UNIVERSITY OF MIAMI
MILLER SCHOOL of MEDICINE

Clinical Pathologic Correlations

Wacharee Seeherunvong M.D.
David B. Thomas, M.D.

March 8, 2019

Holtz Children's Hospital
UM/JACKSON MEMORIAL MEDICAL CENTER

UHealth
UNIVERSITY OF MIAMI HEALTH SYSTEM
Pathology

Lecture:
Clinical Pathologic Correlations: Case Studies
Wacharee Seeherunvong, M.D., David B. Thomas, M.D.

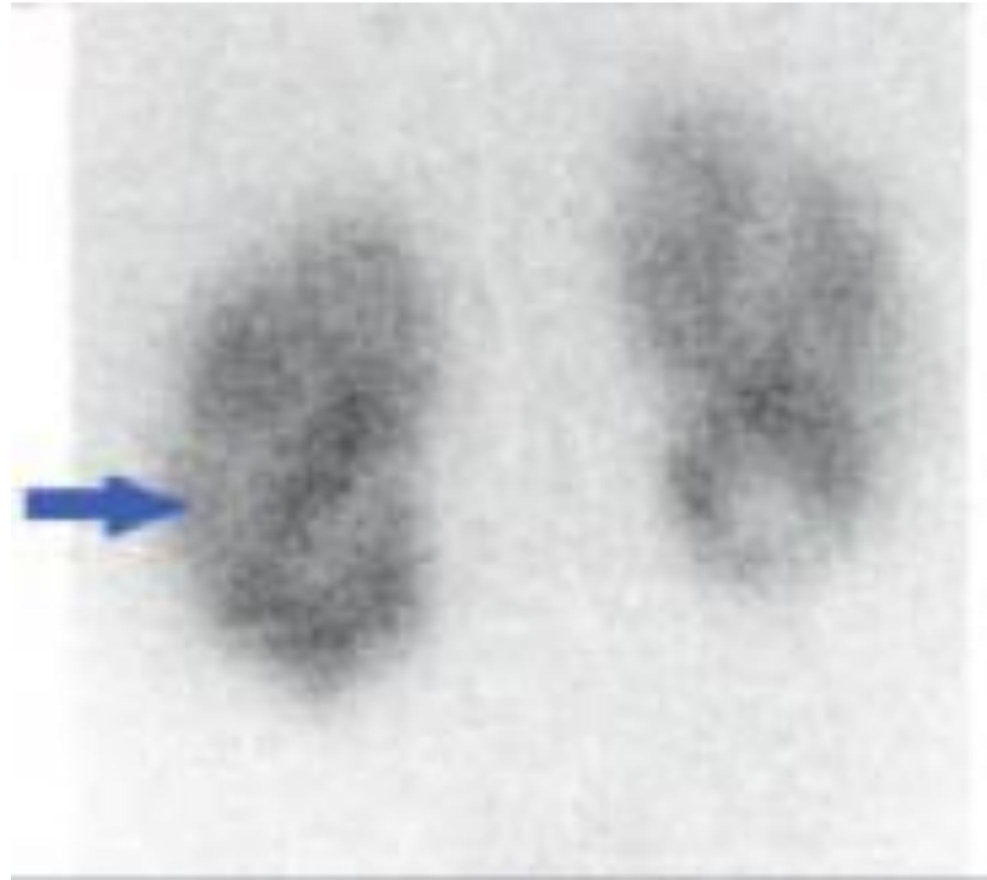
Disclosures:
I have no actual or potential conflict of interest in relation to this program/presentation.

Objectives: Three clinical pediatric nephrology cases and corresponding pathology didactic will be presented. Rare, unusual or interesting presentations of patients and diagnostic differential diagnoses will be emphasized. The moderator will present objective data, discuss rationale for work-up, and correlate data with the differential diagnoses. Each case will be closed with the identification of the patient's diagnosis and evidence based discussion of the diagnosis in terms of the epidemiologic, diagnostic, and therapeutic details of the disease process. Audience participation will be expected.

