

Diagnosis of Henoch-Schönlein purpura by sonography and radionuclear scanning in a child presenting with bilateral acute scrotum

Li-Hsin Huang¹, Chun-Yan Yeung^{2,3}, Shyh-Dar Shyur¹, Hung-Chang Lee^{2,4}, Fu-Yuan Huang⁵, Nien-Lu Wang⁶

Divisions of ¹Allergy and Immunology, and ²Gastroenterology and Nutrition, Department of Pediatrics, Mackay Memorial Hospital, Taipei; ³Mackay Junior College of Nursing, Taipei; ⁴Taipei Medical University, Taipei; and ⁵Division of Infectious Diseases, Department of Pediatrics, and ⁶Department of Pediatric Surgery, Mackay Memorial Hospital, Taipei, Taiwan, ROC

Received: July 10, 2003 Revised: October 12, 2003 Accepted: October 25, 2003

Acute scrotum presenting as the only initial manifestation of Henoch-Schönlein purpura (HSP) is so unusual that the diagnosis can easily be missed. We report this condition in a 4-year-old boy admitted with bronchopneumonia. Bilateral painful scrotal swelling with ecchymosis occurred on the second day of hospitalization. Scrotal sonography was performed and a good blood supply was documented. Scrotal nuclear scanning was performed and was consistent with bilateral epididymoorchitis. Multiple purpuric lesions over the lower extremities and perineal region developed on the third day of hospitalization. Intermittent abdominal pain and knee pain developed thereafter. HSP was diagnosed and steroids were prescribed. The symptoms subsided gradually and no complication was noted. This case reminds us that an acute scrotum may be the only initial manifestation of HSP. Sonography and nuclear scanning can help rule out other diseases.

Key words: Preschool child, Schönlein-Henoch purpura, scrotum, spermatic cord torsion, ultrasonography

The involvement of the male genitalia presenting as the only initial manifestation of Henoch-Schönlein purpura (HSP) is so unusual that the diagnosis can easily be missed. To date, only 5 cases have been reported in which acute scrotum was the initial presenting symptom in patients with HSP [1-4]. Unfortunately, most of these patients underwent surgical intervention for fear of testicular torsion. We report a case of HSP presenting as acute scrotum in a 4-year-old boy.

Case Report

A previously healthy 4 year-old boy suffered from cough with sputum and rhinorrhea for nearly 2 weeks and had been treated at local clinics. However, fever up to 38.5°C developed 2 days before admission. Upon admission, coarse breath sounds were heard bilaterally. Chest X-ray showed increased parahilar peribronchial infiltration. Laboratory data obtained on admission showed a hemoglobin of 12.4 g/dL, a hematocrit of

37.4%, a white blood cell count of 15,060/mm³ with a normal differential count and a platelet count of 472 × 10³/μL. C-reactive protein was 0.37 mg/dL and erythrocyte sedimentation rate was 21 mm/hour. Mycoplasma antibody and cold hemagglutinin titers were within normal limits. Intravenous cefazolin (100 mg/kg/day) was administered. Fever did not develop after admission. Bilateral painful scrotal swelling with ecchymosis was noted at the second night (Fig. 1). A urologist was consulted immediately and scrotal sonography was performed, documenting a good blood supply to the testis. Urinalysis was normal. Prothrombin time, partial thromboplastin time and international normalized prothrombin ratio were within normal limits. Hemogram was rechecked and the hemoglobin was 11.9 g/dL, hematocrit 35.0%, white blood cell count 9210/mm³ with a normal differential, and platelet count 514 × 10³/μL. Scrotal nuclear scanning was arranged the next morning. Scrotal nuclear scanning confirmed no testicular torsion and bilateral epididymoorchitis was considered. (Fig. 2) Multiple purpura over both legs and perineal region was noted several days later (Fig. 3). Intermittent abdominal pain and knee pain developed thereafter. HSP

Corresponding author: Dr. Chun-Yan Yeung, No. 92, Sec. 2, Chung-Shan North Road, Taipei, Taiwan 104, ROC.
E-mail: cyyeung@ms2.mmh.org.tw

