A Tale of Two Urines

J.A. Schneider, DO
Medical Director, Adolescent Medicine Mobile Health Outreach
St. Vincent Hospital - Jacksonville, FL
CAPT, MC, USN (Ret)
Asst. Professor, Division of Adolescent Medicine, University of Florida
(Ret)
Case #1 - Polly Dipsia

- 8-year-old Polly is brought in acutely because she told her mother that her urine was red.
- A totally normal physical examination is performed as you obtain the following history...
Case #1 - Polly Dipsia (continued)

• History:
  • “Perfect” health for Polly’s entire life
  • No urinary tract infections disease / renal disease in either Polly nor in the family... and has not been given pyridium
  • No trauma
  • No bleeding nor vascular disorders
  • No menarche yet
  • No recent impetigo nor infections of any kind!
Case #1 - Polly Dipsia (continued)

- History:
  - **No** new foods or unusual foods including:
    - Beets
    - Colored food drinks of any kind
    - Blackberries
  - Not been given any medications of any kind in the last year or so
On a closer view, there is little doubt that Polly's urine is a pinkish-red color.
Hey, wait a minute... the urine dip stick indicates that there is no blood!

Could it be that this isn’t hematuria at all? Hmm....
You take a walk down to the lab...

• “Look at this,” says the lab technician when you ask what she sees on the microscopic examination
There are urate crystals in every field
To make a long story short...

- A very careful history (see following charts) left us with the likely diagnosis of urate induced pink coloration of the urine.
- Her diet was rich in purines... sardines, roasted nuts, fried foods.
- A pediatric nephrology consult was obtained because of concerns about possible uric acid calculi. Appropriate studies indicated no stones. Biannual examination over several years indicated normal renal and urinary tract function.
• Metabolic conditions involving disorders of purine metabolism (including xanthinuria) were considered and studies were performed that ruled-out a metabolic etiology.

• A change of diet and encouraging increased hydration led to resolution of the pink urine over several weeks.
Conditions Simulating Hematuria

- Dark Yellow-Orange
  - Dehydration
  - Bilirubin pigment
  - Urobilin pigment
  - Carotene pigment
  - Pyridium
- Red Urine
- Red Urine
  - Porphyria
  - Foods
    - Beets (anthocyanin)
    - Blackberries
    - Food/vegetable dyes
  - Drugs
    - Phenothyazine
    - Phenytoin
    - Phenophthalein
  - Red Diapers
    - Urates
    - Red Diaper syndrome
    - Swallowed maternal blood
    - Uterine bleeding
Expanded List of Foods/Drugs Associated with Pink-Red Urine Color

- Aminopyrine
- Anthocyanin
- Azo dyes
- Beets
- Blackberries
- Chloroquine
- Deferoxamine mesylate
- Ibuprofen
- Methyldopa

- Nitofurato in
- Phenazopyridine
- Phenophtalein
- Pyridium
- Red food color
- Rifampin
- Rhodamine B
- Sulfasalazine

4 Urates
Conclusions. The lack of hematuria is not predictive of absence of urolithiasis. Therefore, it may be misleading to judge on the efficacy of a given therapy only based on disappearance of hematuria. HU and hypercalciuria have to be suspected in children with dysuria and those with recurrent abdominal/flank pain and familial history of urolithiasis, although they have no hematuria.
Pink Urine (Uric Acid Crystals) from Increased Purines in Diet

- Children can have transient hyperuricemia with increased renal clearance.

Red Diaper Syndrome

This is the diaper of a one-month-old who was an NICU graduate. She was colonized with *Seratia marcescens*
Ben Dover

Ben is a 16-year-old male with the chief complaint, “My urine has been green the past two days.”

- Has been entirely well and other than green urine, asymptomatic
- Ben has no history of gall bladder disease
A “normal” urine specimen on the left; Ben’s urine on the right… No question about it… it certainly is green!
Ben Dover

- The family history is noncontributory
- Physical exam:
  - ABSOLUTELY NORMAL!

Except for...
Yikes!!! His tongue is green!
How about that!
Green urine and a green tongue

How do you figure that?

Are you ready for the answer?
Answer:

Chloretes Induced Green Urine

- Has been eating at least a six-pack of Chloretes daily for the last two days
- Ben has a new girlfriend and he wanted his breath to smell nice and fresh!
Differential Diagnosis: Green Urine

- Iodochlorhydroxyquine induced myelo-optic neuropathy
- Pseudomonas bacteremia
- Bile pigment
- Amitriptyline HCL
- Methocarbimol

Also...
Differential Diagnosis: Green Urine (continued)

- Dyes: indigo, carmine, phenol, methylene blue

And last but not least...

NChlorets
• Letter to the Editor in *JAMA*: Vol. 247 #1 Pg. 29 Jan 1, 1982.

And...
A wonderful reference... one that everyone should have in their files...