Pediatric Myths, Misnomers and Flat Out Lies: Part One

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Disclosure

I have no financial interests or relationships to disclose.

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What Is a Myth?

- A ***traditional or legendary story***, usually concerning some being or hero or event, ***with or without a determinable basis of fact or a natural explanation***
- Any ***invented*** story, idea, or concept
- An imaginary or fictitious thing or person
- ***An unproved or false collective belief that is used to justify a social institution***

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I Believed This Stuff!!

- Reading in the Dark Will Ruin Your Eyes
- Knuckle-Cracking Leads to Arthritis
- Swallowed Gum Takes Seven Years to Digest
- Chocolate Milk Comes from Brown Cows
- Crossed Eyes Will Get Stuck That Way
- Swim Too Soon After Eating and You'll Cramp up and Drown
- Watermelons Will Grow in Your Stomach from Swallowed Seeds
- Ice Cream Trucks Play Music Only When Out of Ice Cream

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Today's Myths

Intussusception	Bronchiolitis	Pyloric Stenosis
The Febrile Neonate	The Irritable Neonate	Pseudotumor

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Intussusception = Vomiting and Currant Jelly Stools

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ORIGINAL ARTICLE

Clinical Signs and Symptoms Associated With Intussusception in Young Children Undergoing Ultrasound in the Emergency Room

Heather M. Territo, MD, Brian H. Wrotniak, PT, PhD,*† Haiping Qiao, MBBS, MS,* and Kathleen Lillis, MD‡*

Objective: The purpose of this study was to evaluate all patients suspected of having intussusception and identify which signs and symptoms were associated with the disease.
Methods: We performed a retrospective review of 553 charts from 2006 to 2010 of patients' age 2 months to 5 years who had an abdominal ultrasound obtained to evaluate for intussusception. Charts were reviewed for signs and symptoms previously shown to be associated with intussusception.
Results: There were 452 patients (mean age, 21.5 months, 43% female) evaluated and 101 (22.3%) were found to have intussusception. Of the 18 signs and symptoms, crying (adjusted odds ratio [OR], 3.3; 95% confidence interval [95% CI], 1.3–8.1), abdominal mass (adjusted OR, 15.7; 95% CI, 4.4–55.3), pallor (adjusted OR, 6.5; 95% CI, 1.8–23.5), and vomiting (adjusted OR, 3.1; 95% CI, 1.4–6.5) were associated with disease confirmation in logistic regression analysis. The presence of all 4 clinical signs/symptoms together resulted in a 95% probability of intussusception. Intussusception was unlikely if all 4 clinical indicators were absent (probability = 1.6%).
Conclusions: The presence of crying, abdominal mass, pallor, and vomiting were clinical indicators of intussusception. Individually, none of these variables were helpful in confirming the diagnosis but in the presence of all 4, there is a 95% probability of having the disease. The absence of all 4 of these made the likelihood of having the disease very low.

if the intussusception is not reduced, the infant becomes progressively weaker and lethargic. Previous studies have shown that the typical presentation of abdominal pain, vomiting, rectal bleeding, and a palpable abdominal mass occurs in less than 25% of patients.[2,11]

Intussusception can often be a difficult diagnosis because many children do not present with the typical findings.[4,5,7] Several case reports have been published with atypical presentations of intussusception including lethargy, hypotonia, restlessness, convulsions, sudden alterations of consciousness, and poor feeding.[2,5,6,9] The variability in the clinical presentation of children with intussusceptions contributes to the difficulty in accurately identifying children with this condition.

