



Deliver To:

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**HISTOPATHOLOGY FOR REVIEW**

ICD-6-3

Carcinoma, adrenal cortical S370.13  
Site: ~~B~~ Adrenal Gland, cortex C74.0

JW 1/30/13

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Slides were reviewed at the request of [redacted] (treating surgeon). This review is part of a project examining comparative genomic hybridisation on adrenal tissue frozen at the time of surgery and involves centralised histopathological review including assignment of a Weiss score to a large number of adrenal tumours.

**Macroscopic:**

The specimen labelled "right adrenal gland" consists of a partly incised adrenal gland, from which a piece of tissue has been removed, weighing 55g and measuring 60mmx40mx30mm. It is largely replaced by a haemorrhagic tumour measuring 50mmx50mmx30mm. 6 Blocks Sampled.

**MICROSCOPIC:**

At least 2 Weiss criteria are present (Diffuse architecture, Eosinophilic cytoplasm).

In addition there is probable venous invasion (present in block 1). There is some necrosis (present in block 5) but this appears to be of infarct like necrosis rather than coagulative necrosis. There is some nuclear enlargement and hyperchromasia but I do not think this qualified as nuclear atypia by the Weiss criteria. There is no significant mitotic activity. Atypical mitoses are not present.

I would classify this as an Adrenal Cortical Tumour of uncertain malignant potential. As I am uncertain how to apply the Weiss criteria in this case, I shall send the slides to [redacted] or his expert opinion.

**SUMMARY:**

Adrenal Gland: Adrenal cortical tumour of uncertain malignant potential. An additional report clarifying the number of Weiss criteria is pending.

T-93000 M-81400

**ADDITIONAL REPORT:**

Slides were sent to [redacted] for consultation. Dr [redacted]  
reports:

COPIES

**Requesting Doctor's Information:***Deliver To:***Received****HISTOPATHOLOGY FOR REVIEW**

The slides submitted show an unencapsulated adrenocortical neoplasm with a diffuse growth pattern. The cells have predominantly eosinophilic cytoplasm. Broad fibrous bands are present. Nuclear hyperchromatism and pleomorphism is noted (nuclear grade 3 according to Fuhrman's criteria). Vascular invasion is identified on slide 5. No definite necrosis is identified. Rare mitotic figures (2/50HPFs) are seen on the submitted six slides. No atypical mitotic figures are seen. No sinusoidal or capsular invasion is seen.

Utilising the Weiss criteria (American Journal of Surgical Pathology, Volume 8 (3): 163-169, 1984), this neoplasm (1 for vascular invasion, 1 for nuclear grade 3, 1 for diffuse architecture, and 1 for <=25% clear tumour cells). Therefore, this neoplasm would be classified as a malignant neoplasm.

Furthermore, the presence broad fibrous band is used as one feature associated with malignant adrenocortical tumour by Hough's criteria (Hough *et al*, American Journal of Clinical Pathology, 72:390-399, 1979).

As you mentioned, there is a small focus of adrenocortical tissue in the peri-adrenal fat tissue in block 1. We think this is ectopic normal adrenal cortical tissue. A small infarct-like area is identified in block 5 as you mentioned, and we agree with your interpretation. We think that it does not represent coagulative necrosis.

The attending pathologist whose signature appears on this report has reviewed the slides and has edited the gross/or microscopic portion of the report in rendering the final microscopic diagnosis.

**DIAGNOSIS:**

- Adrenal mass, right adrenalectomy
- Adrenocortical carcinoma, low grade
  - Vascular invasion identified
  - No capsular invasion or extracapsular extension identified

**REPORTING PATHOLOGIST:***(Electronic Signature)***Page 2 of 2**

Patient:

Loc:

A service operated by

Dob/Age:

Doctor:

## REPORT

Tests requested:  
Tests to follow:

### CLINICAL NOTES:

Right laparoscopic adrenalectomy

### MACROSCOPIC: Dr

Specimen labelled "Right adrenal gland" - Consists of a partly incised adrenal gland, from which a piece of tissue has been removed, weighing 55g and measuring 60mmx40mmx30mm. It is largely replaced by a haemorrhagic tumour measuring 50mmx50mmx30mm.

### MICROSCOPIC:

The sections show an adrenal gland. The lesion is composed of cells recapitulating the adrenal cortex. There are areas of haemorrhage and pigment containing cells. There is no significant nuclear pleomorphism, mitotic activity, areas of necrosis or capsular or vascular invasion noted. Cells with clear cytoplasm are also present. The appearances are consistent with an adrenal cortical adenoma.

