Cases

Part 2

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CASE

1 My baby is burning up

Jay Evans, age 14 months
PMH: nil of note; mild eczema at age 6 months
Medication: nil

This afternoon Jay is brought in by his mother who tells you he's burning up. He's had a high fever since yesterday evening and wouldn't have any breakfast today. He only picked at his lunch. Jay seems reasonably happy sitting in his buggy.

What do you do now?

- Take a full **history of the current episode**.
- Has the **temperature** in fact been taken, and if so how (a forehead strip is inaccurate), and what was it? Have the parents **tried** giving him anything so far?
- Ask questions to establish **how ill** this child is: is he playing, socializing, smiling? Is he more drowsy than usual? Children with a fever may be a bit subdued but they should be alert. Is there evidence of dehydration? Ask the mother if his nappies have been drier than usual.
- Ask about **other symptoms such as cough, hoarse voice and rashes**. You already know his appetite is affected, so enquire about diarrhoea and vomiting.
- Establish his **immunization status**. This should be in the medical records (see Table 1.1).
- Ask about **contact** with anyone ill, and about foreign **travel**.

Ms Evans tells you that she didn't take the temperature, but she just knows Jay has a fever. Apart from being off his food, he vomited once after lunch, about two hours before coming to see you. He isn't coughing, and doesn't have hoarseness or diarrhoea. There may have been a rash last night, but Ms Evans thinks it is just Jay's eczema making a comeback. There has been no travel. Nobody at home has been unwell lately, but, ever since big sister Megan began playschool, both she and Jay have had a lot of snuffles.

Do you examine this child?

Yes. Many children dislike being examined, especially when they don't feel well, but don't rush or skimp. You need to check for red flags that tell you this child may be seriously ill, and this includes taking the temperature.

You must also look for clues as to the cause of the fever. Remember that this may be the only chance to assess this child during his illness, and it must be done properly. The child will be more comfortable if you examine him on his mother's lap, and you don't undress him all at once: just get the mother to remove the clothes from his top half when you examine his chest, and the bottom half later in the examination.

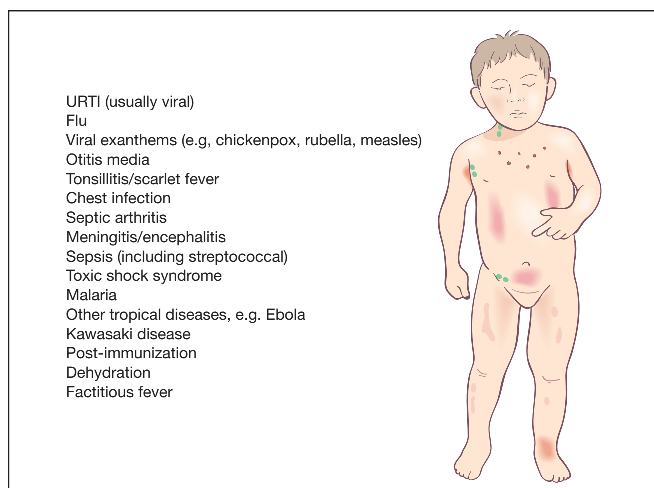

Figure 1.1 Causes of fever.

Key point
Whenever you see a child, always ask yourself 'Is this child ill?'

List at least six important signs you should look for in determining how ill a child is.

The traffic light system can be useful for assessing febrile children (see Resources), but it is easier to remember red flags such as:

- Fever >38 °C in baby under 3 months or fever >39 °C in baby 3–6 months.
- Won't interact or socialize.
- Difficult to rouse.
- Pale or mottled skin.
- Dry mucous membranes.
- Reduced skin turgor.
- Capillary refill time greater than 3 seconds.
- Respiratory rate:
  - >60/min if under 6 months
  - >50/min if between 6 and 12 months
  - >40/min for children over 12 months.
- Indrawing of intercostal spaces.
- Grunting.
- Tachycardia:
  - >160/min if under 12 months
  - >150/min if 12–24 months old
  - >140/min if 2–5 years old.
- Non-blanching rash.
- Inability to move a limb.
- Bulging fontanelle.
- Focal neurological signs.
- High-pitched cry.
- Low oxygen sats

Can you now reassure the mother that it is only a virus?

No. Jay has a moderately high temperature, is off his food and you don't know what's wrong. The fact that you haven't found a focus of infection isn't necessarily reassuring. It could be a UTI, or the evolving stages of an illness, before any localizing signs appear. He may have one of the childhood exanthems, or septic arthritis or some other potentially serious infection.

Key point
Always remember that around half of all children with meningococcal disease aren't diagnosed at the first consultation.

