1.6 CM ADRENAL INCIDENTALOMA

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Endorama

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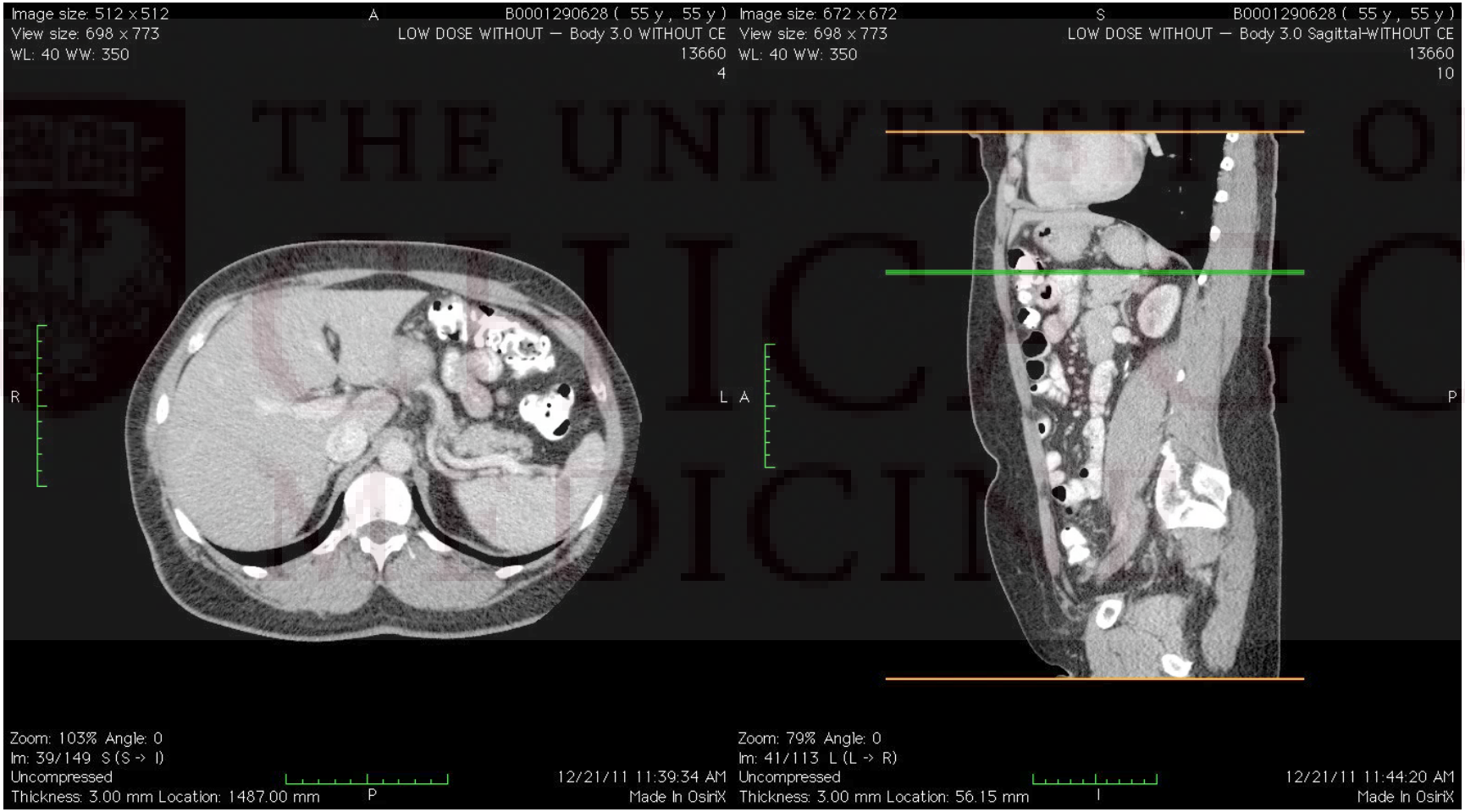
PAST MEDICAL HISTORY

