Nightmare during transperitoneal laparoscopic adrenalectomy after failure of posterior retroperitoneal approach

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Adrenalectomy indication

BOX 107.1 Indications for Adrenalectomy

FUNCTIONAL ADRENAL TUMORS

Aldosterone-secreting adenomas (Conn syndrome)
Cortisol-secreting adenomas (Cushing syndrome)
Pituitary-dependent Cushing disease unsuccessfully managed by transsphenoidal surgery
Bilateral adrenal hyperplasia
Pheochromocytomas
Adrenal androgens/estrogen-producing tumors causing virilization/feminization

NONFUNCTIONAL ADRENAL TUMORS

Histologically confirmed adrenal cortical carcinoma
Symptomatic adrenal masses such as cysts, myelolipomas
Incidentally discovered adrenal tumors (adrenal incidentalomas)
Size criteria:

- Incidentaloma ≥6 cm
- Incidentaloma between 4 and 6 cm with suspicious features such as irregular margins and heterogenous enhancement
- Incidentaloma <4 cm and enlarging by >20% (in addition to at least a 5-mm increase in maximum diameter)

Radiologic imaging criteria:

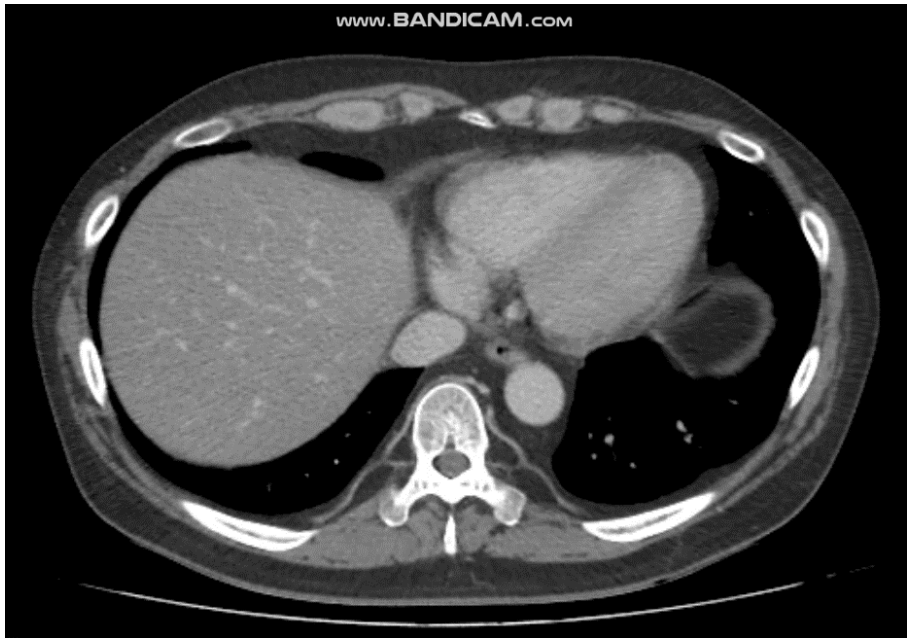
- >10 HU in an unenhanced CT scan
- Enhancement washout of <50% and delayed attenuation of >35 HU on contrasted CT
- MRI – chemical shift not consistent with lipid rich adenoma (loss of signal intensity on outphase imaging)
- 18F-FDG-PET showing presence of FDG uptake or uptake more than the liver