UHealth
UNIVERSITY OF MIAMI HEALTH SYSTEM
Pathology

UNIVERSITY OF MIAMI
MILLER SCHOOL of MEDICINE

Holtz Children's Hospital
UM/JACKSON MEMORIAL MEDICAL CENTER



2019 CPC Case #1

A child with abnormal renal function and recurrent fever

History of Present Illness:

- A 14 year old White Latin female
- Presenting with abnormal renal function, recurrent fever and abdominal pain, and unexplained weight loss.
  - 8 months ago, patient went with her family on a 7 day cruise trip to the East Caribbean.
  - 7 months ago: fever, sore throat. Dx Streptococcal infection; Rx Augmentin x 2 courses for persistent symptoms
  - 5 months ago: fever, anorexia,10 pounds weight loss, abdominal pain, and anemia; admitted to a hospital; Dx acute pyelonephritis. She was treated with Ciprofloxacin for 14 days.
  - 4 months ago: same symptoms as 1 month ago; admitted to another hospital; Dx recurrent pyelonephritis.RUS identified bilateral scars / chronic pyelonephritis; Rx Meropenem for 14 days

Holtz Children's Hospital
UM/JACKSON MEMORIAL MEDICAL CENTER

History of Present Illness (cont):

- 1 month ago: same symptoms as 4 months ago; admitted to the same hospital; Rx Meropenem for another 14 days. She was seen by ped GI. Endoscopy was suspicious for ascariasis and she was treated with mebendazole.

Past Medical and Surgical History:

Born full term, growth hormone deficiency Dx at 4yo' obesity.

Family History:

GH deficiency (father, 2 sisters), asthma (sister), hypothyroidism (mom)

Medications: GH, Iron sulfate

Holtz Children's Hospital
UM/JACKSON MEMORIAL MEDICAL CENTER

Review of Systems:

+ weight loss, fatigue, fever, abdominal pain
no rash, no joint pain,
no dysuria, no gross hematuria

Physical Examination

- Wt 56 kg (50%tile) ,Ht.150 cm (5%)
- T 37C BP 93/59 mmHg, P 86/min
- Short stature, no edema,
- Heart, Lungs: normal
- Soft abdomen, not tender,
- No hepatomegaly, lymphadenopathy,
- No rash, no signs of arthritis

Prior Evaluation:

RUS/DMSA: Bilateral renal scars

VCUG: Normal bladder, no VUR

MR entreography: Acute diffusely inflammaed renal parenchyma

Laboratory Tests:

4 years ago: serum creatinine 0.59 mg/dL

4 months ago: serum creatinine 0.89 mg/dL

UA: SpGr 1.015 protein 1+, 0-5 WBC; 0-2 RBC

Urine C/S: *Klebsiella spp* 50-100000 CFU/mL

WBC 10.2 Hgb 10.4 Plt 312; N66 L20 M11 E2

Blood culture, stool culture - negative

Stool Ova and parasite - negative

ESR 55 CRP 2.0 ANA/ANCA - negative,

Quantiferon gold, Toxoplasma, CMV, HIV, Lyme, Bartonella serologies - negative

Celiac panel, IBD expanded panel - negative

Lymphocytes subset, Immunoglobulin - normal

Fecal calprotectin 297 ug/g

Current: BUN 14 Cr 1.19 Alb 4 Normal LFT

Urinalysis: Spgr 1.012 no protein, blood,

LE +, 5 WBCs/hpf, no RBC, no eosinophil

Urine protein/creatinine 0.23 mg/mg creat

Upper & Lower GI Endoscopy:

- Antrum: multiple ulcerations
- Colon and Rectum:
  - chronic active colitis with inflammation and crypt abscess formation throughout
  - no granuloma

Capsule Endoscopy:

- possible round worms c/w *Ascaris lumbricodes* in the jejunum;
- Rx Albendazole for 3 days

Problem List:

1. Acute on chronic kidney injury
   - intermittent pyuria, no proteinuria, no hematuria
   - abnormal renal imaging C/W inflammation VS. scar
2. Recurrent fever
3. Significant weight loss, GI symptoms
4. Ascaris infestation
5. Iron deficiency anemia

UHealth
UNIVERSITY OF MIAMI HEALTH SYSTEM
Pathology

UNIVERSITY OF MIAMI
MILLER SCHOOL of MEDICINE

Holtz Children's Hospital
UM/JACKSON MEMORIAL MEDICAL CENTER

2019 CPC Case #2

A child with hematuria and proteinuria

History of Present Illness:

- The patient is an 8 year old African American male with sickle cell trait
- Presenting with sore throat, hematuria
- 5 days ago he had fever, cough, sore throat
- 2 days ago his urine was dark, constantly, +/- burning during urination
- 1 day of swollen face, skin peeling of hands and feet

