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Short Communication

Why measles still matters: Recognizing classic clinical patterns in the emergency setting

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A 9-year-old boy was referred to the emergency pediatric department with a fever and a new rash. He had returned the previous day from a holiday in Morocco, during which he had remained healthy. On the evening prior to presentation, he developed a fever and a non-pruritic erythematous maculopapular eruption involving the trunk, limbs, and face. The following morning, he reported malaise, watery ocular discomfort, and an episode of non-bloody diarrhea, without vomiting. Family members were healthy, and the child denied contact with symptomatic individuals abroad, although measles cases had been reported in Morocco several months earlier. The child had been living in Italy for one year. Vaccination history was uncertain; immunizations were reportedly administered according to the Moroccan schedule but were not supported by written documentation. At presentation, the patient's body temperature was 38.4 °C, accompanied by cough and ocular irritation. A throat swab for *Streptococcus pyogenes* was negative, and paracetamol was administered. On clinical examination, the patient was alert, interactive, and in good general condition, with no signs of meningeal irritation. Dermatological evaluation revealed a **diffuse, palpable, erythematous, maculopapular exanthem on** the face, trunk, extremities, and palms. Furthermore, ocular assessment showed **bilateral watery conjunctivitis with marked conjunctival hyperemia.** Oropharyngeal inspection demonstrated intense mucosal erythema and **Koplik's spots, which were more prominent on the left buccal mucosa than on the right** (Fig. 1A–C). Cardiopulmonary examination was unremarkable. The abdomen was soft with normal bowel sounds, without hepatosplenomegaly or palpable masses. The genitalia were normal. Laboratory results indicated leukopenia (WBC: 3410/mm^3), lymphopenia (440/mm^3), and a normal neutrophil count (2800/mm^3). Peripheral blood smear revealed reactive lymphocytes. C-reactive protein was within the normal range (0.2 mg/dL). Serology exhibited measles IgM positivity with negative IgG, confirming **acute primary measles infection**. Paired serum samples demonstrating IgG seroconversion or RT-PCR confirmation were unavailable; however, the diagnosis was supported by a highly characteristic clinical presentation, Koplik's spots, leukopenia with lymphopenia, and positive measles-specific IgM. In low-prevalence settings, false-positive IgM results should be considered. In the present case, the clinical picture was highly suggestive of an acute primary measles infection. Symptoms developed approximately 24 h after returning from Morocco. Considering the typical incubation period of measles (7–21 days), infection may have occurred either in Morocco, during travel, or shortly before departure. Koplik's spots appeared on day 2 of illness, concomitantly with the onset of the maculopapular rash. Public health authorities were promptly notified of the case [1]. Given the patient's stable clinical condition, he was discharged home under close clinical monitoring. No secondary cases were reported among household contacts during the subsequent three weeks of follow-up. Public health authorities implemented appropriate surveillance measures. Recently, several European countries, including Italy, have experienced a resurgence of measles cases, largely attributed to suboptimal vaccination coverage [2–4]. Despite the availability of an effective vaccine, immunity gaps persist, particularly among migrant and undervaccinated populations. The differential diagnosis (Fig. 1D) of a febrile maculopapular rash in children, which may clinically mimic measles, includes parvovirus B19 infection, Kawasaki disease, and drug reaction with eosinophilia and systemic symptoms (DRESS) [5,6]. Parvovirus B19 is characterized by “slapped cheek” facial erythema, followed by a rash involving the trunk and limbs. Moreover, Kawasaki disease presents with prolonged fever and mucocutaneous findings, including non-exudative conjunctivitis, cheilitis, and subsequent desquamation of the hands and feet. DRESS syndrome is a severe drug-induced hypersensitivity reaction, often associated with extensive polymorphic skin eruptions, facial edema, mucosal involvement, eosinophilia, and recent exposure to new drugs, particularly antiepileptics. Left untreated, DRESS may be associated

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with significant morbidity and mortality; however, the RegiSCAR scoring system (scoring system for diagnosing DRESS syndrome) can provide diagnostic support. The current case shows the classic hallmarks of measles and serves as an educational example of clinical pattern recognition in the emergency setting, particularly for accurate differential diagnosis. Despite its well-described and common presentation, recognizing measles remains crucial, especially in countries where the disease has become less familiar to clinicians. The clinical course of measles is characterized by a prodromal phase with fever, cough, and conjunctivitis, followed by the appearance of Koplik's spots, which are an early and highly suggestive diagnostic sign, and a diffuse, palpable maculopapular rash. Laboratory findings, including leukopenia with lymphopenia and serological evidence of acute infection, further support the clinical diagnosis.

Ethics statement

As this was an individual case report, where the patient's guardian provided consent, no hospital board ethical approval was required. The authors declare that the research presented in this manuscript adheres to the ethical principles outlined by the IRCSS Burlo Garofolo Ethics Committee. All procedures involving human participants were conducted in accordance with the ethical standards of the IRCSS Burlo Garofolo, and the Declaration of Helsinki (1964), as revised in 2013.

Consent

Consent was taken from the patient's guardian and documented in written file. No identifiable patient characteristics were reported.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declaration of competing interest

The authors declare no conflicts of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.pedneo.2026.01.003.

References

[1] Do LAH, Mulholland K. Measles 2025, N Engl J Med 2025;393:2447–58.
[2] GBD 2023 Vaccine Coverage Collaborators. Global, regional, and national trends in routine childhood vaccination coverage from 1980 to 2023 with forecasts to 2030: a systematic analysis for the global Burden of Disease Study 2023. Lancet 2025;406:235–60.
[3] Kuppalli K, Omer SB. Measles: the urgent need for global immunisation and preparedness. Lancet 2025;405:1565–7.
[4] Marziano V, Bella A, Menegale F, Del Manso M, Petrone D, Palamara AT, et al. Estimating measles susceptibility and transmission patterns in Italy: an epidemiological assessment. Lancet Infect Dis 2025;25:1303–13.
[5] Martinez-Coronado J, Salazar R. Erythema infectiosum. N Engl J Med 2025;393:1940.
[6] Cho YT, Yang CW, Chu CY. Drug reaction with eosinophilia and systemic symptoms (DRESS): an interplay among drugs, viruses, and immune system. Int J Mol Sci 2017;18:1243.