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Henoch-Schönlein purpura in two brothers imprisoned in the same jail: Presentation two months apart

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ABSTRACT

We present two brothers who came to us with similar complaints within a two-month interval and who were diagnosed as having Henoch-Schönlein purpura. Interestingly, the two brothers were prisoners in the same jail. In addition, we shall review the small number of familial Henoch-Schönlein purpura cases that have been reported in the literature to date. Our two patients exhibited arthritis and/or arthralgia, purpuric skin lesions, abdominal pain and hematuria, and were treated with steroids. We did not detect the presence of any inciting agent and hypothesize that an undefined factor present in the shared environment might have triggered the disease in two subjects with a similar genetic background.

Introduction

Although the pathogenesis of systemic vasculitides is not known with certainty, there is data indicating that genetic factors may cause a predisposition to these diseases (1). Henoch-Schönlein purpura (HSP) is a systemic vasculitis and various infectious agents, allergens, food and drugs underlie its etiology; however, the role of genetics is not clearly known (2, 3). Up to now, only a few familial HSP cases have been reported in the literature (4-9). Here we present two brothers with HSP who came to us within a 2-month interval and who were prisoners in the same jail. We also review other familial HSP cases.

Case 1

A 20-year-old male patient was referred to us with a one-month history of diffuse rash on his legs and buttocks, arthralgia of the knees and ankles, and abdominal pain. He had no other known disease and no history of any drug intake. He had been in jail for 3 years. On physical examination, his temperature was 36.6ºC, blood pressure 110/60 mmHg, and pulse rate 70/min. There was a purpuric rash on his buttocks that was especially prominent below the knees, and periankle edema. There was no organomegaly, but he had mild abdominal tenderness. The ankle joints were swollen and warm, and there was limitation of motion. Otherwise, the physical examination was within normal limits. Laboratory test results were as follows: hemoglobin 14.8 g/dl; leucocytes 10,800/ mm^3; platelets 478,000/mm^3; erythrocyte sedimentation rate (ESR) 54 mm/hr; CRP 2.3 mg/dl; other biochemical values were normal. Microscopic examination of the urinary sediment revealed many erythrocytes, 20-30 leucocytes/ hpf. There was no proteinuria and urinary cultures remained sterile. Serum immunoglobulins, C_3, C_4 complement levels, and the anti-streptolysin O titer were within normal ranges. Occult blood in the stool was negative. Antinuclear antibody (ANA), antineutrophil cytoplasmic antibodies (ANCAs), and rheumatoid factor (RF) were negative. Skin biopsy revealed findings compatible with leucocytoclastic vasculitis. Abdominal ultrasonography and chest X-ray were normal.

The patient was diagnosed as having HSPand placed on therapy with 30 mg prednisolone/day. His abdominal pain and arthralgia improved; ESR and CRP became normal; and the purpuric skin lesions and microscopic hematuria disappeared. The steroid was tapered and discontinued. The patient has reported no complaints as of the seventh month of follow-up.

Case 2

A 26-year-old male patient, the brother of the above-mentioned patient who was incarcerated in the same jail, came to us 2 months after his brother with the complaints of diarrhoea of 15 days' duration, abdominal pain, arthralgia, and a diffuse rash on his lower extremities. He had no known disease or history of drug intake. On physical examination, his temperature was 37.2ºC, blood pressure 140/90 mmHg, and pulse rate 90/min. Like his brother he had a diffuse purpuric rash on his buttocks that was particularly prominent below the knees and which did not fade with pressure. He had symmetrical pain of the knees and ankles, and swelling, warmth and limitation of motion of the knee joints. The right lower abdominal quadrant was tender to palpation. Laboratory test results were: hemoglobin

Table I. Familial HSPcases reported in literature until now and their clinical features.

References	Age/Sex	Relationship	Time of HSP	Associated factor	Clinical findings	HLAtyping	Therapy
Levy-Khademi (4)	8/F 7/F	Sisters	Simultaneously	Wearing new slippers	Purpuric rash, arthritis Purpuric rash, arthralgia	NA NA	Symptomatic
Lofters (5)	NA	Three members of a family	Several years apart	?	?	NA	?
De Veber (6)	NA	3 members of a family (2 siblings)	Simultaneously (2)	Streptococcal pharyngitis (2)	?	NA	?
Levy (7)	NA	Sisters	?	?	?	NA	?
Yasukawa (8)	33/F NA/F	Two sisters	Several years apart	Pregnancy (1)	HSPnephritis (1)	HLADR4, DQ4 shared	Steroid+ dipyridamole
Grech (9)	6/M 13/M	Two siblings	4 weeks apart	Infectious mononucleosis	Hematuria, purpuric rash, rash, joint pain	NA	?

