

## CASE FIVE

Short case number: 3\_28\_05

Category: Musculoskeletal & Skin

Discipline: Paediatrics

Setting: Emergency Department\_rural

Topic: Purpuric rashes in children

### Case



You are the GP in a small rural town. Sienna McKenzie, is 3 years old, her mother rang you in a panic this morning because Sienna has developed a rash “*which looks like bruises*” over her legs, she has been a little unwell the last 2 days with a mild fever and coryzal symptoms. You advised to take her straight to the ED and you would meet her there.

### Questions

1. You observe that Sienna has a purpuric rash developing over her lower limbs, what would be your main concern and why?
2. What are purpura and what can cause purpuric rashes in children?
3. What are the key clinical features that would concern you that Sienna has a potentially fatal infection?
4. If Sienna was unwell and febrile, what would be your immediate management and why?
5. What investigations would you undertake in your assessment of Sienna and why?
6. Another purpuric rash that occurs in children is Henoch-Schonlein purpura. What are the key clinical features of Henoch-Schonlein purpura and why should children with this condition be monitored for several months?
7. If Sienna’s FBC revealed thrombocytopenia, what clinical features would you assess and why?

### Suggested reading:

- Rogers, M., Phillips, R. & Wong, L. (2012). Skin Disorders. In M. South & D. Isaacs (Eds.). *Practical Paediatrics* (7<sup>th</sup> Ed). (pp. 756-779). Edinburgh: Churchill Livingstone/ Elsevier.
- Lim DCE, Cheng LNC, Wong FWS. Could it be Henoch-Schonlein purpura? Australian Family Physician, vol.38, no 5, May 2009. pg 321-324.  
<http://search.informit.com.au.ipacez.nd.edu.au/fullText;dn=772162682468436;res=IELHEA>
- Daly AJ. Meningococcal disease. Australian Family Physician, vol 32, no 8, August 2003, pg 597 - 603.  
<http://search.informit.com.au.ipacez.nd.edu.au/fullText;dn=376914410415024;res=IELHEA>

## ANSWERS

### 1. You observe that Sienna has a purpuric rash developing over her lower limbs, what would be your main concern and why?

Purpuric rashes can be associated with life-threatening diseases. An unwell, febrile child with purpura should be treated for meningococcal septicaemia without waiting for the results of investigations. Septicaemia from other organisms such as haemophilus influenza, streptococci, staphylococci and some gram-negative organism can cause purpura.

### 2. What are purpura and what can cause purpuric rashes in children?

Purpuric and petechial (pinpoint purpura) are non-blanching (test with a glass) red/purple spots. Can be caused by infection (eg severe life threatening such as meningococcal or enteroviral), Henoch-Schonlein purpura and thrombocytopenia.

### 3. What are the key clinical features that would concern you that Sienna has a potentially fatal infection?

#### History

Fever  
Poor feeding  
Miserable  
Lethargy  
History of focal infection eg  
Meningitis, osteomyelitis  
Gastroenteritis, cellulitis  
Predisposing conditions  
eg. sickle cell disease,  
Immunodeficiency

#### Examination

Fever  
Purpuric rash  
(meningococcal septicaemia)  
Irritability  
Shock  
Multi-organ failure

### 4. If Sienna was unwell and febrile, what would be your immediate management and why?

Intravenous antibiotics /ideally after taking blood cultures/penicillin G 60mg/kg i.v fourth hourly. The clinical course of meningococcal septicaemia can be rapidly progressive with time of onset from fever until death as short as 12 hours. Overall mortality for meningococcal disease is 10%.

### 5. What investigations would you undertake in your assessment of Sienna and why?

If Sienna was unwell, as in the above question, would do blood cultures but only if they did not delay treatment with antibiotics. If not unwell Platelet count and coagulation studies to differentiate HSP from other causes of purpura such as DIC, acute leukaemia and aplastic anaemia.

**6. Another purpuric rash that occurs in children is Henoch-Schonlein purpura. What are the key clinical features of Henoch-Schonlein purpura and why should children with this condition be monitored for several months?**

Vasculitic illness predominantly involving small vessels in the skin, large joints and gastrointestinal tract, children present with petechial or purpuric rash, abdominal pain and arthritis. Children with this condition should be monitored for several months because 50-70% of cases develop nephritis (usually with microscopic haematuria and proteinuria) – good prognosis with fewer than 5% developing chronic renal failure.

**7. If Sienna's FBC revealed thrombocytopenia, what clinical features would you assess and why?**

Children with thrombocytopenia can develop petechiae and purpura and superficial bleeding – it can cause epistaxis and other mucosal bleeding (profuse bleeding uncommon, intracranial bleeding serious but rare complication), clinical examination for hepatosplenomegaly/lymphadenopathy then bone marrow to exclude acute leukaemia or aplastic anaemia. Critically ill/severe sepsis or shock or extensive tissue damage – disseminated intravascular coagulation (DIC).