Birth History: Full term delivery

Medical History: Sickle cell trait

Family History: None

Social History: Lives with parents and 2 brothers

Medications: Acetaminophen

Review of Symptoms: + cough, dry skin, no rash, no joint pain

Physical examination:

Wt 25%, Ht 25%, BMI 50%

T 37C, P 62, Sat 100%

BP 118/83 mmHg (95%tile: 112/73mmHg)

Well nourished, facial edema

+ Palatal petechiae, no oral ulcer

Enlarged Submandibular /cervical nodes

Heart, Lungs, Abdomen: normal

Skin: desquamation of palm

Imaging:
CXR: Normal

RUS: Echogenic kidneys, normal size

Laboratory Tests:

- CBC: WBC 8 Hgb 9.6 Hct 29% Plt 372
  N 51% L 30% Mo 13% Eo 5%; Retic 1.2%
- Urine Spgr 1.023, pH 6.6 protein 3+ blood +
  RBC 132/hpf, WBC 5/hpf
- urine protein/cr 6.5 mg/mg

138	107	BUN 12	86
4.2	25	Cr 0.51	

- Alb 3.2 Normal LFT
- Sickle cell screening: positive
- ↑ ESR, CRP
- ASO 1750; TSC +
- C3 8 (90-180 mg/dL)
- C4 29 (10-40 mg/dL)
- ANA 160, DS DNA <1
- Negative hepatitis profile

Problem List:

1. Acute nephrotic-nephritis feature
   - hematuria, proteinuria, hypertension, edema
   - normal renal function
2. Acute streptococcal infection
3. Lymphadenopathy
4. Anemia, low MCV
5. History sickle cell trait

UHealth
UNIVERSITY OF MIAMI HEALTH SYSTEM
Pathology

UNIVERSITY OF MIAMI
MILLER SCHOOL of MEDICINE

2019 CPC Case #3

A child with proteinuria and hypertension

History of Present Illness:

The patient is a 16 year old white male

- Found incidentally with elevated blood pressure in PCP office 3 months ago
- Admitted at outside hospital: proteinuria (4+), serum creatinine 1.28 mg/dL (high) and renal US showed bilateral medullary echogenicity
    - Retrospectively he had a sore throat and took Amoxycillin for 2 days then stopped
- He was started on Amlodipine, and Atenolol was added to control BP
- He remained without any symptoms

Birth/Medical and Surgical History:

Born full term; Appendectomy; Allergic rhinitis, Hypertension; No history of UTI

Family History:

Mother has fatty liver, prediabetic, Father and 2 sisters are healthy

No family history of kidney disease

Medications: Amlodipine 5 mg BID, Atenolol, 25 mg daily, Montelukast 10 mg daily

Review of Systems:

No dysuria, no hematuria, no UTI

No back pain, abdominal pain

no fever, headache, rash nor joint pain,

Physical Examination

- Wt 61 kg (50%tile), Ht.164 cm (10%)
- T 37C; BP 131/75 mmHg; P 65/min
- Short stature, bifid uvula, no edema
- Baggy of upper and lower eyelids
- Heart, Lungs, Abdomen - normal
- No rash, no signs of arthritis

RUS:

Normal size kidneys;

Increased echogenicity both kidneys and extensive nephrocalcinosis bilaterally.

Laboratory Tests:

BUN 17 mg/dL Cr Cr 1.28 g/dL

Ca 9.9 mg/dL, Alb 4.3 g/dL

Uric acid 6.5 mg/dL, Normal lipid profile

Cystatin C 1.73 g/dL

eGFR 52 mL/min/1.73m2 by CKiD equation

Normal CBC: Hgb 14.4 g% WBC 5.5 Plt 337

Urine : Spgr 1.012 pH 7 protein 4+, no blood

Urine protein/creatinine: 7.9 mg/mg cr

Urine microalbumin/creatinine: 5634 mg/g cr

Urine study: No hypercalciuria

ASO 121 , TSC negative;

Hepatitis profile (A, B, C) and HIV - negative

ANA, ANCA, complements study - normal

Holtz Children's Hospital
UM/JACKSON MEMORIAL MEDICAL CENTER

Problem List:

1. Chronic kidney disease
   - CKD stage 3
   - nephrotic range proteinuria
   - normal serum albumin, lipid
   - hypertension
2. History of ? Strep throat infection 4 months ago