NA: not available.

13.4 g/dl; leucocytes 13,700/mm^3; platelets 578,000/mm^3; ESR 78 mm/hr; CRP 3.4 mg/dl; other biochemical tests were normal. Urinalysis showed 40-50 leucocytes/hpf. There was no proteinuria and urinary cultures were sterile. Serum immunoglobulins, C_3, C_4 complement levels, and the ASO titer were within the normal ranges. There was no occult blood in the stool. ANA, ANCA, and RF were negative. Abdominal USG and chest X-ray showed no pathologic findings.

During the follow-up, the patient showed microscopic hematuria and his abdominal pain became worse. He was started on 30 mg prednisolone/day. His abdominal pain and arthralgia improved on the third day of therapy. His ESR, CRP became normal and the purpuric lesions disappeared after one week. There was no microscopic hematuria at the end of the fifth month of therapy.

Discussion

Both of our patients had purpuric rash on their lower extremities, abdominal pain, arthralgia, and microscopic hematuria characteristic of HSP. In the second patient a skin biopsy was not performed. However, he met the classification criteria for HSP(10). Their complaints regressed within a short time after corticosteroid therapy. We did not detect any infective agent, drug or allergen which could have triggered the HSP in either case. Our cases were interesting in that the two patients were brothers, their clinical symptoms became manifest within a 2-month interval and they were staying in the same jail.

Only a few familial HSP cases have been described (4-9). The clinical features of the cases reported in the literature up to now are presented in Table I. In two families HSP developed simultaneously (4, 6), while in the others HSP was diagnosed with an interval of many years (5, 8). In each of the two families with simultaneous HSP (4) a single inciting agent – the wearing of new slippers and a preceding streptococcal infection, respectively – were identified (6). Recently, two siblings with HSP following infectious mononucleosis have been described, although one of these siblings had hematuria before the HSP (9). There are cases reporting an association between HSP and infections such as parvovirus B19 and herpesvirus; however, one report stated that there was no relation with any viral agents (11). In our cases, we did not detect any etiologic factor including streptococci and viral agents whose serologies were available – namely, EBV, HSV, parvovirus B19, HIV. However, it appears likely that the same triggering factor might have operated in the same jail setting.

This report supports the claim that unknown environmental factors in genetically predisposed individuals may account for the pathogenesis of HSP. With respect to this, HLA-DRB1*01 was found to be associated with a higher risk of HSP in the Italian (12) and Spanish (13) population. However, unlike HLA-B*35 (14), HLA-DRB1* 01 did not seem to be a marker of disease severity, in particular for renal complications. In another study, the DQA1 *301 gene and complement 4 gene deletion were implicated in the pathogenesis of HSP(15). In unselected patients with cutaneous vasculitis from Northwest Spain, polymorphism of interleukin-8 influenced the susceptibility to renal involvement (16). In addition, interleukin-1 receptor antagonist gene polymorphism was found to play a direct role in the severity and outcome, but not the susceptibility of unselected patients with cutaneous vasculitis (17). Although no association of this polymorphism was observed in vasculitis limited to skin, the carriage of interleukin-1 receptor antagonist allele 2 in HSP patients was asssociated with a higher risk of severe renal manifestations and renal sequelae (17). Finally, in HSP patients from Northwest Spain, polymorphism at codon 469 of the intercellular adhesion molecule-1 locus was associated with protection againist severe gastrointestinal complications (18). Unfortunately, we did not perform HLA typing analysis in our patients.

HSPis encountered at a high frequency

(7%) during the course of familial Mediterranean fever (FMF), which shows familial clustering and is frequent in our country (19). We therefore considered the possibility that our patients had HSP associated with FMF, but neither they nor their relatives showed any signs of FMF. Consequently, although no certain etiologic factor could be determined in our patients, we believed that HSP had been triggered in the two subjects with a similar genetic background who were living in the same environment. We think that our cases underline the importance of genetics in the pathogenesis of HSP.

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