### CONCLUSION:

RIGHT ADRENAL GLAND: Cortical adenoma.

Reported by:

(electronic signature)

Patient:

Adrenal

Dob/Age:

Doctor:

Tests requested: HISTO  
Tests to follow: <none>

#### **CLINICAL NOTES:**

Right laparoscopic adrenalectomy

**MACROSCOPIC:** Dr

Specimen labelled "Right adrenal gland" – Consists of a partly incised adrenal gland, from which a piece of tissue has been removed, weighing 55g and measuring 60mmx40mmx30mm. It is largely replaced by a haemorrhagic tumour measuring 50mmx50mmx30mm.

#### **MICROSCOPIC:**

The sections show an adrenal gland. The lesion is composed of cells recapitulating the adrenal cortex. There are areas of haemorrhage and pigment containing cells. There is no significant nuclear pleomorphism, mitotic activity, areas of necrosis or capsular or vascular invasion noted. Cells with clear cytoplasm are also present. The appearances are consistent with an adrenal cortical adenoma.

#### **CONCLUSION:**

**RIGHT ADRENAL GLAND:** Cortical adenoma.

Reported by: electronic signature)

#### **FURTHER REPORT:**

Slides from this case were reviewed as part of a study utilising comparative hybridization to compare the genotype of benign and malignant adrenal cortical neoplasms. Patient and ethics committee approval etc have been obtained. The study requires centralised pathology review and for all cases to be given a Weiss score. I have reviewed most of the cases, although difficult or borderline cases have been referred to

I thought that this case some atypical features including a diffuse architecture and less than 25% clear cells. I was unsure whether this should be given a point for cytology atypia, vascular space invasion or diffuse architecture. I noted that there was no significant mitotic activity.

2004-02-12 10:00

Dob/Age

## REPORT

Doctor:

Tests requested:  
Tests to follow:

As it was a borderline case slides were referred to [redacted] who considers it a low grade adrenocortical carcinoma. A copy of his report is included. I shall return the slides as soon as we receive them back.

Reported by

### FURTHER REPORT:

The slides submitted show an unencapsulated adrenocortical neoplasm with a diffuse growth pattern. The cells have predominately eosinophilic cytoplasm. Broad fibrous bands are present. Nuclear hyperchromatism and pleomorphism is noted (nuclear grade III according to Fuhrman's criteria). Vascular invasion is identified on slide 5. No definite necrosis is identified. Rare mitotic figures (2/50HPFs) are seen on the submitted six slides. No atypical mitotic figures are seen. No sinusoidal or capsular invasion is seen.

Utilising the Weiss criteria (American Journal of Surgical Pathology, Volume 8 (3): 163-169, 1984), this neoplasm would rate a score of 4 (1 for vascular invasion, 1 for nuclear grade 3, 1 for diffuse architecture, and 1 for <=25% clear tumour cells). Therefore, this neoplasm would be classified as a malignant neoplasm.

Furthermore, the presence broad fibrous band is used as one feature associated with malignant adrenocortical tumour by Hough's criteria (Hough *et al*, American Journal of Clinical Pathology, 72:390-399, 1979).

Due to the low mitotic rate, this tumour is low grade malignant.

As you mentioned, there is a small focus of adrenocortical tissue in the peri-adrenal fat tissue in block 1. We think this is ectopic normal adrenal cortical tissue. A small infarct-like area is identified in block 5 as you mentioned and we agree with your interpretation. We think that it does not represent coagulative necrosis.

The attending pathologist whose signature appears on this report has reviewed the slides and has edited the gross and/or microscopic portion of the report in rendering the final microscopic diagnosis.

Dob/Ag

# REPORT

Doctor:

Tests requested:  
Tests to follow: ~

## DIAGNOSIS:

- ADRENAL MASS, RIGHT ADRENOLECTOMY
- ADRENOCORTICAL CARCINOMA, LOW GRADE
- VASCULAR INVASION IDENTIFIED
- NO CAPSULAR INVASION OR EXTRACAPSULAR EXTENSION IDENTIFIED

Criteria	12/22/12	Yes	No
Diagnosis Discrepancy			
Primary Tumor Site Discrepancy			
HIPAA Discrepancy			
Prior M2/M3 history			
Dual/Synchronous Primary Noted			
Case is (circle):	<input checked="" type="checkbox"/> QUALIFIED / <input type="checkbox"/> DISQUALIFIED		
Reviewer Initials		Date reviewed	