A skin quandary in Fiji

Case study
A boy aged 5 years presented with a 2-week history of rash. He had returned recently from a 3-week holiday in Fiji with his family. At the beginning of the trip he and his family developed mild upper respiratory tract symptoms, which resolved over the course of a week. A few days before the end of the holiday, he developed an erythematous, maculopapular rash over the right side of his neck and a single lesion on the inferior tip of his right ear. There was no associated pain. He reported considerable itch, but was otherwise not concerned by the rash. Other family members did not experience similar symptoms.

Question 1
What differential diagnoses would you consider?

Question 2
What further history would be useful?

Answer 1
Differential diagnoses for the initial presentation would include:
- *Herpes zoster* infection (shingles)
- impetigo
- contact dermatitis
- insect bites
- scabies
- folliculitis.

Answer 2
It is useful to elicit a history of allergic reactions or exposure to potential allergens. Given the distribution of the rash, contact with or exposure to a plant or other allergen would assist in narrowing the differential diagnoses. Although important, the childhood immunisation status of the patient is a less contributory aspect of the history. It may be more useful to ask if he or his siblings had been recently exposed to varicella.

Further information
Medical opinion at the resort suggested the lesions were due to insect or sandfly bites and a topical corticosteroid was prescribed. A few days later, on returning home, he was reviewed and a revised diagnosis of folliculitis was made. This was treated with a course of cephalexin syrup. Gradual improvement of the lesions was noted, with decreased erythema and pruritus.

Past history revealed that the patient had experienced previous urticarial reactions of unknown sources. There was no clear history of eczema. Skin-prick testing completed by an allergist had shown strong sensitivity to peanuts and rye grass. He had asthma and episodes of croup as an infant, but was an otherwise healthy child. A complete vaccination history was documented, including varicella at the recommended age of 18 months.

On presentation to our clinic, the patient had approximately 15 dry scabbed lesions over the right side of his neck and inferior jaw, in the C3 distribution. He had mild right-sided pre-auricular lymphadenopathy. Our final diagnosis, on the basis of these findings was *H. zoster* infection (shingles).
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CLINICAL

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Question 3
Is it reasonable to reach this diagnosis given the
child had been immunised against varicella?

Question 4
Has there been a change in the incidence of
shingles since the introduction of a routine
scheduled varicella immunisation? Is there any
difference in incidence between patients who
receive one or two doses of the vaccination?

Answer 3
The case presents a clinical diagnosis of
shingles, despite routine vaccination at the
age recommended by the Australian National
Guidelines.1 Since 2005, a single dose of a live
attenuated varicella vaccine has been funded
for all children aged 18 months; a catch-up dose
is available for children aged between 10–14
years who have not received varicella vaccine
previously and who have not had the disease.1
Detection of shingles in vaccinated children is
often a diagnostic challenge, as the lesions tend
to be fewer and smaller in size, and patients
often present with fewer systemic symptoms.2,3
Clinicians should, therefore, consider shingles
as a differential diagnosis for a rash in a child,
regardless of immunisation status. The condition
occurs in 20% of the population, but is rare in
children aged <12 years.4 Detection of H. zoster in
this age group is significant from a public health
perspective, in limiting their contact with high-risk
groups including immunocompromised patients,
pregnant women and babies <1 month of age.4

Answer 4
Some sources suggest that following
implementation of the varicella vaccination,
the incidence of shingles may be higher as a
result of the decreased circulation of wild-type
virus, which subsequently reduces natural T-cell
immunity.2,5 Overall, the reported incidence of
shingles following introduction of the varicella
vaccine, compared with the pre-vaccination era,
varies markedly in published studies, depending
on age range and population types.2,2,6 A 2-dose
vaccination schedule was implemented for children
in the US in 2006 following reports that a second
dose is optimal to provide an immune response
more like that acquired after natural infection
thus increasing population immunity.2 A study
using Australian data and a mathematical model
projecting long-term outcomes suggests a 2-dose
vaccination program would be a better long-term
strategy in minimising breakthrough varicella
(chickenpox), but its effect on the incidence of
shingles is unlikely to be significant for 65 years.7
Routine administration of a second dose of a
varicella vaccine for children is not currently a part
of the National Immunisation Program schedule.1

Key points
• The differential diagnosis for a rash in children
should include H. zoster infection (shingles),
which can occur in children who have been
immunised against varicella.
• There is currently little evidence from
Australian data to determine whether a 2-dose
vaccination schedule would decrease this risk,
compared with a single dose schedule.
• At present, if parents wish to minimise the
risk of breakthrough varicella (chicken pox),
administration of a follow-up dose of varicella
vaccine can be given with a minimum interval
of 4 weeks between doses, but the second
dose is currently not funded.

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