The purpose of this study was to derive reliable clinical predictors of intussusception to help with early recognition and diagnosis of disease. Previous studies have looked at children with the diagnosis of intussusception to determine predictive signs and symptoms. Most of these studies have only examined patients with a confirmed diagnosis. We found 3 studies that looked at all patients undergoing air contrast enema[8,12,13] but these failed to find any useful predictors other than late findings, such as rectal bleeding. A recently published prospective study examined all pa-

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TABLE 1. Demographic Characteristics for all Charts Reviewed

Demographic Variable	Charts	% of Patients
Average age, mo	452	21.5 (SD, 16.5)
Sex (n, % female)	452	196 (43)
History of previous illness (n, %)	452	69 (19)
Average duration of symptoms, h	452	65.4
Range		1–1440
Vomiting	451	53
Bilious vomiting	122	10
Diarrhea	451	35
Abdominal pain	342	78
Crying	383	67
History of bloody stool	382	20
Poor oral intake	382	59
History of seizure	200	3
History of syncope	173	1
Fever	448	31
Pallor on examination	347	7
Altered mental status	446	2
Lethargy	446	12
Abdominal mass on examination	344	8
Abdominal distention on examination	401	11
Gross blood on rectal examination	110	16
Occult blood on rectal examination	64	48
Decreased tone on examination	396	2

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Results (452 Patients/101 Had Disease (22%)

Of 18 signs and symptoms crying, abdominal mass, pallor and vomiting were associated with disease

The presence of all clinical symptoms/signs together resulted in a 95% probability of intussusception

Intussusception was unlikely if all 4 clinical indicators were absent

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Lies Your Parents Told You About Intussusception

- ***"Vomiting*** predominates"
- "***Currant jelly stools*** are prevalent"

- The real truth:
  - Consider intussusception in any child with irritability and vomiting ***(without diarrhea)*** especially if ***lethargy*** occurs between episodes
  - ***Ultrasound*** is definitive, non invasive and relatively inexpensive

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Differential Diagnosis of Infantile Lethargy

- Run through the following mnemonic:
  - A Alcohol (level)
  - E Epilepsy
  - I Insulin (Munchausen By Proxy)
  - ***I*** ***Intussusception (vomiting/irritability)***
  - O Overdose
  - U Uremia (labs)
  - T Trauma
  - I Infections
  - P Psychiatric
  - S Shock

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Bronchiolitis – Hold the Albuterol, Spare the Child

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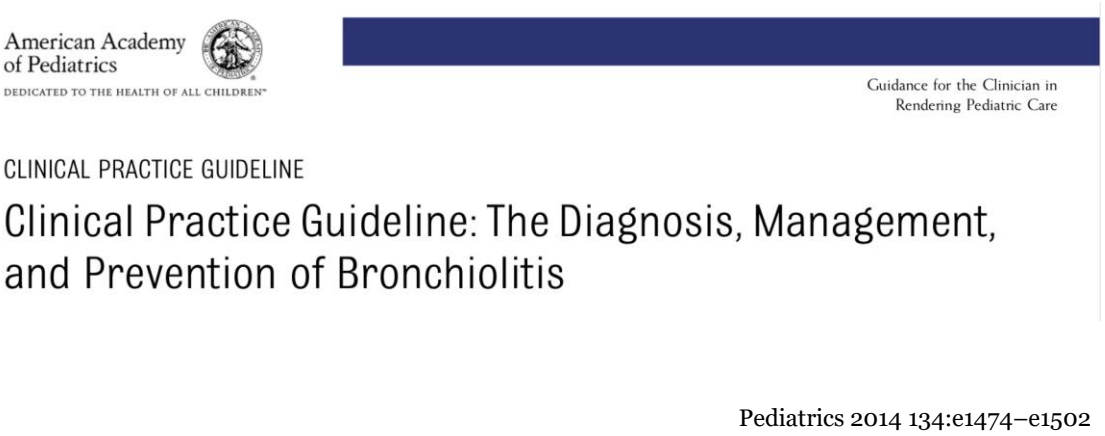

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AAP Diagnostic Guidelines

- When clinicians diagnose bronchiolitis on the basis of history and physical examination, ***radiographic or laboratory studies should not be obtained routinely***

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AAP Treatment Guidelines

- Clinicians should ***not administer albuterol*** (or salbutamol) to infants and children with a diagnosis of bronchiolitis
- Clinicians should ***not administer epinephrine*** to infants and children with a diagnosis of bronchiolitis
- ***Nebulized hypertonic saline should not be administered*** to infants with a diagnosis of bronchiolitis in the emergency department