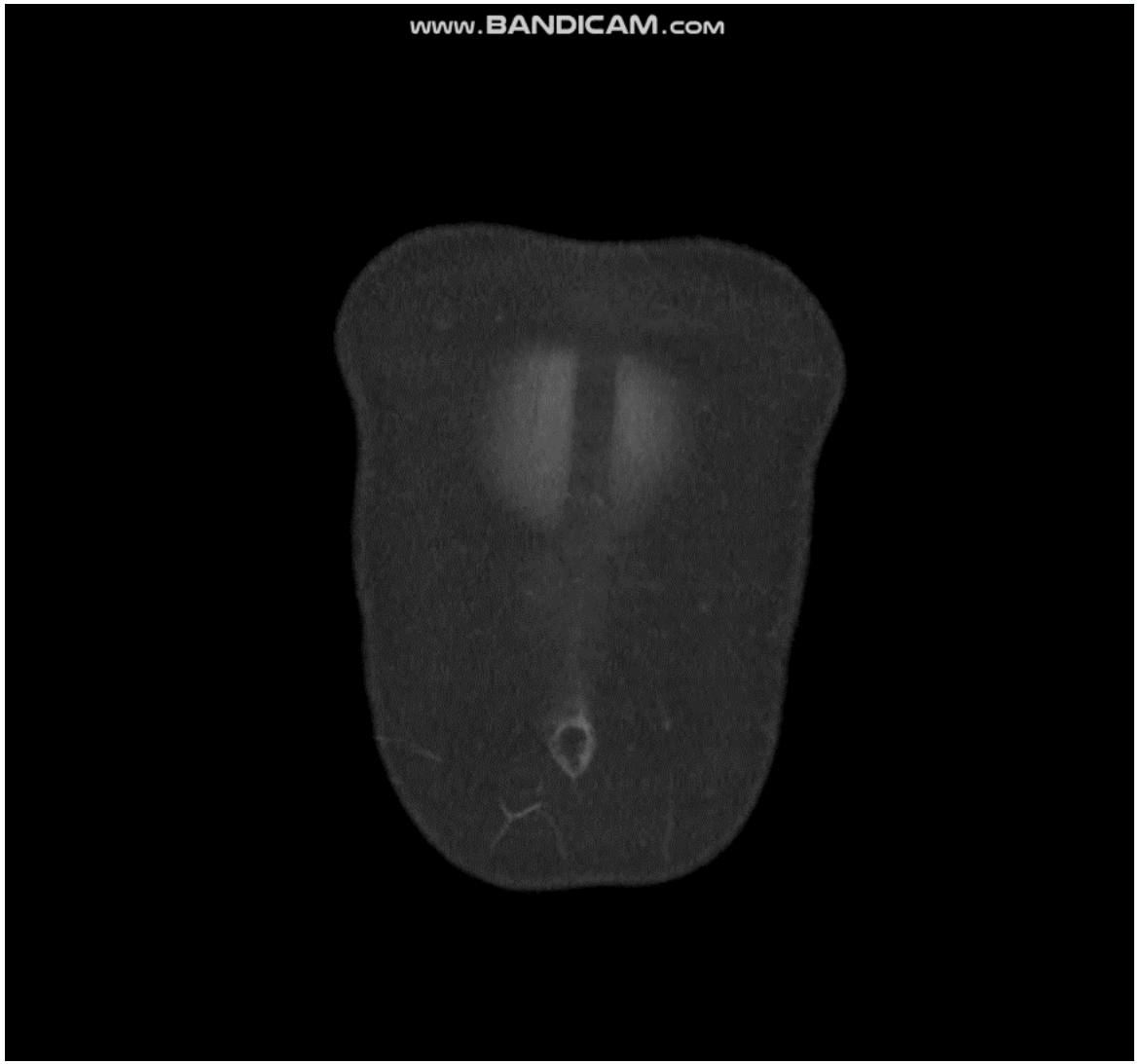
Solitary adrenal metastasis from nonadrenal primary

(Campbell-Walsh-Wein Urology 12th edition)

Case 34/M

- Incidentally detected adrenal nodule
- Ht; 183 cm, BW; 93 kg
- Hormone test : Cushing syndrome
- local abdomen CT; Lt adrenal 2.7 cm nodule





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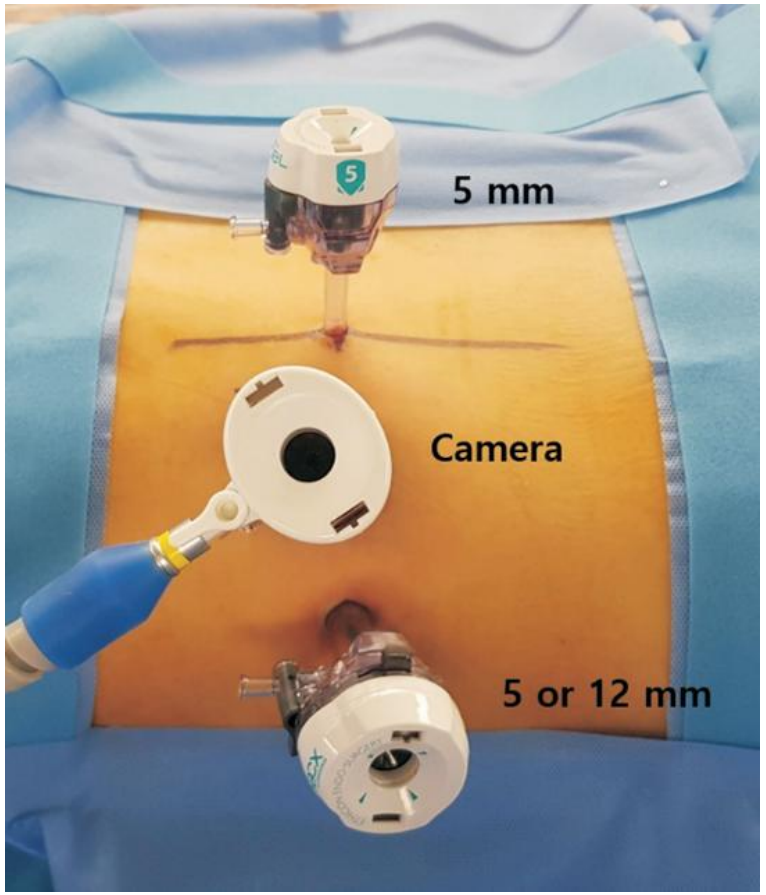
Posterior retroperitoneal approach



