Simultaneous Occurrence of Henoch-Schonlein Purpura in Two Brothers

İki Kardeşte Aynı Anda Ortaya Çıkan Henoch-Schönlein Purpurası

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ABSTRACT

Henoch-Schönlein purpura (HSP) is the most common systemic vasculitis of childhood, but the etiology is not known. Familial occurrence of HSP is rare. There are only two previous reports of the simultaneous onset of HSP in siblings. Herein, we present simultaneous occurrence of HSP in two brothers. Nearly simultaneous onset of symptoms in our cases suggests that a common environmental factor, either infectious or allergic, is possible. Our patients were previously healthy, with no history of atopy. They had neither a history of infection prior to the onset of HSP nor clinical evidence of infection on admission, although antistreptolysin titers were elevated in both patients. The trigger causing HSP was not identified in these patients but we assumed that environmental factors may be responsible for the simultaneous occurrence of HSP in genetically susceptible patients.

KEY WORDS: Henoch-Schönlein purpura, Infectious, Allergic, Genetic

ÖZ

Henoch-Schönlein purpurası (HSP) nedeni tam olarak bilinmeyen, çocukluk çağının en sık görülen sistemik vaskülitidir. Ailesel HSP olguları nadirdir. Literatürde iki kardeşte aynı anda ortaya çıkan HSP sadece iki kez bildirilmiştir. Biz burada iki erkek kardeşte aynı gün ortaya çıkan HSP olgularını sunduk. Hastalarımızda bulguların neredeyse aynı anda başlamış olması ilk olarak enfeksiyöz veya alerjik nedenler gibi çevresel etkenleri akla getirdi. Hastalarımız daha öncesinde sağlıklı olup atopi öyküleri yok idi. Hastalarımızın her ikisinin de antistreptolizin titreleri yüksek saptandı. Ancak olgularda HSP başlangıcından önce enfeksiyon hikayesine veya başvurdukları anda klinik olarak enfeksiyon bulgusuna rastlanmadı. Biz bu kardeşlerde HSP'yi tetikleyen nedeni net olarak gösteremesek de genetik olarak duyarlı hastalarda çevresel etkenlerin rol oynayabileceğini düşündük.

ANAHTAR SÖZCÜKLER: Henoch-Schönlein purpurası, Enfeksiyöz, Allerjik, Genetik

INTRODUCTION

Henoch-Schönlein purpura (HSP) is the most common vasculitis of childhood, but the etiology and pathogenesis is not known (1). A seasonal variation with a peak incidence in spring and clusters of cases have been described in HSP. A few studies about familial cases of HSP have also been reported (2-13). To the best of our knowledge, there are only two previous reports of the simultaneous occurrence of HSP in siblings (14,15). It is suggested that the familial clustering of HSP might be influenced by genetic factors or by infectious pathogens (10,12,13,15). In this report, we present two brothers who were diagnosed as having HSP with a nearly simultaneous onset of symptoms.

CASE REPORTS

Case-1

The first case was a 17-year-old boy who presented with a 2-day history of a diffuse rash on the lower extremities, abdominal pain, and arthritis. He had been otherwise healthy. He was not receiving any medication and no history of allergic diseases. Physical examination revealed normal anthropometric development. His blood pressure was normal. On admission,

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he appeared well and was afebrile**.** A diffuse, symmetric, purpuric rash with large hematomas was present on the lower extremities. On admission there were signs of right knee arthritis, with limitation of motion. Abdominal examination was normal, without signs of peritoneal irritation or organ enlargement. The rest of the physical examination was normal.

Laboratory evaluation showed a white blood cell count of 7.800/ mm^3 with normal differential count, hemoglobin 14.1 g/dl, platelet count 292.000/mm^3, elevated C-reactive protein (CRP) of 51.9 mg/L (normal: <6 mg/L), and erythrocyte sedimentation rate (ESR) of 48 mm/h. Microscopic analysis of urine was normal. Throat culture at admission was negative for *Streptococcus*. The antistreptolysin titer (ASO) was elevated (312 IU/mL; normal: <200 IU/mL). Blood levels of glucose, electrolytes, creatine phosphokinase (CPK), liver and kidney function, and levels of complements were all within normal limits. Tests for antinuclear antibodies (ANA) and antineutrophil cytoplasmic antibodies (ANCA) were negative. Occult blood in the stool was negative. The *Familial Mediterranean Fever* gene (*MEFV*) mutation was investigated and no mutation was found. Serology for brucellosis and salmonellosis was negative. Anti-*Helicobacter pylori* IgG and IgA (*Anti-Hp IgG – IgA*) antibodies were negative. Two stool samples were negative for parasites. A skin biopsy specimen showed leukocytoclastic vasculitis with IgA deposits, confirming the diagnosis of HSP (Figure-1 A,B). The patient was treated symptomatically and improved.

