Renal manifestations of non-renal disease

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Introduction - 自我介绍

- American pediatrician - 美国儿科医生
- Lived in China for 22 years - 在中国生活22年
- Married for 28 years (prettiest surgeon in Northwest China!) - 结婚28年（中国西北最美的外科医生）
- Two daughters (23 and 17 years old) - 有两个女儿（一个23岁，一个17岁）

Family - 家庭

Objectives

- Participants will understand the importance of thinking about the kidney when facing disease states such as diabetes, HSP and spina bifida.
- Participants will develop a plan for first steps evaluation and nephroprotection in the above mentioned disease states.

Abstract

The kidney is affected by a variety of disease states. Some are intrinsically renal in origin but many are not. The generalist can be expected to see patients with diabetes, HSP or spina bifida in the course of a normal practice. All of these affect the kidney in different ways. This talk will cover the primary reno-protective measures a primary care physician can employ to make sure the patient's kidney will last as long as possible in these disease states.

Introduction

Diabetes

- Diabetes in Children
- Clinical findings
- Renal protection

IgA Vasculitis (HSP)

Myelomeningocele

Questions?

Diabetes in children

- Obesity is increasingly becoming a disease of younger and younger people.
- IDDM is most commonly linked to renal disease
- NIDDM is increasing in adolescents
- Proteinuria on urinalysis
- No edema on physical exam

Microalbuminuria

- Can occur in both insulin and non-insulin dependent diabetes
- Not massive proteinuria
  - protein:creatinine is low (usually total of 30-300mg albumin/g creatinine)
  - albumin is normal
- Due to protein leak at the tubule, not at the glomerulus
- Slow decline in GFR, leads to CKD over years
- Most patients present after years of diabetic disease - 15+

Hematuria

- Unusual
- When present, think glomerular leak
- Adults have ticks and fleas - Think about other causes of renal disease - IgA, membranous, etc.
- Biopsy shows mesangial proliferation, glomerular sclerosis

Renal protection

- Consider ACEI to protect the tubules
- Monitor blood pressure and treat accordingly
- Control diabetes to slow progression of renal disease
  - Weight reduction
  - Lipid control (rarely needed in peds)
- No protein restriction (in peds)

Monitoring

- Yearly screens for proteinuria in all diabetics
- q3 Month check of protein:creatinine ratio for patients with demonstrated proteinuria
  - Goal is less than 1000mg/day protein excretion (less than 500 is even better!)
- Blood pressure monitoring
- Follow potassium in patients on ACEI or ARB

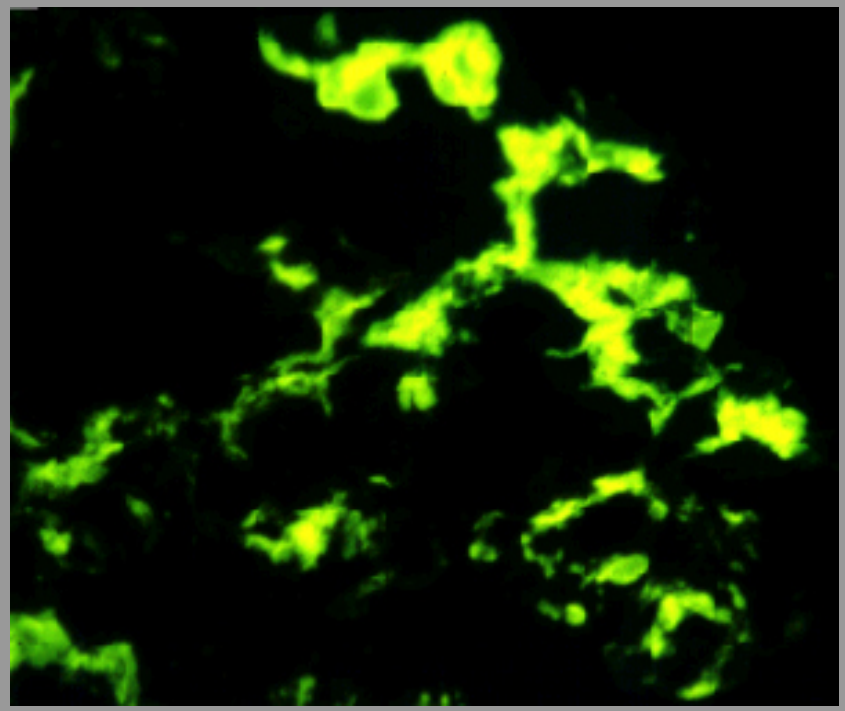
Presentation

- Palpable purpura without thrombocytopenia
- Arthritis/arthralgia
- Abdominal pain
- Renal disease