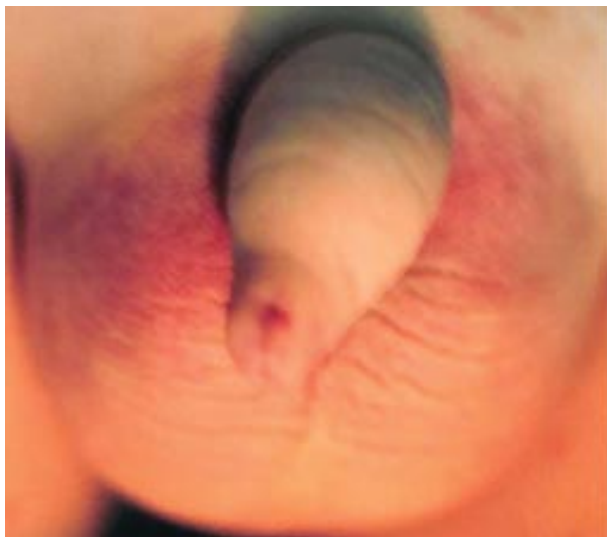


Fig. 1. Bilateral scrotal swelling with ecchymosis.

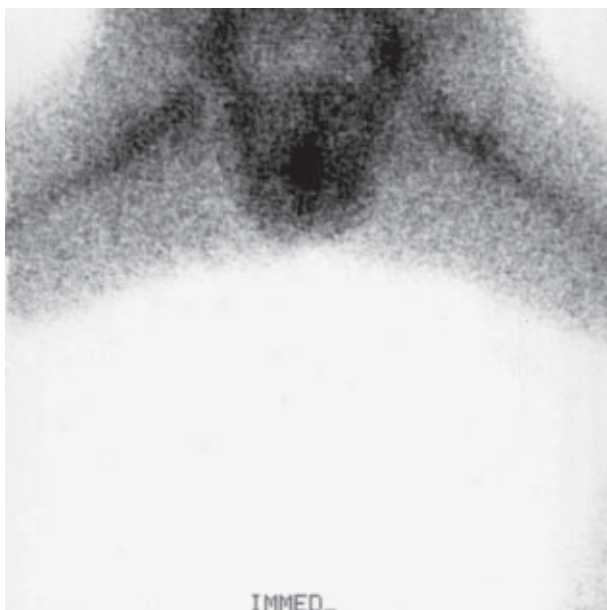


Fig. 2. Increased radioactivity of the scrotum bilaterally.

was diagnosed and intravenous dexamethasone was administered (0.5 mg/kg/day). The symptoms subsided gradually and 5 days later he was started on oral prednisolone (1 mg/kg/day). He was discharged in stable condition. Knee pain and purpura of lower extremities flared up a few times during the 3-month period after discharge. Corticosteroid treatment was continued during that period.

Discussion

Acute scrotum in children frequently presents a diagnostic dilemma. For fear of testicular torsion,



Fig. 3. Purpura over bilateral lower legs and perineal region.

the patients usually undergo surgical exploration, although most cases have no surgical indications [1-4]. HSP, also known as anaphylactoid purpura, is a syndrome of systemic vasculitis of unknown cause characterized by a non-thrombocytopenic purpura and associated primarily with skin, joint, intestinal and renal involvement. The first case of male genital involvement in this syndrome was reported by Allen et al in 1960 [5]. Since then, there have been numerous reports of this condition with the incidence of scrotal involvement varying from 2 to 38% [6-12]. The disease is generally self-limited and responsive to steroid therapy [13]. Among previous cases of HSP that had acute scrotal swelling as the only initial presentation, none was found to have testicular torsion [1-4]. There has been only 1 report of true testicular torsion in a patient with HSP [14].

There have been few reports of HSP in Taiwan. Lin et al studied 27 children (17 boys and 10 girls) with HSP, among whom only 1 child had acute scrotal pain [15]. Lin et al reported that 2 among 17 children (6 boys and 11 girls) with HSP had scrotal swelling [16]. Choong et al noted acute scrotum with purpuric lesions on the lower extremities in a boy [17]. However, none of them had acute scrotum as the only initial presentation.

In our patient, the admitting diagnosis was bronchopneumonia and initial treatment was focused on infection control. However, the sudden onset of

bilateral ecchymotic painful scrotal swelling without the typical purpuric lesions of HSP made the diagnosis difficult. In previous reports, the majority of boys had the diagnosis of HSP established before scrotal complaints developed [18]. In this situation, scrotal nuclear scanning and scrotal sonography are beneficial in evaluating patients with an acute scrotum [19].

The sonographic findings of symptomatic HSP involving the scrotum are remarkably consistent with epididymal enlargement, scrotal skin thickening and hydrocele. The testis is not significantly enlarged, nor is intratesticular blood flow markedly altered [7,11]. The finding of a sonographically normal testis makes torsion unlikely. The sonographic findings of HSP are sufficiently characteristic to allow distinction from torsion in most cases and have relatively high sensitivity (89 to 100%) and specificity (97 to 100%) [20-22].