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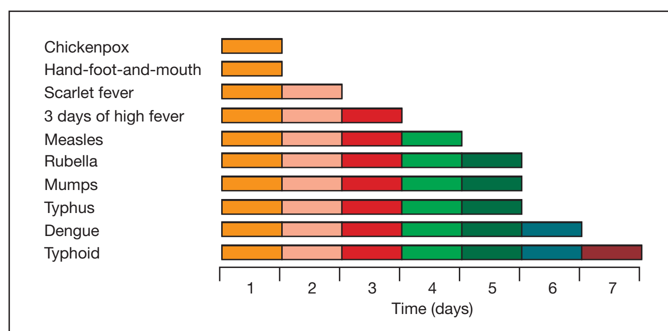

Figure 1.2 Usual prodromal phases of some infections, during which there may be fever and malaise.

What one test do you consider doing now?

Urine dipstick for WBCs, protein and nitrites.

> **Childhood UTIs**
>
> Most occur in the first year of life and present with vague symptoms such as fever (which can be recurrent) or vomiting, lethargy and poor feeding.
>
> By the age of 11 years, 1% of boys and 4% of girls will have had a UTI.
>
> ► Over 30% of children with UTI have an underlying abnormality such as vesico-ureteric reflux, urethral valve or renal pathology. There is sometimes a family history.

Unfortunately Jay will not pass urine on demand. Your choice lies between giving the mother a bag to collect urine, or a sample pot and asking her to leave the child's nappy off until she has managed to collect a sample. Either way, you are unlikely to get a urine sample while he is still in the surgery.

Ms Evans looks at you expectantly. What do you advise her to do?

As there are no red flags (yet), it is reasonable to leave the urine sample till the morning. Meanwhile advise Ms Evans to keep Jay cool by dressing him in lightweight clothes and giving him plenty of fluids. Tepid sponging is unhelpful and can be unpleasant.

If the temperature rises further or he seems uncomfortable, she could give paracetamol or ibuprofen in a formulation appropriate to his age, but fever is a normal physiological response to inflammation and it does not always need lowering.

It is wise to keep him away from other children, for example at nursery.

Give Ms Evans clear advice about when to return, and make sure she understands which symptoms are important. Include ► **drowsiness**, ► **clammy skin** and ► **rapid breathing**. Many parents fixate on the presence or absence of a ► **non-blanching rash** in meningitis/septicaemia and fail to realize that their child's general condition is at least as significant.

Table 1.1 Chart of routine childhood immunizations.

When to immunize	Diseases protected against	Immunization site
Two months old	Diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b (Hib)	Thigh
	Pneumoccocal disease	Thigh
	Rotavirus	By mouth
Three months old	Diphtheria, tetanus, pertussis, polio and Hib	Thigh
	Meningococcal group C disease (MenC)	Thigh
	Rotavirus	By mouth
Four months old	Diphtheria, tetanus, pertussis, polio and Hib	Thigh
	Pneumococcal disease	Thigh
Between 12 and 13 months old – within a month of the first birthday	Hib/Men C	Upper arm
	Pneumococcal disease	Upper arm
	Measles, mumps and rubella (German measles)	Upper arm
Two, three or four years old	Influenza	Usually nasal vaccine
Three years four months old or soon after	Diphtheria, tetanus, pertussis and polio	Upper arm
	Measles, mumps and rubella	Upper arm
Girls aged 12 to 13 years	Cervical cancer caused by HPV types 16 and 18 (and genital warts caused by 6 and 11)	Upper arm
Around 14 years old	Diphtheria, tetanus and polio	Upper arm
	MenC	Upper arm

>
>
> **Tip**
>
> Remember that things change quickly with children. Safety-netting can save a young life, and could also save you from a serious complaint against you.

As it turns out, Jay's urine is normal the following morning. However his fever continues and he is irritable. When you see him two days later, he still has no focus of infection, and no red flags. Ms Evans has done some reading online and asks you if it is Kawasaki disease.

What are the main features of Kawasaki disease?

- High fever, often abrupt in onset, with irritability.
- Inflammation and irritation of the lips, mouth and/or tongue.
- Erythema, oedema and/or desquamation of the extremities.
- Bilateral dry conjunctivitis.
- Widespread non-vesicular rash.
- Cervical lymphadenopathy >1.5 cm in size.

To make the diagnosis, you would need fever and at least four of the other criteria. Kawasaki disease is rare but 80% of cases occur in the under-fives. It must be treated, usually as a paediatric or paediatric cardiology inpatient, to prevent complications such as coronary artery aneurysm.

Jay has none of the other features. He improves over the next couple of days without a precise diagnosis being made. When she comes to see you, you take the opportunity of mentioning routine immunizations.

Resources

NICE Feverish illness in children: Assessment and initial management in children younger than 5 years.
http://www.nice.org.uk/guidance/CG160
http://pathways.nice.org.uk/pathways/feverish-illness-in-children#content=view-node%3Anodes-use-the-traffic-light-system-to-assess-risk-of-serious-illness

NICE Urinary tract infection in children: Diagnosis, treatment and long-term management.
http://www.nice.org.uk/Guidance/CG54

Kawasaki disease Patient UK.
http://www.patient.co.uk/doctor/kawasaki-disease-pro