Case-2

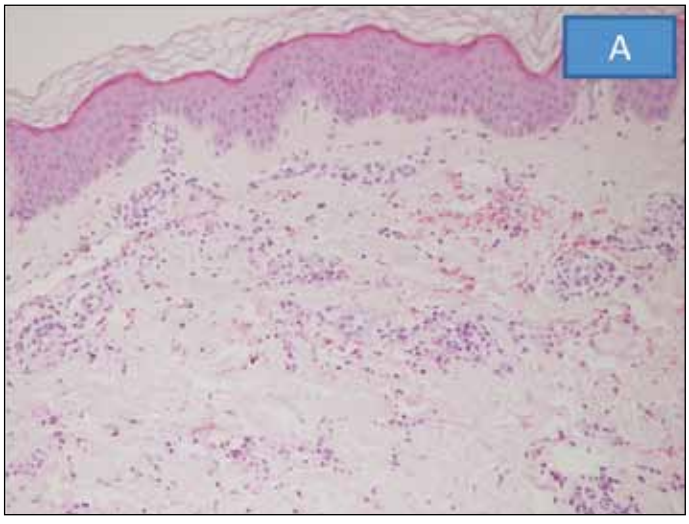
The second case was a 13-year-old boy (the brother of the first case) who was admitted on the same day for rash and arthralgia. He had been otherwise healthy. On examination, palpable purpura of different sizes was prominent on the lower limbs and buttocks.

Laboratory studies revealed a white blood cell count of 9.200/ mm^3 with 57% granulocytes, hemoglobin 14.1 g/dl, platelet count 292.000/mm^3, CRP 4.98 mg/L, and elevated ESR of 46 mm/h. Microscopic analysis of urine was normal. Throat culture at admission was negative for streptococcus. Antistreptolysin titer was 334 IU/mL and elevated. Serum C3 and C4 levels were normal. ANA, antidsDNA, p-ANCA, and c-ANCA were negative. Occult blood in stool was negative. The mutational analysis of the *MEFV* gene was negative**.** Serology for brucellosis and salmonellosis, repeated stool examinations for any parasite and *anti-Hp IgG–IgA antibodies* were all negative. A skin biopsy was not performed. In this case, the diagnosis of HSP was made based on his typical clinical picture. The patient's purpuric rash and arthralgia resolved within 1 week without other sequelae.

DISCUSSION

There are only a few reports of the familial occurrence of HSP (2-13). Although familial occurrence of HSP has been described, the simultaneous onset of HSP has not been well documented. As far as we know, there are two previous reports of the simultaneous occurrence of HSP in family members (14,15). The first family was described by De Veber with three members having had HSP. Two of them were siblings who developed HSP at about the same time. These cases were preceded by streptococcal pharyngitis (14). Levy-Khademi et al. reported another family where they described the simultaneous onset of HSP in two sisters 1 day after the wearing of new synthetic slippers (15).

Motoyama and Zang suggested that the interval of onset within familial cases is the important character to be considered, because the clustering of one disease in families might either be due to a genetic background or to environmental factors (10,12).



