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Koplik Spots: A Clinical Sign with Epidemiological Implications for Measles Control

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In developed countries, widespread vaccination against measles has resulted in a very low incidence [1]. With a low incidence for years, the clinical knowledge has been lost, and Koplik spots (KS) have been forgotten. Conversely, due to the suboptimum vaccination coverage, Europe is experiencing a resurgence of measles, and intermittent outbreaks still occur [2]. Since KS are pathognomonic of the disease and can appear 1 day before the rash, they can help clinicians to make a prompt diagnosis and instant notification. We recall herein KS in a typical case of measles.

Case Report

A 27-year-old healthy woman was hospitalized for acute fever and generalized maculopapular rash. Over a period of 4 days, she developed fever (up to 40°C), headache, cough, coryza and conjunctivitis. The day before admission, she noticed erythematous

patches on the face and neck. In 24 h, as the symptoms intensified, macular lesions increased in number and became confluent, involving the trunk, back and arms, while discrete macules were seen on both hands (fig. 1). She was then hospitalized. On physical examination, KS were found bilaterally on the buccal mucosa, consisting of irregular and confluent small white spots, making diagnosis of measles most likely (fig. 2). Immediate notification to health authorities was made, and epidemiological investigation for related cases was shortly undertaken. In this patient, the final diagnosis was confirmed by the presence of antimeasles IgM antibodies. She had received only 1 dose of measles-containing vaccine at the age of 2 years.

Discussion

KS are white, slightly raised, 2- to 3-mm diameter lesions on the buccal mucosa, usually opposite the first or second molar [1]. They are present in most people who develop measles (>70%). They appear 1 day before the onset of the rash and persist for 2–3 days. Although they have occasionally been reported in parvovirus B19 infection [3], they are considered pathognomonic of measles. They are consequently of the most valuable clinical interest when investigating a febrile patient with a rash.

In the USA, measles is no longer endemic and most cases are traced to importation [4]. In Europe, the number of reported cases remains high [2]. The recommended vaccination coverage of 95% is not reached, allowing silent accumulation of susceptible individuals. Endemic transmission still occurs which can account for small outbreaks or even an increase in incidence, as experienced in France since early 2008, mainly because of poor uptake of vaccination [2, 5]. The majority of vaccine failures are due to primary vaccine failure, in adults with no second dose of measles-

Color version available online

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Fig. 1. Confluent maculopapules on the forearm with discrete isolated macules involving the palm in a 27-year-old woman with measles.

Fig. 2. KS in a 27-year-old woman with measles.

containing vaccine, even though a 2-dose regimen is recommended. In Europe, as the mortality from measles is greater in adolescents and adults, the number of deaths may rise.

Clinicians should seek KS for early diagnosis of measles. The presence of this sign can allow prompt investigation of outbreaks by immediate notification of the case. It may also limit the transmission of the virus, allowing early isolation measures and prompt postexposure vaccination of close contacts.

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