Comparison 1. Laparoscopic retroperitoneal adrenalectomy (LRPA) versus laparoscopic transperitoneal adrenalectomy (LTPA)

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 All-cause mortality	3		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
2 Early and late morbidity	5		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Early morbidity	5	244	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.27, 1.16]
2.2 Late morbidity	3	146	Risk Ratio (M-H, Random, 95% CI)	0.12 [0.01, 0.92]
3 Operative parameters: duration of surgery (min)	5	250	Mean Difference (IV, Random, 95% CI)	0.68 [-19.94, 21.29]
4 Operative parameters: blood loss (mL)	5	250	Mean Difference (IV, Random, 95% CI)	-13.06 [-31.55, 5.44]
5 Operative parameters: conversion to open surgery	4	228	Risk Ratio (M-H, Random, 95% CI)	1.72 [0.31, 9.62]
6 Postoperative parameters: time to oral fluid or food intake (hr)	2	89	Mean Difference (IV, Random, 95% CI)	-8.55 [-13.45, -3.66]
7 Postoperative parameters: time to ambulation (hr)	2	89	Mean Difference (IV, Fixed, 95% CI)	-5.41 [-6.77, -4.04]
7.1 Time to ambulation (hr)	2	89	Mean Difference (IV, Fixed, 95% CI)	-5.41 [-6.77, -4.04]
8 Postoperative parameters: chest infection, abdominal abscess	2		Risk Ratio (M-H, Fixed, 95% CI)	Totals not selected
8.1 Chest infection/pleural effusion	2		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
8.2 Abdominal abscess	2		Risk Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
9 Socioeconomic effects	5		Mean Difference (IV, Random, 95% CI)	Subtotals only
9.1 Time to return to normal activities (days)	3	102	Mean Difference (IV, Random, 95% CI)	-1.33 [-5.43, 2.76]
9.2 Length of hospital stay (days)	5	250	Mean Difference (IV, Random, 95% CI)	-0.36 [-1.16, 0.44]

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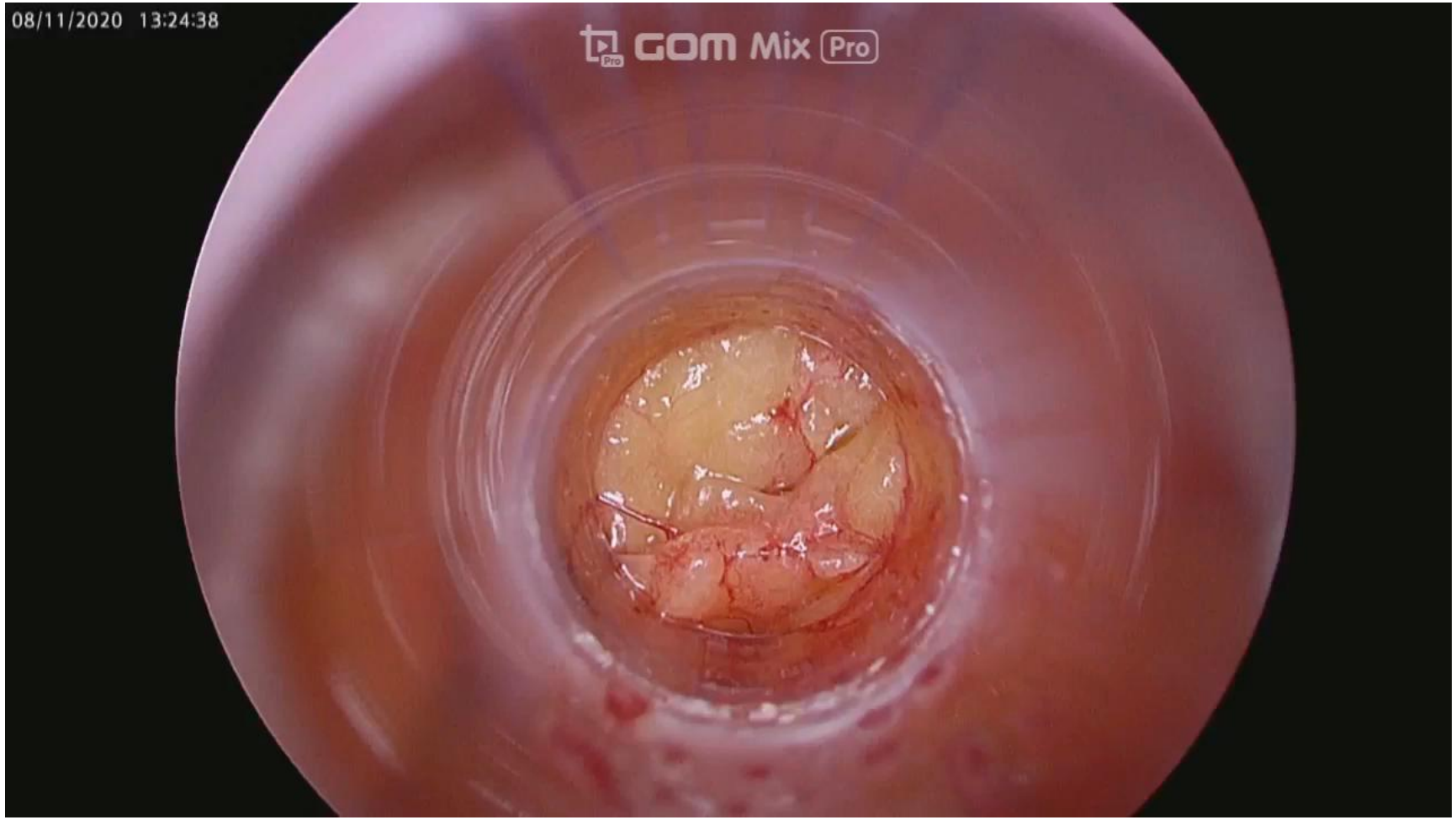
(JY Oh et al. Investing Clin Urol. 2020 Mar;61(2):180-187)
(Arezzo A et al. Cochrane Database Syst Rev. 2018 Dec 30;12(12):CD011668)