- 55 yo female
- PMH: Mitral and Tricuspid Regurg
- PSH: Hysterectomy, Knee surgery
- FH: Brother RCC, Second brother Thyroid CA (thymus irradiation)
- Meds: xanax prn

HISTORY OF PRESENT ILLNESS

- Mid-epigastric pain
- Palpitations, anxiety, hot flashes, sweating
  - Symptoms started after stopping menopausal HRT
- No HA, no paroxysmal HTN
- 30 pound weight loss, intentional over 1 year
- W/U for epigastric pain eventually led to CT of abdomen
- 1.6 cm Left adrenal incidentaloma

CT OF ABDOMEN



IMAGING RESULTS

- CT - 1.6 cm adrenal nodule
  - precontrast HU 30
  - contrast HU 50
  - no washout phase
- MRI – 1.9x 1.8x 1.7 cm adrenal nodule
  - So signal dropout on opposed phase

ADRENAL IMAGING

Table 3. Characteristics of Adrenal Incidentalomas on Imaging (Imaging Phenotype).*

Variable	Adrenocortical Adenoma	Adrenocortical Carcinoma	Pheochromocytoma	Metastasis
Size	Small, usually ≤3 cm in diameter	Large, usually >4 cm in diameter	Large, usually >3 cm in diameter	Variable, frequently <3 cm
Shape	Round or oval, with smooth margins	Irregular, with unclear margins	Round or oval, with clear margins	Oval or irregular, with unclear margins
Texture	Homogeneous	Heterogeneous, with mixed densities	Heterogeneous, with cystic areas	Heterogeneous, with mixed densities
Laterality	Usually solitary, unilateral	Usually solitary, unilateral	Usually solitary, unilateral	Often bilateral
Attenuation (density) on unenhanced CT	≤10 Hounsfield units	>10 Hounsfield units (usually >25)	>10 Hounsfield units (usually >25)	>10 Hounsfield units (usually >25)
Vascularity on contrast-enhanced CT	Not highly vascular	Usually vascular	Usually vascular	Usually vascular
Rapidity of washout of contrast medium	≥50% at 10 minutes	<50% at 10 minutes	<50% at 10 minutes	<50% at 10 minutes
Appearance on MRI†	Isointense in relation to liver on T_2-weighted image	Hyperintense in relation to liver on T_2-weighted image	Markedly hyperintense in relation to liver on T_2-weighted image	Hyperintense in relation to liver on T_2-weighted image
Necrosis, hemorrhage, or calcifications	Rare	Common	Hemorrhage and cystic areas common	Occasional hemorrhage and cystic areas
Growth rate	Usually stable over time or very slow (<1 cm per year)	Usually rapid (>2 cm per year)	Usually slow (0.5 cm to 1.0 cm per year)	Variable, slow to rapid

* Adrenal hemorrhage and myelolipoma are usually easily characterized because of their distinctive imaging characteristics.[24,25] Myelolipomas are composed of myeloid, erythroid, and adipose tissue. On imaging, they have low attenuation on unenhanced CT, and they are hyperintense on T_1-weighted in-phase MRI. The presence of pure fat within an adrenal lesion on CT is consistent with the presence of a myelolipoma. Acute adrenal hemorrhage has increased attenuation on unenhanced CT, and on T_1-weighted MRI, there is hyperintensity secondary to methemoglobin. In a chronic adrenal hemorrhage, a dark rim develops along the periphery of the mass on the T_2-weighted image because of the hemosiderin-laden macrophages.

† If the imaging characteristics are indeterminate on both unenhanced and enhanced CT, MRI may be considered to clarify the imaging phenotype.