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Real Life Treatment Decisions

- Beta 2 Agonists

  –SOME WILL RESPOND----"no one ever died from one albuterol treatment"

  –Will help the infant with beta 2 agonist reversible bronchospasm

- Epinephrine (nebulized)

  –May stave off intubation

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AAP Treatment Guidelines

- Clinicians should ***not administer systemic corticosteroids*** to infants with a diagnosis of bronchiolitis in any setting

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Pyloric Stenosis = Palpable Olive and Metabolic Alkalosis

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Once Upon a Time

- All infants with pyloric stenosis
  - Had classic signs
  - Had metabolic alkalosis
  - Necessitated a barium swallow

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The Changing Clinical Presentation of Hypertrophic Pyloric Stenosis: The Experience of a Large, Tertiary Care Pediatric Hospital

Clinical Pediatrics
50(3) 192–195
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SAGE

Miguel Glatstein, MD[1], Gary Carbell, Sirisha Kusuma Boddu, MD[1], Annalucia Bernardini, MD[1], and Dennis Scolnik, MB, ChB[1]

Clinical Pediatrics 50(3) 192 –195 2011

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Study Conclusions

- Reviewed the clinical and laboratory data from cases of hypertrophic pyloric stenosis (HPS) diagnosed at their institution from 2006 – 2008
- A total of 118 patients were included in this study
- ***An "olive" was palpated in only 13.6% of cases***

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Study Conclusions

- This is in contrast to older studies, where more than 50% of the patients were reported to have a palpable "olive" depending on when the study was conducted
- In patients from this institution, ***hypochloremia was present in 23% and alkalosis in 14.4%, which are less frequent than the incidence of these abnormalities in older studies***
- The reason for this change appears to be the ***frequent use of ultrasound***

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After a Septic Work Up in Febrile Infants < 30 Days, If the Labs are Normal, They Can go Home

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Once Upon a Time

- **All infants less than 30 days with a temperature greater than 38C received a full septic workup and admission**

- Key concepts:
  - You can't trust these kids clinically
  - Laboratory results may be unreliable
  - The stakes are very high if you're wrong

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ORIGINAL STUDIES

Predicting Severe Bacterial Infections in Well-Appearing Febrile Neonates

Laboratory Markers Accuracy and Duration of Fever

Silvia Bressan, MD, Barbara Andreola, MD, Francesca Cattelan, MD, Tiziana Zangardi, MD, Giorgio Perilongo, MD, and Liviana Da Dalt, MD

Pediatric Infect Dis J 2010;29: 227–232

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Objectives

- To assess the diagnostic accuracy of
  - WBC
  - absolute neutrophil count (ANC)
  - C-reactive protein (CRP)
- in detecting severe bacterial infections (SBI) in well-appearing neonates with early onset fever without source (FWS)
- ***In relation to fever duration***

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Methods

- Observational study
- Previously healthy neonates 7 - 28 days of age, consecutively hospitalized for FWS for less than 12 hours to a tertiary care Pediatric Emergency Department, over a 4-year period
- Laboratory markers were obtained upon admission in all patients and repeated 6 to 12 hours ***after admission in those with normal values on initial determination***

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Results

- 99 patients studied
- SBI documented in 25 (25.3%) neonates
- 62 patients presented had laboratory markers on initial determination

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Results

	AROC Initially	AROC at 12 Hours
CRP	.78	.99
ANC	.77	.85
WBC	.59	.79

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Conclusions

- In well-appearing neonates with early onset FWS, laboratory markers are more accurate and reliable predictors of SBI ***when performed after > 12 hours of fever duration***
- ANC and especially CRP resulted better markers than the traditionally recommended WBC

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Present Day Neonatal Fever

- Threshold temperature is 100.3
- ALL infants receive
  - CBC
  - Blood, urine and CSF cultures (including HSV)
  - IV Cefotaxime and Ampicillin
  - IV Acyclovir
- ALL are admitted

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The Afebrile Irritable Young Infant Generally Needs Only a Careful PE, Not Lab Tests

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The Irritable Infant

- You all know the checklist:
  - Intracranial mishaps
    - Meningitis/ Subdurals
  - Corneal Abrasion
  - Rib Injuries
  - Hernias
  - Hair Tourniquets

WHAT ELSE?