OP : Laparoscopic adrenalectomy, Lt #2020. 8.11 (posterior retroperitoneal approach)



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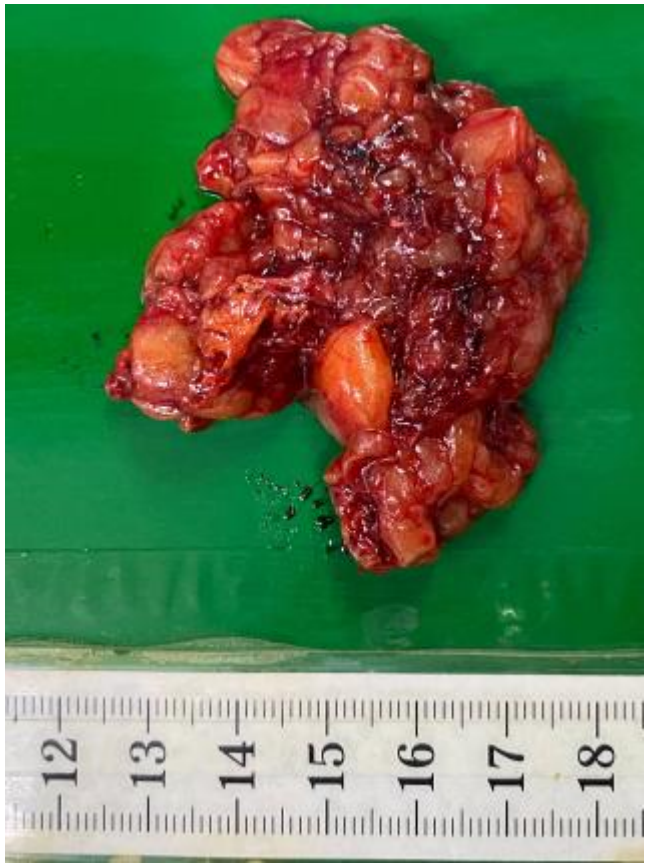
OP : Laparoscopic adrenalectomy, Lt #2020. 8.11 (posterior retroperitoneal approach)



Pathological Diagnosis-- ADRENAL GLAND[9 block(s)]

MATURE FAT TISSUE WITH VARIABLE SIZED VASCULAR TISSUE,
R/O MYELOLIPOMA (#1-9)