LABORATORY DATA

- Aldosterone: <4
- Renin: <0.6
- Cortisol: 6.9
- Serum Metanephrine: 0.57 (<0.90)
- Serum Normetanephrine: <0.20 (<0.50)

HOSPITAL COURSE

- Left laparoscopic adrenalectomy
- Well encapsulated adrenal nodule in superior portion of gland
- No local invasion
- D/C home POD #1

FINAL PATH

- 2.5 cm Myxoid Adrenocortical Tumor
- Weiss score: 3
  - High nuclear grade (grade III)
  - Capsular invasion
  - <25% clear cells

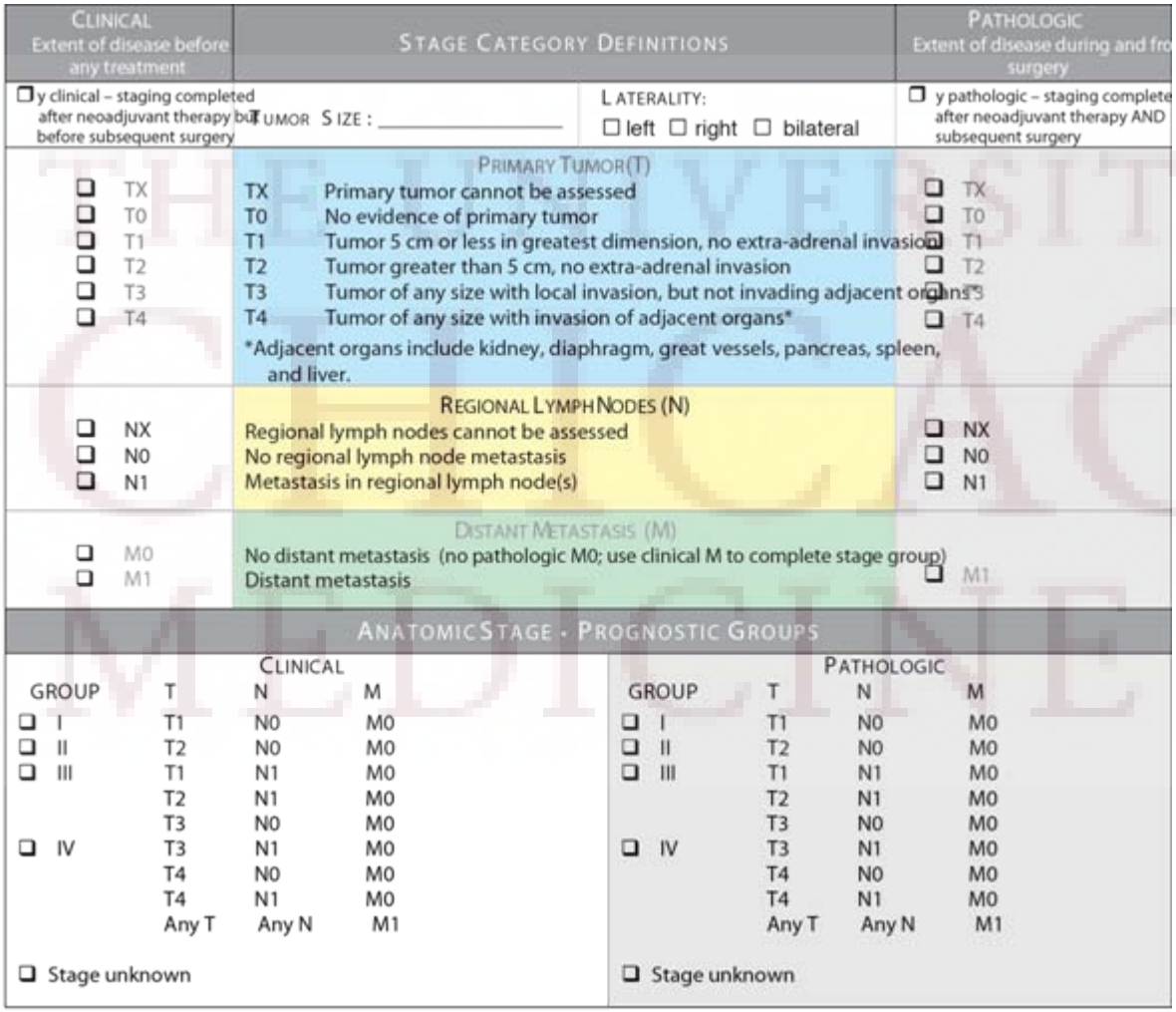
THE WEISS SYSTEM

Table 1 The Weiss system

Histological criteria	Weight of criteria	
	0	1
Nuclear grade[a]	1 and 2	3 and 4
Mitoses	≤5 for 50 fields ×400	≥6 for 50 fields ×400
Atypical mitoses	No	Yes
Clear cells	>25%	≤25%
Diffuse architecture	≤33% surface	>33% surface
Confluent necrosis	No	Yes
Venous invasion	No	Yes
Sinusoidal invasion	No	Yes
Capsular infiltration	No	Yes