IgAV Rash

Dorsal hand edema

Immunfluorescence



Unusual manifestations

- Scrotal pain
- Headache, seizures, encephalopathy
- Respiratory signs
- Keratitis and uveitis

Management

- Maintain hydration, elevate edematous areas, etc.
- Treat pain
- Consider steroids
- Hospitalize

Outpatient management

- NSAIDS - naproxen or ibuprofen
- Prednisone - rarely needed

Criteria for hospitalization

- Unable to maintain hydration
- Severe abdominal pain
- GI bleeding
- Mental status changes
- Limited self-care (secondary to joint pain)
- Renal insufficiency

Monitoring

- 1/3 or patients will recur at least once
- Monitor urinalysis and BP weekly - q2w for the first 2 months after presentation
- Monitor monthly until 1 year after initial presentation
- Check BP and UA at annual well-child visits to monitor for adult disease onset

Introduction

Diabetes

IgA Vasculitis (HSP)

Myelomeningocele

- Case Study
- Assessment
- Management

Questions?

A Case Study

17YO African American female referred from Family Medicine clinic. Child followed at state Spina Bifida clinic for her whole life. During routine visit in the Family Medicine clinic she was discovered to have hypertension. Investigation revealed a hematocrit of 17mg/dL, creatinine of 9mg/dL. Family medicine resident immediately referred to peds nephrology for evaluation and treatment.

Varieties of neurogenic bladder

- Flaccid bladder
- High pressure bladder
- Hyperreflexic bladder
- Overactive sphincter
- Detrusor sphinctor dyssynergia

Assessment

- Ultrasound of kidney and bladder
- Urodynamics (voiding cystourethrogram, cystometrogram/EMG)
- Consider DMSA/MAG3 renal scan
- Urine culture

Management

- Clean intermittent catheterization
- Consider anticholinergics
- UTIs
- Bowel management

Management - CIC

- Mainstay of therapy
- Clean, not sterile
- Start early (< 1YO)
- Lanzhou approach != Alabama approach

Management - Anticholinergics

- Oxybutynin (Ditropan)
  - < 12m - 0.1mg/kg tid
  - 1-5YO 0.2mg/kg tid
  - for > 5YO 5mg tabs tid, consider the transdermal preparation
- Tolterodine (Detrol)
  - for > 5YO children
  - 1-2mg bid
- Both have long acting forms suitable for older children

Management - UTI

- Cloudy, smelly urine
  - Increase fluids
  - Increase frequency of CIC
  - Not necessarily a UTI
- UTI symptoms
  - pain during CIC
  - gross hematuria
  - back or belly pain
  - lethargy (think shunt malfunction too)
  - fever (think about that shunt!
  - vomiting (more shunt worries)

Management - Bowel

- Neurogenic bowel a common co-morbidity
- Most commonly constipated, may have laxity of anal sphincter
- Goal of therapy is timed elimination, use laxatives, suppositories, enemas, etc.

Questions? 提问题?

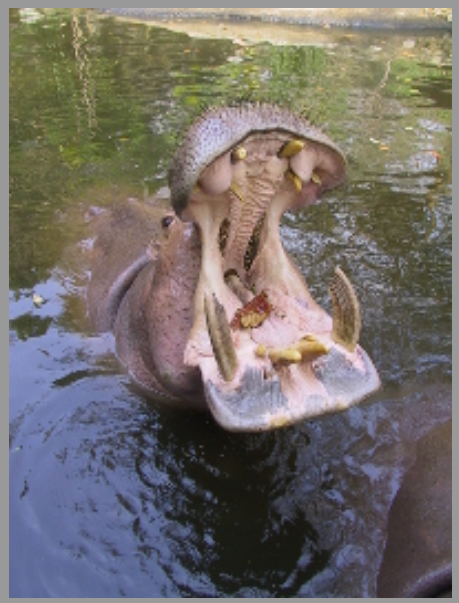


Figure: