Pityriasis rubra pilaris occurring after vaccination with diphtheria-pertussis-tetanus and oral poliovirus vaccines

Sir,

Pityriasis rubra pilaris, first described by Tarral in 1835, is an erythemato-squamous disease.[1] It was classified by Griffiths into five groups with different clinical features, course and prognosis.[2] The precise etiology of this condition is still unknown. Genetic factors, human immunodeficiency virus and other infections have all been implicated.[1] Pityriasis rubra pilaris following vaccination is rarely reported. We describe a new case of pityriasis rubra pilaris occurring after vaccination in a Tunisian child.

A 19-month-old child was referred to our dermatology department at Monastir University Hospital with a 2-week history of an erythemato-squamous eruption affecting the face, the trunk and the limbs with palmoplantar keratoderma. On examination, we noted bilateral ectropion, erythemato-squamous patches on the face, neck and scalp and diffuse follicular erythemato-squamous papules and patches on the knees, elbows, axillae and trunk. There was waxy-yellow diffuse hyperkeratosis on the palms and soles [Figure 1a-e]. The child had no personal or family history of skin disease. He had no preceding symptoms of influenza-like syndrome or drug administration except for the intramuscular diphtheria–tetanus–pertussis booster and oral poliovirus vaccination 2 weeks before development of the rash. Histological examination of a skin biopsy showed psoriasiform acanthosis, alternating orthokeratosis and parakeratosis and a moderate lymphocytic perivascular infiltrate in the dermis [Figure 2]. Chest X-ray was normal. A full blood count including white blood cell count, platelet count, liver and renal function tests, C-reactive protein and thyroid hormones were within normal limits. Serology for Epstein–Barr virus, cytomegalovirus, parvovirus B19, human immunodeficiency virus, hepatitis B and C was negative. These findings pointed to a post-vaccination etiology of pityriasis rubra pilaris. Treatment with topical, low-potency corticosteroids and emollients proved effective and clinical remission was obtained within a period of 5 months with no relapse during a 1 year follow-up.

Pityriasis rubra pilaris is an uncommon disease characterized by erythematous follicular papules and diffuse plaques with pityriasiform scale.[1] The age distribution is bimodal, with pityriasis rubra pilaris characteristically occurring during the first and fifth decades of life.[1] The condition affects both sexes, all races, and has been reported worldwide.[1] Most cases are acquired, although familial variants of the disease

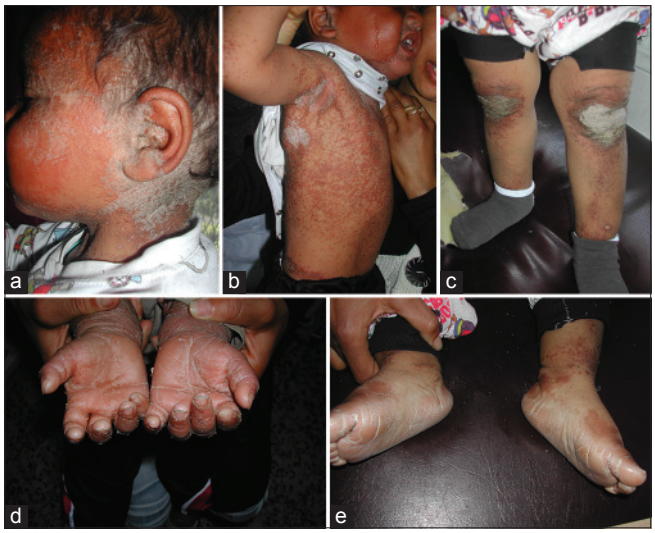

Figure 1: (a) Erythemato-squamous patches and follicular papules on the face, scalp and neck. (b) Follicular erythemato-squamous papules and patches on the trunk. (c) Follicular erythemato-squamous papules and patches on the knee. (d) Waxy-yellow diffuse hyperkeratosis on the palms. (e) Waxy-yellow diffuse hyperkeratosis on the soles

exist.[2] It is a cutaneous disease of unknown origin. Only a few associated causes such as neoplasms, hypogammaglobulinemia and viral infections have been implicated in its etiology.[1]

We found only three previously reported cases of pityriasis rubra pilaris occurring after vaccination. We report a fourth case and the second pediatric case. The first case described a 32-year-old woman presenting with pityriasis rubra pilaris 10 days after diphtheria-tetanus-polio vaccination.[3] The second case concerned a 47-year-old woman presenting with pityriasis rubra pilaris 18 days after anti-influenza vaccination (Tetragrip®).[4] The third case was a 17-month-old child who developed pityriasis rubra pilaris 2 weeks after measles–mumps–rubella vaccination.[5] Our case was a 19-month-old child who developed pityriasis rubra pilaris 2 weeks after intramuscular diphtheria–tetanus–pertussis booster and oral poliovirus vaccination.

Diphtheria, tetanus and acellular pertussis vaccine is a combination vaccine that is given to protect against these infections. The vaccine components include diphtheria and tetanus toxoids and killed whole cells of the organism that causes pertussis.[6] Oral poliovirus vaccination is a live attenuated vaccine producing lifelong protection against the paralytic disease caused by each of three poliovirus serotypes in more than 95% of recipients.[7] The usual course of this childhood

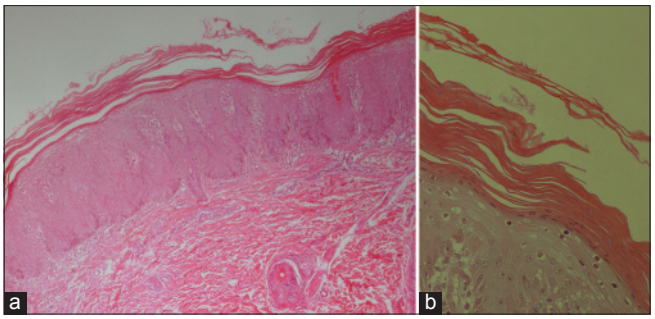

Figure 2: (a) Uniform acanthosis of the epidermis with hyperkeratosis and perivascular lymphocytic infiltratein the superficial dermis (H and E, ×40). (b) Hyperkeratosis of the epidermis with alternating orthokeratosis and parakeratosis (H and E, ×100)

immunization in Tunisia is a total of four doses. At the age of 2, 3 and 6 months, children are given intramuscular pentavalent combination vaccine (diphtheria–tetanus–acellular pertussis–hepatitis B virus–hemophilus influenzae type b) and oral inactivated poliovirus vaccine. At the age of 18 months, they receive intramuscular diphtheria–tetanus–pertussis booster and oral poliovirus vaccination. For children between 6 and 18 years old and for adults, a separate combination of diphtheria, tetanus vaccines (booster) and oral poliovirus vaccination are used with adjustment of the relative concentrations of their components. Side effects of the diphtheria–tetanus–pertussis vaccine are usually mild and last for only a few days. The most common side effect is pain at the injection site and occasional redness and swelling. A small number of people develop fever, vomiting, headache, diarrhea, nausea, chills, generalized body ache, decreased energy or sore and swollen joints after receiving the vaccine.[6] The only well-documented adverse event associated with oral poliovirus vaccination is vaccine-associated paralytic poliomyelitis.[7] In addition, reversion of attenuated vaccine viruses to more virulent strains by reverse mutation after replication in the intestine in oral poliovirus vaccination recipients seems to occur.[7] The trigger mechanism of post-vaccination pityriasis rubra pilaris may be immunological or infectious.[5] Although direct causation is difficult to prove, including details about recent vaccination during history taking from a patient with pityriasis rubra pilaris is helpful to assess the importance of this potential trigger factor.

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