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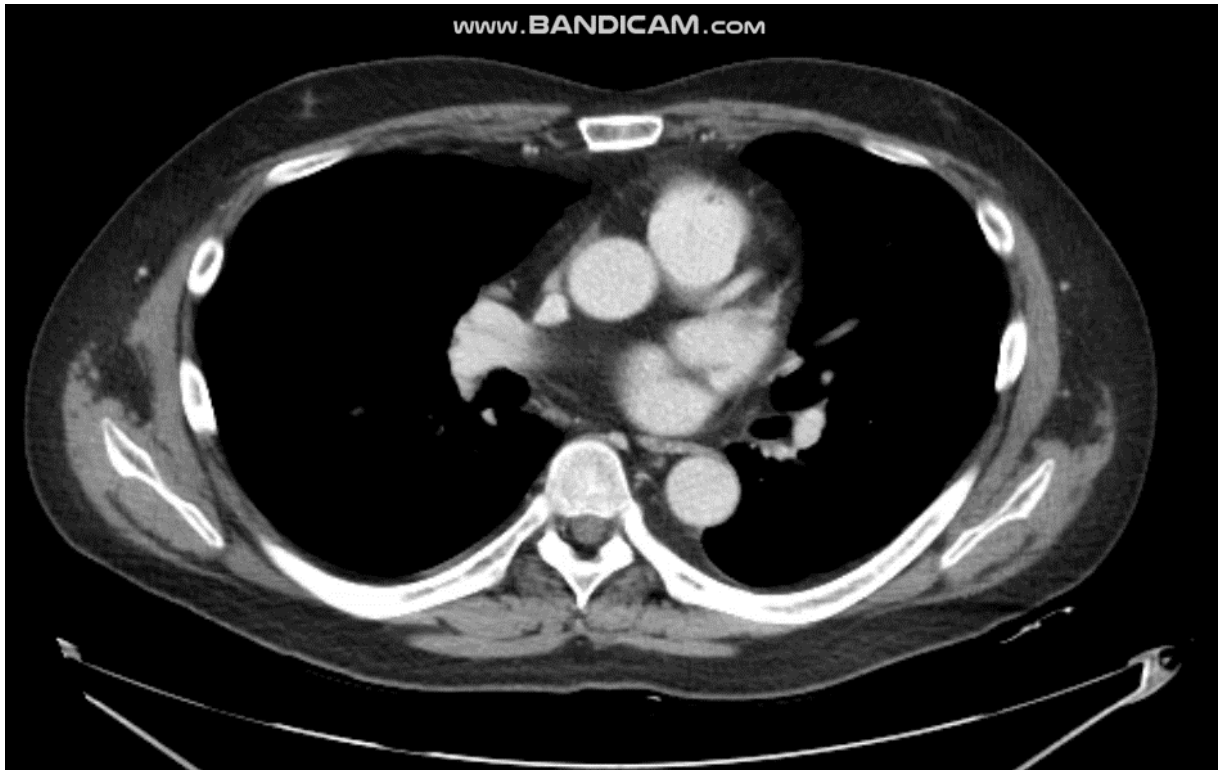
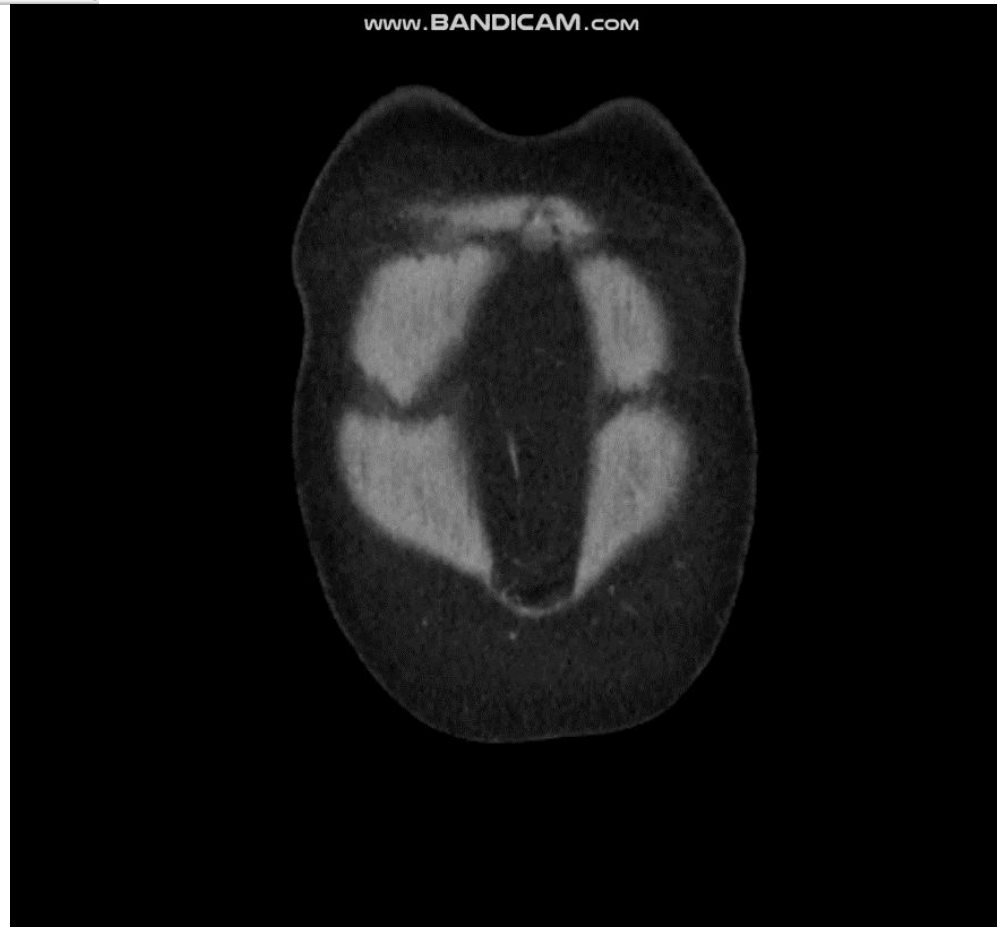
Post OP