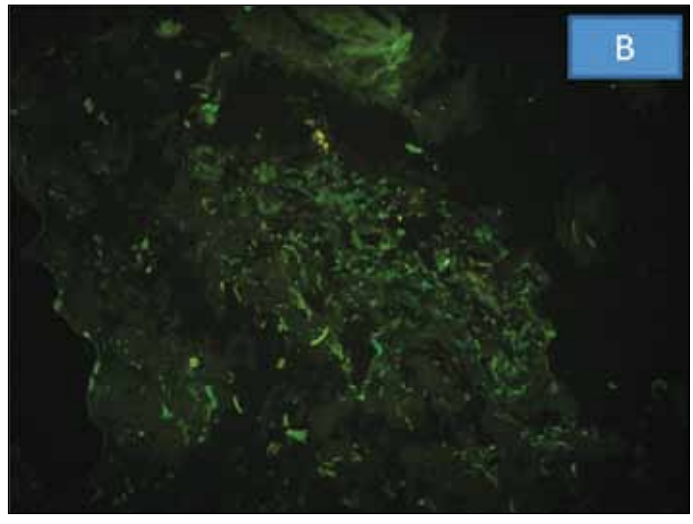


Figure 1: ***A.*** *Hematoxylin and eosin staining: Perivascular neutrophilic infiltration with nuclear dust in the dermis*
B. *Direct immunofluorescence examination: Granular deposition of IgA within the dermal capillary walls*

Environmental factors such as infectious agents, allergic causes, or drugs may have played important roles in the pathogenesis of familial HSP if the interval is really short while a genetic immune factor may have played a role if the onset interval is longer (10,12).

Nearly simultaneous onset of symptoms in our cases suggests that a common environmental factor, either infectious or allergic, is possible. We do not know whether a streptococcal infection played a role in the etiology of HSP in these cases or not. Our patients had neither a history of infection prior to the onset of HSP nor clinical evidence of infection on admission, although ASO titers were elevated in both patients. They were not receiving any drug and there was no history of allergic diseases. Although the trigger causing HSP was not identified in these patients, we speculated that environmental factors may be responsible for the simultaneous occurrence of HSP in genetically susceptible patients**.** In addition, the role of streptococcal infection in the familial clustering of HSP should be further elucidated in the future.

REFERENCES

1. Cassidy JT, Petty RE: Vasculitis. In: Cassidy JT, Petty RE (eds). Textbook of Pediatric Rheumatology, 3rd edn. Philadelphia: WB Saunders, 1995; 365-422
2. Allen DM, Diamond LK, Howell DA: Anaphylactoid purpura in children (Schonlein-Henoch syndrome): Review with a follow-up of the renal complications. AMA J Dis Child 1960; 99: 833-854
3. Meadow SR, Glasgow EF, White RH, Moncrieff MW, Cameron JS, Ogg CS: Schönlein-Henoch nephritis. Q J Med 1972; 41: 241-258
4. Lofters WS, Pineo GF, Luke KH, Yaworsky RG: Henoch-Schönlein purpura occurring in three members of a family. Can Med Assoc J 1973; 109: 46-48
5. Mizuno A: Henoch-Schönlein purpura nephritis, clinicopathological study of 87 cases. J Jpn Pediatr Soc 1982; 86: 1455-1465
6. Farley TA, Gillespie S, Rasoulpour M, Tolentino N, Hadler JL, Hurwitz E: Epidemiology of a cluster of Henoch-Schönlein purpura. Am J Dis Child 1989; 143: 798-803
7. Levy M: Familial cases of Berger's disease and anaphylactoid purpura: More frequent than previously thought. Am J Med 1989; 87: 246-248
8. Grech V, Vella C: Henoch-Schoenlein purpura with nephritis in two siblings following infectious mononucleosis. Ann Trop Paediatr 2002; 22: 297-298
9. Cakir N, Pamuk ON, Dönmez S: Henoch-Schönlein purpura in two brothers imprisoned in the same jail: Presentation two months apart. Clin Exp Rheumatol 2004; 22: 235-237
10. Motoyama O, Iitaka K: Familial cases of Henoch-Schönlein purpura in eight families. Pediatr Int 2005; 47: 612-615
11. Balbir-Gurman A, Nahir AM, Braun-Moscovici Y: Vasculitis in siblings with familial Mediterranean fever: A report of three cases and review of the literature. Clin Rheumatol 2007; 26: 1183-1185
12. Zhang Y, Gu W, Mao J: Sibling cases of Henoch-Schönlein purpura in two families and review of literature. Pediatr Dermatol 2008; 25: 393-395
13. Shin JI, Lee JS: Familial clusturing of Henoch-Schönlein purpura or IgA nephropathy: Genetic background or environmental triggers? Pediatr Dermatol 2008; 25: 651
14. De Veber LL: Letter: Henoch-Schönlein purpura in a family. Can Med Assoc J 1974; 111: 16
15. Levy-Khademi F, Korman SH, Amitai Y: Henoch-Schönlein purpura: Simultaneous occurrence in two siblings. Pediatr Dermatol 2000; 17: 139-140