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Authors
Cohen-Sors, Raphaella
Dadban, Ali
Pezron, Juliette
et al.

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Asymmetric periflexural exanthem of childhood and influenza virus infection.

Raphaella Cohen-Sors[1] MD, Ali Dadban[1] MD, Juliette Pezron[2] MD, Catherine Lok[1] MD PhD

Affiliations: [1]Department of Dermatology, CHU Amiens-Picardie, Amiens, France, [2]Department of Pediatric Cardiology and Pneumo-Allergology, CHU Amiens-Picardie, France

Corresponding Author: Ali Dadban MD, Department of Dermatology, CHU Amiens-Picardie, 80054 Amiens, France, Tel: 33-322455841, Fax: 33-322456072, Email: dadban.ali@chu-amiens.fr

Abstract

Asymmetric periflexural exanthem of childhood (APEC) is a self-limited disease characterized by unilateral exanthem. The etiology is unknown, but a viral agent is suspected. Most often there is no formal proof of an associated viral etiology, but several associations between APEC and some viruses have been described. We report a 2-year-old girl with APEC associated with influenza A. This case allows us to provide an additional argument on a probable viral etiology of APEC and a possible etiologic role of influenza A.

Keywords: unilateral laterothoracic exanthem, influenza A

Introduction

Asymmetric periflexural exanthem of childhood (APEC) or unilateral laterothoracic exanthem (ULE) is a benign, self-limited, unilateral skin rash. Its etiology is unknown, but a viral agent is often suspected. It is believed to represent a peculiar skin reaction to antigenic stimuli, similar to Gianotti-Crosti syndrome. Several viruses have been implicated in its etiology. Some authors have used the term "paraviral dermatosis." We describe the hitherto unreported, to our knowledge, association between APEC and influenza A in a 2-year-old girl.

Case Synopsis

A 2-year-old girl was admitted to our hospital for fever with loss of appetite and vomiting. Past medical history was unremarkable. The vaccines were up to date. Skin examination showed concomitant erythematous, maculopapular, and ill-defined rash on the axillary fold and the left lateral trunk, with secondary involvement of the ipsilateral limbs (**Figure 1**). The rest of the clinical examination was normal. She had mildly elevated C-reactive

Figure 1. ***A)*** *Maculopapular skin rash on the left axillary fold and left lateral trunk.* ***B)*** *Maculopapular skin rash on the left arm.* ***C)*** *Maculopapular skin rash on the left leg.*

protein. In the setting of an influenza epidemic, a rapid influenza test was done and was positive for influenza A. The child was treated by oseltamivir and acetaminophen. Within two days, her fever resolved and her general condition improved. Skin lesions disappeared within a few weeks.

Case Discussion

Asymmetric periflexural exanthem of childhood is characterized by unilateral exanthem in the peri-flexural regions, typically on the chest or upper arms. It has a centrifugal evolution, sometimes eventually involving the contralateral side. A seasonal pattern has been described. Prodromal gastro-intestinal, upper respiratory symptoms, or enlarged axillary lymph nodes are sometimes present [1]. The diagnosis is clinical and there are no reliable laboratory tests. Skin biopsy is not helpful. No treatment is necessary because the rash is usually asymptomatic and resolves in 4-8 weeks. The pathophysiological mechanism remains unknown. Several hypotheses have been suggested and include bacterial or viral infections, vaccinations, arthropod bites, drugs, nutritional factors, or contact dermatitis [1, 2]. The so-called paraviral origin is described in several observations, reminiscent of Gianotti-Crosti or gloves-and-socks syndromes [3]. Arguments in favor of this etiology are predominantly seasonal character and the presence of prodromal symptoms, lymphadenopathy, and lack of recurrence in the same patient. Specific viruses have been implicated including para-influenza 2 and 3, adenovirus [1, 4], parvovirus B19 [5-7], Human herpesvirus (HHV) 7 [8] and reactivation of Epstein-Barr virus [9, 10], (**Table 1**). However, some authors consider the skin rash and a viral infection unrelated, given the high frequency of viral infections in childhood [1].

Conclusion

To the best of our knowledge, we report the first description of asymmetric periflexural exanthem of childhood in association with influenza A. The causal role remains difficult to prove.

Potential conflicts of interest

The authors declare no conflicts of interests.