검사명	항목명	2020.09.17	2020.07.17	2020.07.15
Cortisol,free(CIA)	4.3~176	684.0 (Cortisol: 34	566.4 (Cortisol: 19	568.8 (Cortisol: 23

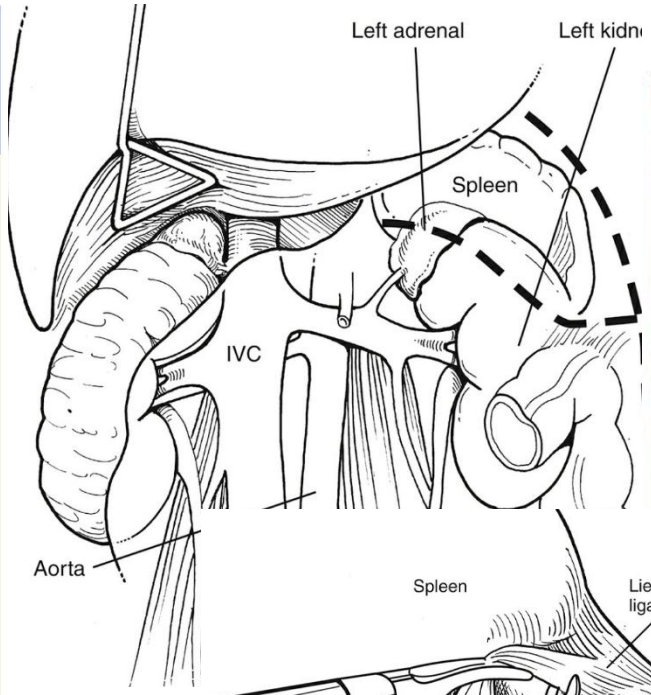


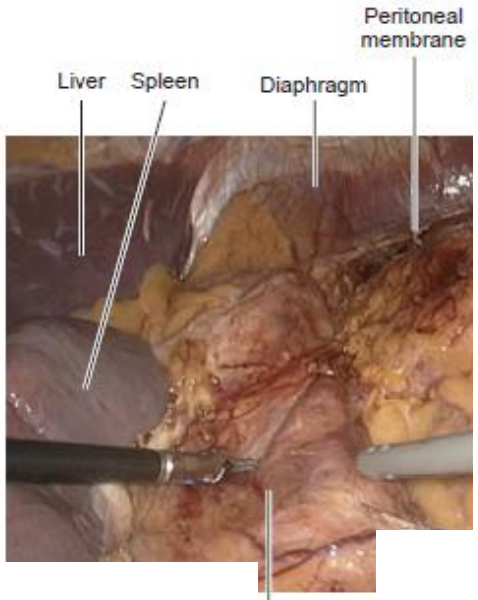


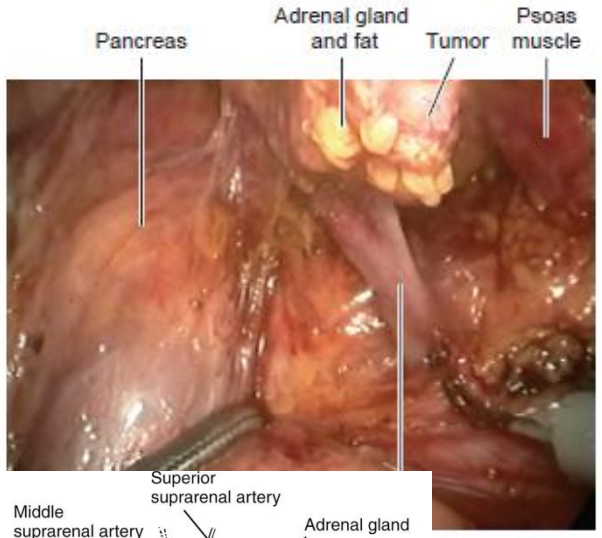
Transperitoneal approach

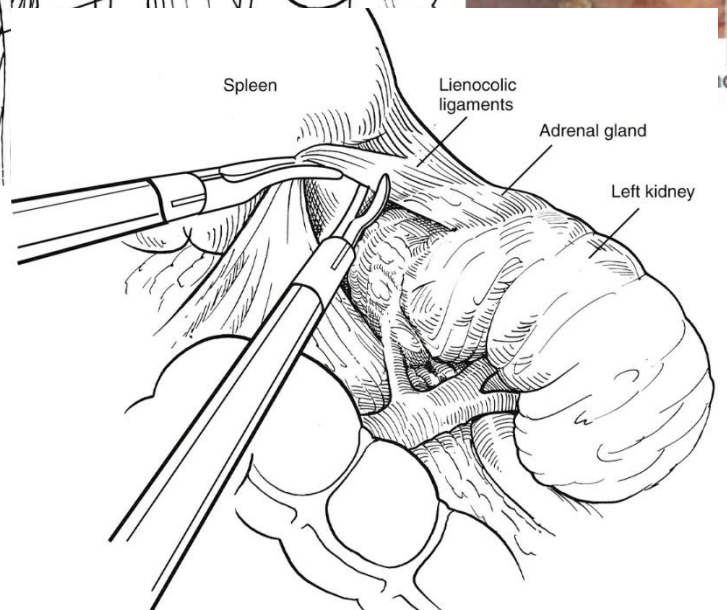
Tips and Tricks: Left Transperitoneal Adrenalectomy

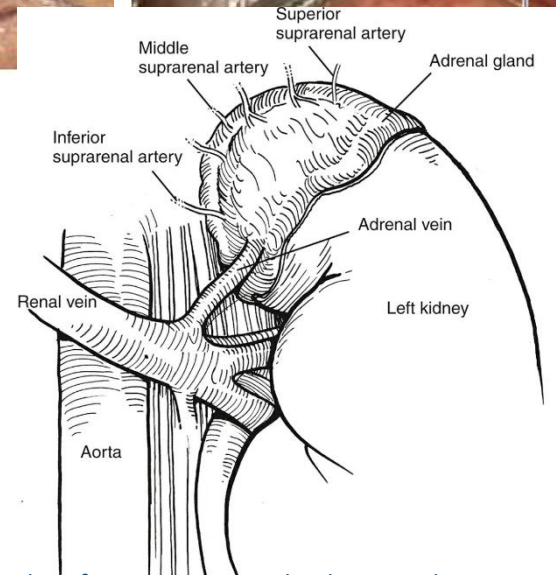
- Aggressively mobilize the spleen to expose the suprarenal fossa.
- Keep dissection lateral to the splenic vessels.
- Use laparoscopic sonography to help localize the adrenal within the perinephric fat.
- The left adrenal vein is found at the inferomedial border of the adrenal; once divided, this makes a better “handle” than the fragile adrenal parenchyma for lifting up the adrenal.
- If the adrenal is buried in fatty tissue, find the splenic vessels medially and the renal capsule laterally; the adrenal vein lies between the two at the upper edge of the renal vein.