The presence of three or more criteria highly correlates with malignancy [46]

ACC STAGING



CLINICAL Extent of disease before any treatment	STAGE CATEGORY DEFINITIONS	PATHOLOGIC Extent of disease during and fro surgery
☐ y clinical – staging completed after neoadjuvant therapy but before subsequent surgery	TUMOR SIZE : _____ LATERALITY: ☐ left ☐ right ☐ bilateral	☐ y pathologic – staging complete after neoadjuvant therapy AND subsequent surgery
	PRIMARY TUMOR (T)	
☐ TX	TX Primary tumor cannot be assessed	☐ TX
☐ T0	T0 No evidence of primary tumor	☐ T0
☐ T1	T1 Tumor 5 cm or less in greatest dimension, no extra-adrenal invasion	☐ T1
☐ T2	T2 Tumor greater than 5 cm, no extra-adrenal invasion	☐ T2
☐ T3	T3 Tumor of any size with local invasion, but not invading adjacent organs*	☐ T3
☐ T4	T4 Tumor of any size with invasion of adjacent organs*	☐ T4
	*Adjacent organs include kidney, diaphragm, great vessels, pancreas, spleen, and liver.	
	REGIONAL LYMPH NODES (N)	
☐ NX	Regional lymph nodes cannot be assessed	☐ NX
☐ N0	No regional lymph node metastasis	☐ N0
☐ N1	Metastasis in regional lymph node(s)	☐ N1
	DISTANT METASTASIS (M)	
☐ M0	No distant metastasis (no pathologic M0; use clinical M to complete stage group)	
☐ M1	Distant metastasis	☐ M1

ANATOMIC STAGE - PROGNOSTIC GROUPS

CLINICAL				PATHOLOGIC			
GROUP	T	N	M	GROUP	T	N	M
☐ I	T1	N0	M0	☐ I	T1	N0	M0
☐ II	T2	N0	M0	☐ II	T2	N0	M0
☐ III	T1	N1	M0	☐ III	T1	N1	M0
	T2	N1	M0		T2	N1	M0
	T3	N0	M0		T3	N0	M0
☐ IV	T3	N1	M0	☐ IV	T3	N1	M0
	T4	N0	M0		T4	N0	M0
	T4	N1	M0		T4	N1	M0
	Any T	Any N	M1		Any T	Any N	M1
☐ Stage unknown				☐ Stage unknown			

THE UNIVERSITY OF CHICAGO ENDOCRINE SURGERY

MYXOID ACC

Myxoid Adrenal Cortical Carcinoma Presenting as Primary Hyperaldosteronism : Case Report and Review of the Literature

Min-Shu Hsieh, Jun-Herng Chen and Long-Wei Lin

INT J SURG PATHOL 2011 19: 803 originally published online 5 May 2010

Adrenocortical Tumors With Myxoid Features: A Distinct Morphologic and Phenotypical Variant Exhibiting Malignant Behavior

Mauro Papotti, MD,* Marco Volante, MD,* Eleonora Duregon, MS,* Luisa Delsedime, MD, Massimo Terzolo, MD,* Alfredo Berruti, MD,* and Juan Rosai, MD

Am J Surg Pathol • Volume 34, Number 7, July 2010

- Roughly 30 cases reported in the literature
- Previously smallest size was 5 cm
- Weiss score seems to be less relevant
- More aggressive than typical ACC

FOLLOW UP?

- CT
  - 6 mos then yearly for 5 years?
- PET ?
- Labs ?
- Mitotane ?