CASE REPORT

Skin rash and subconjunctival haemorrhage in an adult with pandemic H1N1 influenza

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SUMMARY

A young man presented with erythematous rash that appeared 3 days following upper respiratory symptoms and fever. Diffuse exanthematous rash was seen over whole body, most pronounced over the trunk.

A subconjunctival haemorrhage also appeared in the left eye following incessant cough. Reverse transcription-PCR of the nasopharyngeal secretions revealed influenza A (2009 pandemic H1N1). The patient responded to oseltamivir therapy. Influenza should be considered in patients presenting with exanthematous skin rash.

erythematous, maculopapular rash involving the whole body (figure 1), sparing the soles and the palms. The rash was discrete over the back but was more confluent over the front of the trunk and extremities and was non-itching, non-blanching and non-ulcerating. Eyes revealed bilateral injection and two subconjunctival haemorrhages (figure 1) without any corneal or lenticular abnormalities and a normal intraocular tension. Pharyngeal examination revealed intense pharyngeal hyperaemia of the posterior oropharynx. Rest of the general and systemic examinations was unremarkable.

BACKGROUND

During 2009, a novel influenza A (H1N1) virus of swine origin caused human infection and acute respiratory illness in Mexico.¹ After initially spreading among people in the USA and Canada, the virus spread globally, resulting in the first influenza pandemic since 1968. Infection with the 2009 pH1N1 virus causes a broad spectrum of clinical syndromes, ranging from afebrile upper respiratory illness to fulminant viral pneumonia. Most patients presenting for care have typical influenza-like illness with fever and cough, symptoms that are sometimes accompanied by sore throat and rhinorrhoea.^{2–3} Although systemic symptoms are frequent in 2009 pH1N1 viral infection, cutaneous manifestations are rare. Reports of skin involvement are limited to only a few reports, mostly in the paediatric patients.^{4–6} We herewith present a patient who developed an erythematous skin rash that was associated with 2009 pH1N1 infection.

CASE PRESENTATION

A previously well 26-year-old man presented to our department with a 5-day history of fever and upper respiratory symptoms of cough, sore throat and headache with intense fatigue. In addition he developed loose watery diarrhoea that lasted 2 days on his initial presentation. The patient developed a high-grade fever that was accompanied by headache and upper respiratory symptoms. The patient denied taking any medications except for acetaminophen which he prescribed for his fever. He denied any history of arthritis, breathlessness, haemoptysis, gastrointestinal bleeding, urinary symptoms or any other symptoms referable to other organ systems. On the fourth day of his illness, he started with an erythematous rash which began initially on his face and gradually involved the extremities and his back as well his abdomen. The rash was non-itching and was dusky red in colour. Clinical examination revealed diffuse

INVESTIGATIONS

His investigations revealed a haemoglobin of 14.1 g/dL, the total leucocyte count 5600/mm³, with 73% neutrophils and 25% lymphocytes and 2% monocytes and platelets were 81×10⁹/L. His peripheral blood film did not reveal any abnormal looking cells. Serum levels of urea, creatinine, glucose, bilirubin, alkaline phosphatase, albumin, proteins, uric acid and lipids were normal. Urine dipstick was negative for any proteins, glucose or blood and the microscopic examination of the sediment was normal. Blood, urine and sputum cultures were normal and a throat swab was negative for any bacterial organisms. Creatine kinase was elevated (768 IU/L, normal 0–195 U/L) and lactate dehydrogenase was 442 IU/L (normal 100–235 IU/L). Serum alanine aminotransferase was 138 U/L (normal 0–45) and aspartate aminotransferase was 118 (normal 0–40 U/L). Urine was negative for myoglobin. Serology for HIV was negative. The leucocyte count dropped to 2400/mm³ on day 3 of admission with 56% polymorphs, 30% lymphocytes, 10% monocytes and 2% eosinophils and a normal platelet count of 110×10⁹/L. Combined nasopharyngeal and oropharyngeal swabs tested positive for influenza A on reverse transcription (RT)-PCR and the subtyping revealed 2009 pandemic H1N1. Serology for Epstein-Barr virus, cytomegalovirus, herpes and toxoplasmosis was negative.

TREATMENT

The patient was started on oseltamivir 75 mg twice daily along with symptomatic treatment.

OUTCOME AND FOLLOW-UP

He started improving within 48 h with the rash disappearing in the order of its appearance. He turned afebrile and all other symptoms improved in 3–4 days. Repeat biochemical parameters after 1 week of initial evaluation were normal. The rash

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Figure 1 Image showing erythematous skin rash (A and B) and subconjunctival haemorrhage (C).

disappeared and the subconjunctival haemorrhage slowly disappeared over 2 weeks. The patient has been asymptomatic over a follow-up of 1 month.

DISCUSSION

The patient had skin rash and other classical clinical features of influenza which were documented by RT-PCR to be caused by pandemic H1N1 virus and rapidly responded to treatment with oseltamivir. During a systematic surveillance of influenza in past 4 years, the patient is the first that we have seen presenting with skin rash and not found a similar case documented in other parts of the world. The patient also had a subconjunctival haemorrhage that has previously not been reported in association with influenza. However, there are reports of cutaneous rash in influenza A infection,⁷ and very few reports in 2009 pandemic H1N1 infection.⁸ While the reports are mainly in paediatric patients with influenza, skin rash is rare among the adults and the English literature is restricted to a few case reports.^{4–6 8 9} The rash in this patient was discrete starting from the face and involving the whole body in a couple of days with a confluence of the rash at places (figure 1). Other forms of rash have included macular, maculopapular or sometimes even petechial or purpuric.^{9–11} On the basis of its appearance, the rash can easily be mistaken for other viral exanthems like measles because of its florid and variable nature. The typical characteristics are also varied with some individuals having a discrete appearance while still in others the rash can become confluent as in this patient. The diversifying nature of the rash is also highlighted by its distribution which can be widespread⁵ or localised to certain parts of the body, like the abdomen.⁶ The histopathological features underlying the rash in influenza include focal vacuolar alteration of the dermo-epidermal junction, necrotic keratinocytes and a superficial lymphocytic infiltration.^{12 13} Some authors also describe a leucocytoclastic vasculitis in few of the patients with influenza.⁵ However, influenza virus has never been documented in such skin lesions. Another unusual

manifestation in this patient was a subconjunctival haemorrhage, possibly related to incessant cough with a possible contribution from the initial thrombocytopenia of the patient. Haemorrhage was related to the incessant cough that the patient had. Cough is a common symptom in influenza and subconjunctival haemorrhages have been known in patients with severe cough¹⁴ that can result in disruption of the conjunctival vessels in the conjunctiva. In conclusion, this case highlights the fact that although exanthematous rash is mostly associated with enteroviruses, influenza virus can also sometimes be associated with skin manifestations and a person needs to be wary of such a possibility.

Learning points

- Influenza can cause a skin rash that may simulate other exanthems.
- Skin rash in influenza is not confined to children alone.

Contributors All the authors were involved in the management of the patient and contributed to the write-up of the manuscript.

Competing interests None.

Patient consent Obtained.

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