Acute Paediatrics.

Not just ABC

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Sunshine Hospital
A Cute Paediatrics
Objectives

Paediatric clinical assessment
The role of the Emergency Department
Work / Life balance
The Universal (Paediatric) History

- Maternal
- Pregnancy
- Labour and Delivery
- Perinatal
- Growth/Development
- Past Medical History
Family History

Genogram

CF
Examination

Playful but purposeful
The 180 degree manoeuvre
Investigation

Is it really needed?
Investigation

Readiness

Think about your approach
- Patient
- Family
- Staff (Call for help)
- Equipment
Investigation

Readiness

Don’t set up in front of the child
Don’t show needles
The role of the ED
Acute illness management
5 week old boy

Background

- Maternal History
  28 yr G2 P2 without significant PHx
  Ultrasounds normal; GBS neg; Rubella immune; Other serology negative; Diet controlled GDM

- Pregnancy
  Spontaneous onset at 37/40; NVD

- Labour and Delivery
  Jaundice: phototherapy for 24 hours;
  Urine/BM normal

- PHx
  No vaccines; normal baby check

- Growth/Development
"I hate the term anti-vax. It's so negative."

"How about pro-disease."
<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal History</td>
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<tr>
<td>Perinatal</td>
<td>No vaccines; normal baby check</td>
</tr>
<tr>
<td>PHx</td>
<td>Breast feeding with formula top ups; Gaining weight; No developmental concerns</td>
</tr>
<tr>
<td>Growth/Development</td>
<td></td>
</tr>
</tbody>
</table>
5 week old boy

Presentation

- Short history of rapid breathing
- minimal cough, minimal rhinorrhea
- no reported fever (tactile or measured)
- feeding reduced as he would pull away from the breast and the bottle after a few sucks
5 week old boy

Examination

- **Vital signs**: Afebrile; HR 170; RR 40-60; Sats 97-100% in air
- **Airway**: No stridor; breathing with pursed lips; “puffing”; mild resp distress
- **Breathing**: CRT <2 sec; BP 66/44; pulses normal; no murmur
- **Disability (Neuro)**: Quiet; Responds to Mum’s voice
- **Exposure (Secondary survey)**: Cutaneous

Examination of a 5-week-old boy reveals:

- **Vital signs**: Afebrile; HR 170; RR 40-60; Sats 97-100% in air
- **Airway**: No stridor; breathing with pursed lips; “puffing”; mild resp distress
- **Breathing**: CRT <2 sec; BP 66/44; pulses normal; no murmur
- **Disability (Neuro)**: Quiet; Responds to Mum’s voice
- **Exposure (Secondary survey)**: Cutaneous
Course

- Spiked fever
- completed septic screen
- IV flucloxacillin and cefotaxime
- bolus of saline
- ongoing respiratory issues
  - Upper airway obstruction
  - Nasopharyngeal airway - improved sleep; more settled but frequent suction required
- NETS to NICU at RCH
Course

• no surgical treatment required
• Cultures
  • blood grew streptococcus
  • CSF clear
# 6 month old boy

## Background

<table>
<thead>
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<th>Category</th>
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<tbody>
<tr>
<td>Maternal History</td>
<td>30 yr G4 P3; PHx Eczema</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>Ultrasounds normal; GBS neg; Rubella immune; Other serology negative; Diet controlled GDM</td>
</tr>
<tr>
<td>Labour and Delivery</td>
<td>Spontaneous onset at term; LSCS for fetal distress</td>
</tr>
<tr>
<td>Perinatal</td>
<td>Nil Significant</td>
</tr>
<tr>
<td>PHx</td>
<td>Vaccines up to date; No surgery; URTIs</td>
</tr>
<tr>
<td>Growth/Development</td>
<td>Following centiles for length, weight and HC. Rolls. Sits and slumps forward</td>
</tr>
</tbody>
</table>
6 month old Presentation

- 3 days rhinorrhea
- 2 days cough, noisy breathing
- 1 day reduced feeding and urine output
- Increased work of breathing
  - “sucking in at the neck”
  - “tummy moving while he’s breathing”
6 month old Examination

• Vital signs
  • T 38.3 P 172 RR 50-70 Sats 88-92%
• Airway
  • No stridor, No tongue swelling
• Breathing
  • Head bobbing; IC/SC recession; Abdominal wall breathing; Inspiratory crackles; Expiratory wheeze
• Circulation
  • Cool peripheries; normal pulses; CRT < 2 sec; Normal HS
• Disability (Neuro)
  • Quiet, lethargic baby; eyes open; moving limbs
• Exposure (Secondary survey)
  • Throat red; Conjuctival injection; Abdomen soft, liver ptosed; No other mass; dry mucus membranes;
What is the diagnosis?
Bronchiolitis

• Management Principles

A

B  OXYGEN

C  FLUIDS

D

E  FLUIDS
Bronchiolitis

- Leading admission cause in infants
  Shay *JAMA* 1999 & Pelletier *Pediatrics* 2006

  - Victoria 2006 - 2280 admissions

- No clearly effective drug intervention, supportive care

- Fluid replacement therapy required in 30%
  Johnson *Pediatrics* 2002

- Variable practice in Australia and NZ: PEM specialist
  survey 48% NGT; 52% IV
  Babl *PEC* 2008