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ARTICLE

The Crying Infant: Diagnostic Testing and Frequency of Serious Underlying Disease

Stephen B. Freedman, MDCM, MSc, FRCPC, Nesrin Al-Harthy, MD, Jennifer Thull-Freedman, MD, MSc

Pediatrics 2009 123: 841-848

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Results

237 patients

12 (5.1%) children had serious underlying etiologies with ***urinary tract infections being most prevalent*** (n =3)

Of the 574 tests performed, 81 (14.1%) were positive

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Results

Among children <1 month of age, the positive rate of urine cultures performed was 10%

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Conclusions

- History and physical examination remains the ***cornerstone*** of the evaluation of the crying infant and should drive investigation selection
- Afebrile infants in the first few months of life should undergo ***urine evaluation***
- Other investigations should be performed on the basis of clinical findings

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Pseudotumor = Obese Adolescent Females

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ORIGINAL ARTICLE

Clinical Characterization of Idiopathic Intracranial Hypertension in Children Presenting to the Emergency Department

The Experience of a Large Tertiary Care Pediatric Hospital

Miguel M. Glatstein, MD, Asaf Oren, MD,† Gil Amarilyio, MD,† Dennis Scolnik, MB, ChB,‡§ Amir Ben Tov, MD,† Aiala Yahav, MD,† Arik Alper, MD,† and Shimon Reif, MD†*

Pediatr Emer Care 2015;31: 6–9

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Results

Ages ranged from 2 - 16.5 years

30 males (46.8%) and 33 females (53.2%) were identified

30 prepubertal with a male-female ratio of 1:0.56	33 pubertal with a male-female ratio of 1:2

There were no significant differences between the 2 age groups in proportions of children in the ***3 predefined weight categories***

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Conclusions

- IIH should be ***considered in any child with new-onset headache or visual disturbance***, irrespective of age, sex, weight, or the presence of known predisposing factors
- When IIH is suspected, ***neuroimaging*** should be performed promptly to exclude secondary causes of this condition because ***IIH in children remains a diagnosis of exclusion***

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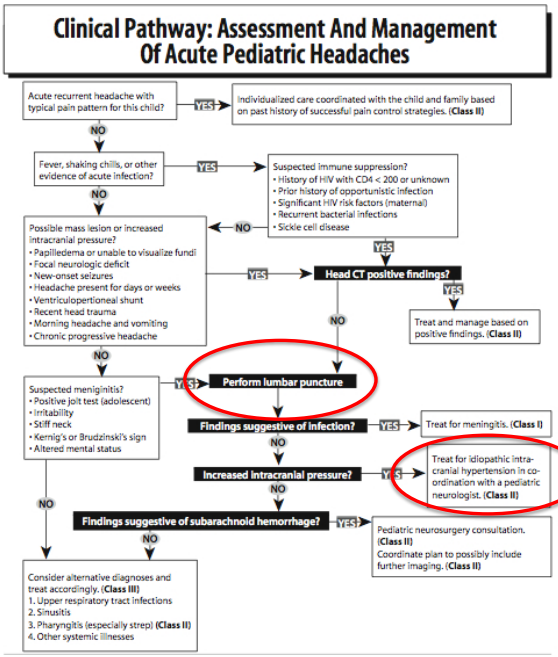

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Summary Points

- Lethargy is associated with intussusception
- Some bronchiolitis will respond to Albuterol
- Pylorics rarely present with an olive
- You cannot trust the labs in neonatal fever
- Pseudotumor occurs in thin young males as well

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