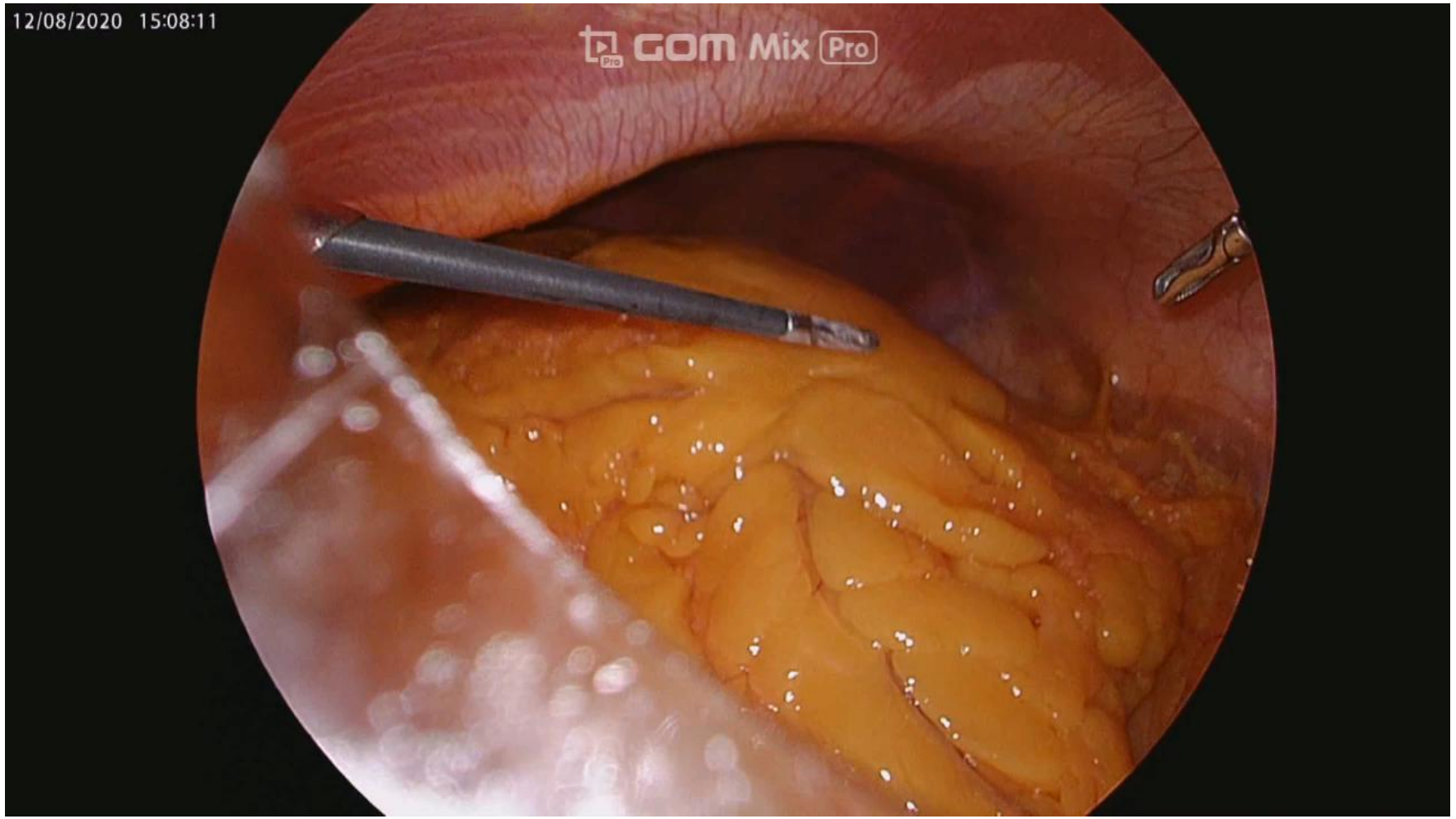






(Atlas of Laparoscopic and Robotic Urologic Surgery 3th edition)
(Hinman`s Atlas of Urologic Surgery 4th edition)

OP : 2nd Laparoscopic adrenalectomy, Lt #2020.12. 8 (transperitoneal approach)



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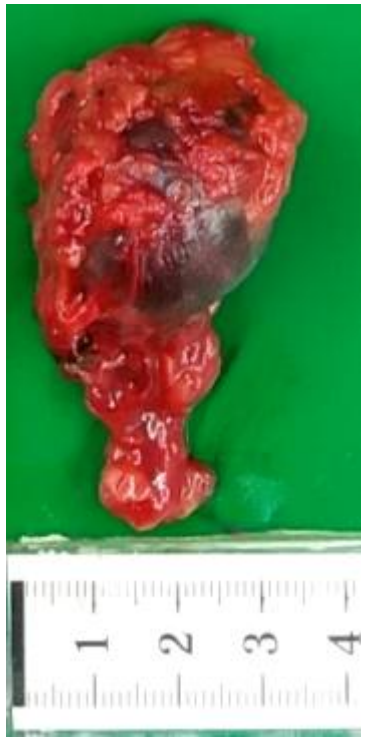