References

1. Harangi F, Várszegi D, Szücs G. Asymmetric Periflexural Exanthem of Childhood and Viral Examinations. *Pediatr Dermatol*. 1995;12:112–5. [PMID: 7659637].
2. Bodemer C, de Prost Y. Unilateral laterothoracic exanthem in children: a new disease? *J Am Acad Dermatol*. 1992;27:693–6. [PMID: 1430389].
3. Chuh A, Zawar V, Sciallis GF, Kempf W, Lee A. Pityriasis Rosea, Gianotti-Crosti Syndrome, Asymmetric Periflexural Exanthem, Papular-Purpuric Gloves and Socks Syndrome, Eruptive Pseudoangiomatosis, and Eruptive Hypomelanosis: Do Their Epidemiological Data Substantiate Infectious Etiologies? *Infect Dis Rep*. 2016;8:6418. [PMID: 27103975].
4. Niedermeier A, Pfützner W, Ruzicka T, Thomas P, Happle R. Superimposed lateralized exanthem of childhood: report of a case related to adenovirus infection. *Clin Exp Dermatol*. 2014;39:351–3. [PMID: 24635078].
5. Pauluzzi P, Festini G, Gelmetti C. Asymmetric periflexural exanthem of childhood in an adult patient with parvovirus B19. *J Eur Acad Dermatol Venereol*. 2001;15:372–4. [PMID: 11730065].
6. Guimerá-Martín-Neda F, Fagundo E, Rodríguez F, et al. Asymmetric periflexural exanthem of childhood: Report of two cases with parvovirus B19. *J Eur Acad Dermatology Venereol*. 2006;20:461–2. [PMID: 16643150].
7. Chuh A. Asymmetric periflexural/unilateral laterothoracic exanthem related to parvovirus B19 infection: An adult carrier of β-globin thalassaemia gene mutation in Hong Kong. vol. 57. *Australas J Dermatol*. 2016;57:e141–3. [PMID: 29896828].
8. Al Yousef Ali A, Farhi D, De Maricourt S, Dupin N. Asymmetric periflexural exanthema associated with HHV7 infection. *Eur J Dermatology*. 2010;20:230–1. [PMID: 19919914].
9. Duarte AF, Cruz MJ, Baudrier T, Mota A, Azevedo F. Unilateral laterothoracic exanthem and primary Epstein-Barr virus infection: case report. *Pediatr Infect Dis J*. 2009;28:549–50. [PMID: 19483526].
10. Scheinfeld N. Unilateral laterothoracic exanthema with coincident evidence of Epstein Barr virus reactivation: exploration of a possible link. *Dermatol Online J*. 2007;13:13. [PMID: 18328207].

Table 1. *Asymmetric periflexural of childhood and the possible link with viral infection.*

References	Number of patients	Gender	Age at time of APEC presentation, years	Virus	Lab	Other clinical symptoms	Localization(s)	Temporal relationship to fever	Evolution of viral infection	Evolution of rash
Harangi et al., 1995 [1]	2 2 2	NR	2 to 3	Parainfluenza 2 Parainfluenza *3* Adenovirus	Normal Normal Normal	NR NR Catarrhe in the upper respiratory tract, erythematous pharynx	NR	NR	NR	Complete resolution 2 to 8 weeks
Niedermeler et al., 2014 [4]	1	M	1	Adenovirus	Elevation of leucocytes, increase lympocytes, decrease neutrophiles	Upper respiratory tract infection	Left gluteal area, lateral thoracic wall, left axilla and secondarly controlateral dissemination of the rash	NR	NR	Complete resolution after 4 weeks with 1% hydrocortisone cream and topical emolient
Pauluzzi et al., 2001 [5]	1	M	41	Parvovirus B19	Transiant neutropenia and thrombocytopenia (white blood count 1600/µL, neutroplil count 5500/µL, platelets 93000/µL)	Fever, malaise, myalgia, sternalgia, headache	Right axillary flecture extending along the latertal thoracic wall and the proximal flexural part of the arm	4 days	spontaneous resolution after 4 days	Complete resolution after 2 weeks
Guimerat et al., 2006 [6]	1	F	7	Parvovirus B19	Normal	NR	Right axilla, right side of the trunk and proximal flexural part of the arm	NR	NR	Completel resolution after 6 weeks
	1	F	9	Parvovirus B19	Normal	NR	Left axilla, left side of the trunk and proximal flexural part of the arm and leg	NR	NR	Complete resolution after 6 weeks

Chuh et al., 2016 [7]	1	M	28	Parvovrus B19	Blood picture was compatible with the thalassemia threat. CRP normal.	Generalized fatigue, clear nasal decharge, blocked nostrils	Neck and right shoulder, right supraclaviculair region, right upper chest, right upper back, secondarly extended to the left side	NR	spontaneous resolution after 1 week	Complete resolution after 3 weeks
Duarte et al., 2003 [9]	1	F	1	EBV	Normal	No other symptoms	Left axilla, ipsilateral hemithorax and arm	no fever	NR	Complete resolution after 2 weeks
Scheinfeld et al., 2007 [10]	1	F	35	EBV	NR	Palpable lymph nodes	Right flank	NR	NR	Almost abated after 2 weeks
Al Yousef et al., 2010 [8]	1	M	59	HHV7	Normal	Several right axillary lymph nodes	Right axillary flexure, right aspect of the thorax and the internal aspect of the right arm	NR	NR	Complete resolution after 3 weeks
Our patient	1	F	2	Influenza virus	Mildly elevated C-reactive protein	Fever with loss of appetite and vomiting	Axillary fold and left lateral trunk, with secondary involvement of the ipsilateral limbs	NA	Fever resolved and general condition improved with oseltamivir and acetaminophen after 2 days	Complete resolution after few weeks

EBV: Epstein Barr virus; HHV 7: human herpes virus 7, CRP: C-Reactive Protein, NR: no reported.