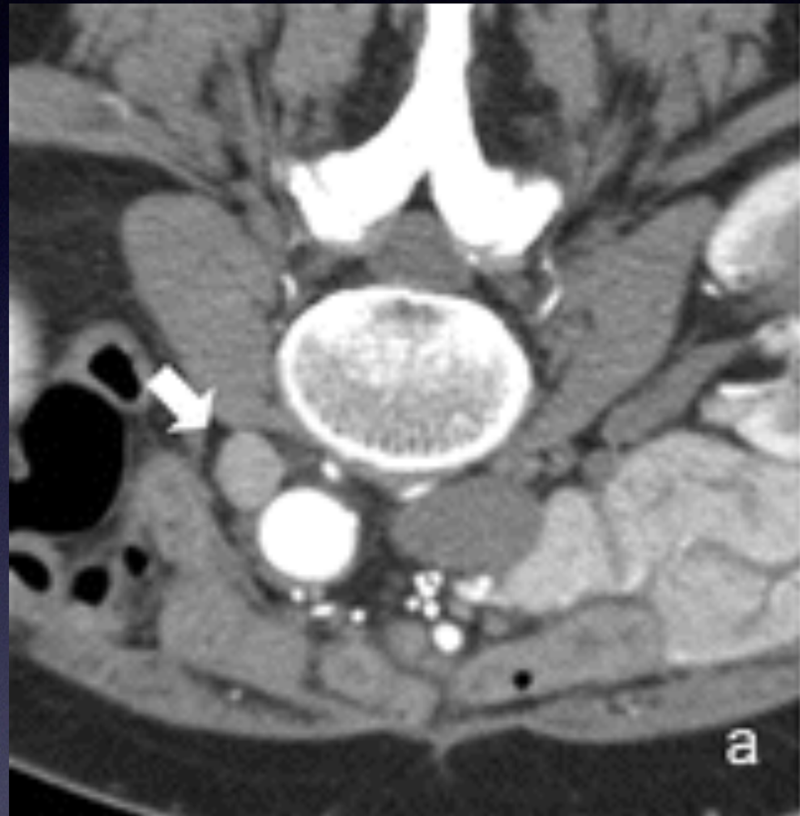

DR DEEF
Ref.: DR. S.S. BAIJAL,
AXIOM-A

Conclusion

- Adrenal gland ablation is an unrecognised, under-utilised but excellent technique to treat small functional tumours or small neoplasms
- Results are as good as surgery in the short term
- Longer term studies are required.

Je vous remercie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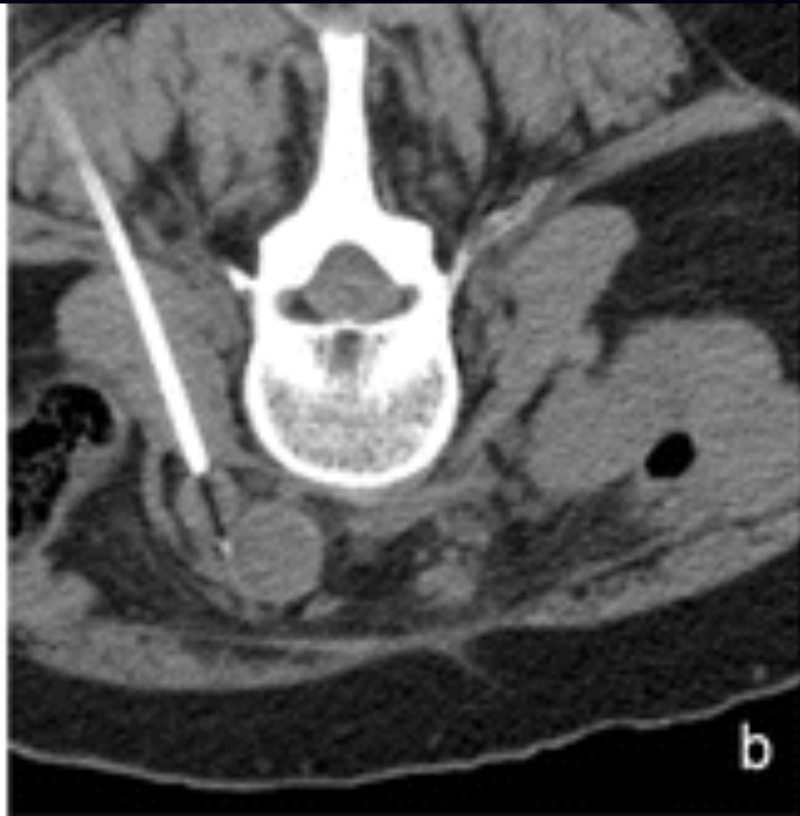
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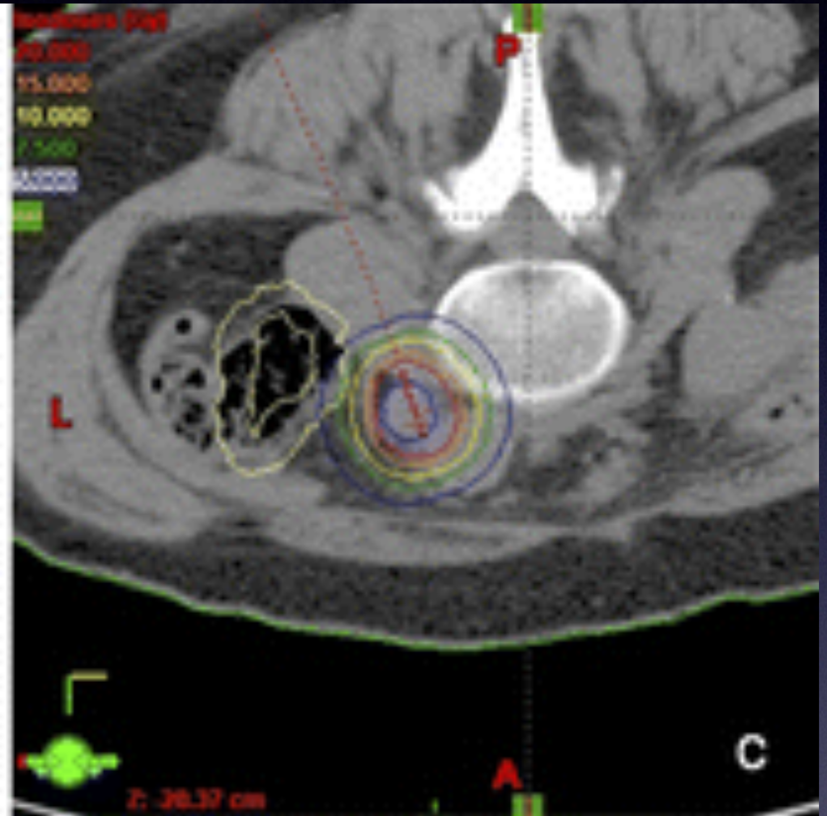
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