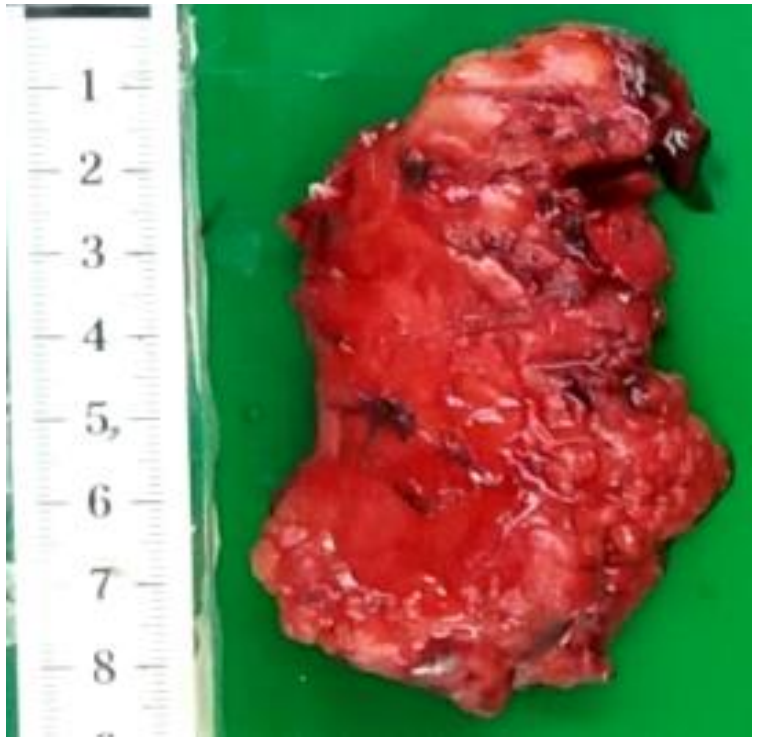
OP : 2nd Laparoscopic adrenalectomy, Lt #2020.12. 8 (transperitoneal approach → open conversion)





Pathological Diagnosis-- ADRENAL GLAND, PANCREAS[8 block(s)]
ADRENAL CORTICAL ADENOMA, ONCOCYTIC VARIANT (#1-5)

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