A baby with a bruise
Dr Laura Sumners
Figure 6.1: Age–sex distribution of patients at encounter, 2014–15

Table 6.1: Characteristics of the patients at encounters

<table>
<thead>
<tr>
<th>Patient characteristics</th>
<th>Number</th>
<th>Per cent of encounters (n = 98,728)</th>
<th>95% LCL</th>
<th>95% UCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (missing)(a)</td>
<td>(880)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>41,960</td>
<td>42.9</td>
<td>42.0</td>
<td>43.7</td>
</tr>
<tr>
<td>Females</td>
<td>55,888</td>
<td>57.1</td>
<td>56.3</td>
<td>58.0</td>
</tr>
<tr>
<td>Age group (missing)(a)</td>
<td>(855)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>1,847</td>
<td>1.9</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>1–4 years</td>
<td>4,362</td>
<td>4.5</td>
<td>4.2</td>
<td>4.7</td>
</tr>
<tr>
<td>5–14 years</td>
<td>5,097</td>
<td>5.2</td>
<td>4.9</td>
<td>5.5</td>
</tr>
<tr>
<td>15–24 years</td>
<td>8,014</td>
<td>8.2</td>
<td>7.8</td>
<td>8.6</td>
</tr>
</tbody>
</table>
Case 1

- 5 week old baby boy
- Brought for review by parents with ? Rash to arms
- You look and see the following:

- What further information would people want to know?
History and examination

- Baby has been well
- No fevers or infective symptoms
- Rash first noted in the afternoon by Mother
- No history of injury
- No change to the “rash”
- Born term, SVD, normal antenatal course, no post natal complications
- No sick contacts

- Full examination normal
- 3 linear bruise’s and 1 oval shaped bruise to the left forearm
What is a bruise?

- A bruise can be defined as
  
  “a hurt or injury to the body by a blunt or heavy instrument causing discolouration, but no laceration of the skin”
How will you manage this?

- Order some blood tests  
  (example FBC, coags)
- Reassure and discharge
- Phone a friend
- Refer to your local hospital
What happened in real life

- Seen in emergency
- FBC normal
- Observed overnight
- Reviewed by Child Protection team the next day
- Diagnosed with sucking bruises
- Discharged home
Aging of bruises

A. < 24 hours old
B. 24 – 48 hours old
C. 2 – 5 days old
D. > 5 days old
Aging of bruises

• A bruise can not be accurately aged in children

• Colour can be affected by skin colour, location, vascularity of area and severity of force.

• Yellow bruising was not seen before 24 hours

• Red, blue and purple colours were more commonly seen in bruises <48hrs old, however these colours were also seen in 30% of bruises >7 days old

• Yellow, brown and green colours were more commonly seen in bruises >7 days old, however these colours were seen in 23% of bruises <48hrs old
Case 2

• 8 week old baby boy
• Mum brought for review as pale and noticed chest “popping”
• Noted a bruise to the forehead, 3 to the back and one to the abdomen
What happened

- No investigations performed
- Diagnosed with RSV bronchiolitis
- Discharged home on oral amoxicillin and prednisone
And next . .

- Re-presented 5 days later with unexplained right upper leg swelling
Skeletal Survey

[Image of an X-ray of the chest]
Outcome
What are the patterns of bruising suggestive of physical child abuse?

- Bruises that are seen away from bony prominences
- Bruises to the face, back, abdomen, arms, buttocks, ears, neck, and hands
- Multiple bruises in clusters
- Multiple bruises of uniform shape
- Bruises that are accompanied by petechiae, in the absence of underlying bleeding disorders
What are the patterns of bruising suggestive of physical child abuse?

Bruises that carry the imprint of implement used or a ligature
What are the patterns of bruising suggestive of physical child abuse?

Bruising in children who are not independently mobile

Bruising in babies
Bruises - distribution

• Accidental

• Non-accidental
Mandatory Reporting

- Mandatory reporting is a legislative requirement

- Doctors and nurses must immediately notify the chief executive of the DChS of any reasonable suspicion that the child
  - Has suffered, is suffering, or is at unacceptable risk of suffering, significant harm caused by physical or sexual abuse
  - May not have a parent able and willing to protect them

- What is a reasonable suspicion
  - A concern of well founded suspicion that is based on the presence of signs, disclosures, injuries, symptoms or behaviour that raises concerns about the safety, health and well being of a child
  - It is not our responsibility to prove abuse or neglect nor who might have caused it
Changes to Reporting

• Dual reporting pathway:
  – Diverted from the statutory system at the reporting stage and at the notification stage. Family need to consent.