- No RCT evidence
  Smyth *Lancet* 2006
The Comparative Rehydration in Bronchiolitis (CRIB) study
A/Prof Ed Oakley
for PREDICT

- Multicentre RCT in Australia and New Zealand (PREDICT Network)
- Winter 2009-2011
- Infants 2 to 12 months
- Clinical diagnosis of bronchiolitis and fluid replacement requirement
Intervention

IV hydration - 0.45% saline with dextrose

OR

NG hydration - gastrolyte then normal feed
Results

759 infants randomised

<table>
<thead>
<tr>
<th>IV HYDRATION</th>
<th>NG HYDRATION</th>
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<tbody>
<tr>
<td>378</td>
<td>381</td>
</tr>
<tr>
<td>301 received allocated intervention</td>
<td>357 received allocated intervention</td>
</tr>
<tr>
<td>77 did not receive allocated intervention</td>
<td>24 did not receive allocated intervention</td>
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</table>
Results

- Demographics and baseline clinical characteristics were similar
Results

Number of insertion attempts for study-assigned method of rehydration

![Bar chart showing insertion attempts for NGT and IV methods. NGT: 85.1% with 1 attempt, 9.3% with 2 attempts, 5.6% with 3 or more attempts. IV: 56.1% with 1 attempt, 23.5% with 2 attempts, 20.4% with 3 or more attempts.]
CRIB study
Conclusions

• No difference in LOS between NG and IV hydration

• No difference in adverse events between NG and IV hydration

• More likely to insert NG tube on first attempt and, if not, to have fewer attempts at insertion
Acute Injury Management
5 yo boy
Fall on outstretched hand
(FOOSH)
5 yr old boy

Background

- Maternal History
  - Mo has lupus; currently stable

- Pregnancy
  - Aspirin; U/S;

- Labour and Delivery
  - Elective LSCS at 38+

- Perinatal
  - Transient bradycardia – congenital heart block.

- PHx
  - Vaccines up to date; Tonsillectomy

- Growth/Development
  - Met milestones and followed age appropriate percentiles

- Family & Social History
  - Parents separated; Occurred in Mum’s care and presents with Dad.
Adolescent Screening
Not just for older children

H  Home
E  Education  Employment
A  Activities
D  Depression  Drugs (legal; illegal)
S  Suicidality  Sexuality  Spirituality
5 year old boy
Presentation

• Fall from Skateboard
5 year old boy
Examination

- Vital signs
  - T 36.9 P 90 BP 140/65 RR 18 Sats 97%
- Airway
  - No stridor, No tongue swelling
- Breathing
  - No respiratory distress; clear auscultation
- Circulation
  - Cool peripheries; normal pulses; CRT < 2 sec; Normal HS
- Disability (Neuro)
  - Quiet, Alert; GCS 15; moving limbs except L U/L
- Exposure (Secondary survey)
  - Obvious deformity left forearm; ulnar and radial pulses palpable; altered sensation in fingers (radial nerve distribution
Limb Injury

Management Principles

A
B
C
D
E
Forearm deformity +++
Neurovascular assessment
5 year old boy
Management

- Analgesia
  - Non-Pharmacological
    - splint
    - explanation
    - engagement without being contrived
    - music
  - Pharmacological
    - oral
    - intranasal
    - inhaled
    - intravenous
5 year old boy
Management

- Fracture management
  - Manipulation
    - In Emergency
    - In Theatre
- Immobilisation
- Follow up
Uncertainty

Parental concern

GP concern
“By the way,...”
Presentations to ED

• Age distribution of emergency department presentations in Victoria
  Gary Freed et al EMA 2015; 27(2):102–7

• Paediatric ED referrals from primary care
What this is doing in the ED
Education

- Preaching to the choir
- Advocacy
- Team approach
- Health care continuum
Work / Life Balance
Choose a job you love, and you will never have to work a day in your life.

Confucious
Another case
74 year old female
Family History

[Diagram of a family tree with red squares and circles indicating medical practitioners]

○ □ = medical practitioner
WHAT WOULD YOU DO?

- Call GP?
- Send for imaging?
- Send to ED?
- Call a relevant colleague?
WHAT DID I DO?

Send to ED?

Call a relevant colleague?
And then...
pancreatic adenocarcinoma
And then...
“Life is what happens to us while we are making other plans”
Alan Saunders Reader’s Digest 1957
John Lennon Beautiful Boy, Double Fantasy 1980

Issues - Distance
“Life is what happens to us while we are making other plans”
Alan Saunders Reader’s Digest 1957
John Lennon Beautiful Boy, Double Fantasy 1980

Issues
- Priorities
  - family
    - normalisation for children (one in year 12)
  - work
- exercise
“Life is what happens to us while we are making other plans”

Alan Saunders Reader’s Digest 1957
John Lennon Beautiful Boy, Double Fantasy 1980

Issues

— Fatigue
  • Actual tiredness
  • Emotional fatigue
  • Uncertainty
Something like this will happen to all of us

• And it will usually be unexpected

• How do we manage this?

• Can we manage this?

• Strategies?
Training

Knowledge

Skills

Attitudes

Nurse, Doctor...
Routines we know

- Reading
- Tutorials
- Exams
- Work Based Assessments
- Term Reports
Attitudes

Are these important?
Why?
Can these be taught?
How do we teach these?
How do we assess these?
Summary

• Develop a system to assist with diagnosis and management

• Communicate

• Ask questions
  • including, “Are you ok?”