• Child Protection reporting Guide

• Change to mandatory reporting:
  – Report of **suspected child in need of protection** (previously report of suspicion of child abuse or neglect based on harm or risk of harm).
  – Only **sexual abuse** and **physical abuse** are mandated for reporting. (does not stop report of emotional harm or neglect)
Make a report to Child Safety

This site provides a means of reporting child protection concerns to the Department of Communities, Child Safety and Disability Services.

Report child protection concerns to Child Safety

Start report form

Use this form to report child protection concerns to the Department of Communities, Child Safety and Disability Services.
How to do a report

- Complete online “Report of Suspected Child in Need of Protection”
  - Take note of token number
  - Should contain as much information as possible
  - Be clear in identifying harm or risk of harm
  - Identify risk factors and protective factors
  - Consider who will be reading the report, beware medical jargon and abbreviations

- Recommended a verbal account given to CS Regional Intake Services
What happens when you do a report?

- We report to DCCSDS (we do not make a notification)

- Not all reports are screened in for investigation by DCCSDS.

- Responses/outcomes by DCCSDS:
  - Intake Enquiry
  - Child Concern Report
  - Notification: 24 hrs, 5 day or 10 day response
TAKE HOME MESSAGES
QUESTIONS?
References

2. Child Abuse, Medical Diagnosis and Management 3rd edition, Reece RM and Christian CW, 2009
3. Are there any patterns of bruising in childhood which are diagnostic or suggestive of abuse? A systematic review, Maguire et al, Arch Dis Chil 2005; 90: 182-186
5. www.core-info.cardiff.ac.uk
Can a bruise be aged?

- A bruise can not be accurately aged in children\textsuperscript{1,3}
  - A bruise can take up to 2 weeks to heal.
  - Colour changes reflect breakdown of haemoglobin to biliverdin and bilirubin.
  - Colour can be affected by skin colour, location, vascularity of area and severity of force.
  - Red, blue and purple colours were more commonly seen in bruises <48hrs old, however these colours were also seen in 30% of bruises >7 days old
  - Yellow, brown and green colours were more commonly seen in bruises >7 days old, however these colours were seen in 23% of bruises <48hrs old
  - Bruises of identical age and cause on the same person may change colour at different rates
• Different colours appear in the same bruise at the same time \(^1,^3\)
• Not all colours appear in every bruise \(^1,^3\)
• In general red / blue and purple colours were more commonly seen in bruises less than 48 hours old and yellow, brown and green bruises were most often seen in bruises over seven days old. However, the converse of this also applied: red / blue and purple were identified in up to 30% of observations in bruises older than seven days and yellow/brown or green were seen in up to 23% of bruises less than 48 hours old \(^1\)
• There is considerable variation in the way different observers interpret and describe colour\(^1\)
• Yellow bruising was not seen before 24 hours \(^1\)
• Yellow only appeared in bruises over 48 hours old \(^2\)
• One child had a blue bruise on the arm and a green / yellow bruise on the leg that were sustained at the same time \(^1,^3\)
• The accuracy with which observers estimate the age of a bruise from a photograph is little more than 50% \((24/44)\) \(^1,^3\)
• The accuracy of estimating the age of a bruise to within 24 hours in vivo was only 40\%
My Key Take home Messages – this page is a note for me, not a slide in the talk

- Fully examine babies – undress head to toe
- A bruise can indicate more serious injuries not always apparent on examination
- Generally refer for assessment by CP team
What is a bruise?

- A bruise is due to bleeding within the skin, most often due to blunt force trauma.
- Bruising consists of a collection of blood that has leaked from blood vessels damaged by mechanical impact.
- A bruise can be defined as “a hurt or injury to the body by a blunt or heavy instrument causing discolouration, but no laceration of the skin”
- Bruises consist of blood escaping from ruptured capillaries and small veins spreading into the surrounding tissue.