Scrotal nuclear scanning is extremely accurate in differentiating hyperemia from impaired blood flow encountered in torsion of the spermatic cord [23]. The demonstration of increased radionuclear activity of the affected hemiscrotum suggests hyperemia. Since vasculitis of the scrotum and testicle is the basis for the swelling in HSP and the testicular blood supply is intact, the images are expected to show increased activity on the affected side [24].

Kadish and Bolte found that patients with testicular torsion were much more likely to have a tender testicle, abnormal testicular lie, and/or an absent cremasteric reflex when compared to patients with epididymitis [22]. Rabinowitz also found that no patient with a normal cremasteric reflex had testicular torsion [25]. Awareness of the possible association between scrotal involvement and other symptoms of HSP will help in making the diagnosis. The overall prognosis is excellent. All patients with scrotal involvement recovered completely and none of them was found to have infertility thereafter.

This case reminds us that an acute scrotum may be the only initial manifestation of HSP and that this condition needs to be included in the differential diagnosis. Although HSP infrequently presents with an acute scrotum initially, a precise diagnosis in patients with this condition will prevent unnecessary surgery.

References

1. Eadie DGA, Higgins PM. Apparent torsion of the testicle in a case of Henoch-Schönlein purpura. *Br J Surg* 1964;51: 634-5.
2. Haahr J, Sparrevojn S. Epididymitis in children: A brief review together with reports of six cases. *Acta Paediatr Scand* 1971;60:16-21.
3. Mikuz G, Hofstadter F, Hager J. Testis involvement in Schönlein-Henoch purpura. *Pathol Res Pract* 1979;165:323-9.
4. O'Regan S, Robitaille P. Orchitis mimicking testicular torsion in Henoch-Schönlein purpura. *J Urol* 1981;126:834-5.
5. Allen DM, Diamond LK, Howell DA. Anaphylactoid purpura in children (Schönlein-Henoch syndrome): Review with a follow-up of the renal complications. *Am J Dis Child* 1960;99: 833-54.
6. Ben-Chaim J, Korat E, Shenfeld O, Shelhav A, Jonas P, Goldwasser B. Acute scrotum caused by Henoch-Schönlein purpura with immediate response to short term steroid therapy. *J Pediatr Surg* 1995;30:1509-10.
7. Byrn JR, Fitzgerald JF, Northway JD, Anand SK, Scott JR. Unusual manifestations of Henoch-Schönlein syndrome. *Am J Dis Child* 1976;130:1335-7.
8. Chamberlain RS, Greenberg LW. Scrotal involvement in Henoch-Schönlein purpura: a case report and review of the literature. *Pediatr Emerg Care* 1992;8:213-5.
9. Mintzer CO, Nussinovitch M, Danziger Y, Minouni M, Varsano I. Scrotal involvement in Henoch-Schönlein purpura in children. *Scand J Urol Nephrol* 1998;32:138-9.
10. Khan AU, Williams TH, Malek RS. Acute scrotal swelling in Henoch-Schönlein syndrome. *Urology* 1977;10:139-41.
11. Ben-Sira L, Laor T. Severe scrotal pain in boys with Henoch-Schönlein purpura: incidence and sonography. *Pediatr Radiol* 2000;30:125-8.
12. Sahn DJ, Schwartz AD. Schönlein-Henoch syndrome: observations on some atypical clinical presentations. *Pediatrics* 1972;49:614-6.
13. Kher KK, Sheth KJ, Makker SP. Stenosing ureteritis in purpura. *J Urol* 1983;129:1040-2.
14. Loh HS, Jalan OM. Testicular torsion of Henoch-Schönlein syndrome. *BMJ* 1974;2:96-7.
15. Lin SJ, Chao HC, Huang JL. Gastrointestinal involvement as the initial manifestation in children with Henoch-Schönlein purpura - clinical analysis of 27 cases. *Acta Paed Sin* 1998;39: 186-90.
16. Lin SC, Tsai MJ, Huang MT, Wu KH, Wang LH, Chiang BL. Immunological studies of children with anaphylactoid purpura. *Acta Paed Sin* 1998;39:247-52.
17. Choong CS, Liew KL, Liu PN, Kuo TU, Su CM. Acute scrotum in Henoch-Schönlein purpura. *Chin Med J (Taipei)* 2000;63: 577-80.
18. Lee JS, Choi SK. Acute scrotum in 7 cases of Schönlein-Henoch syndrome. *Yonsei Med J* 1998;39:73-8.
19. Stein BS, Kendall AR, Harke HT, Naiman JL, Karafin L. Scrotal imaging in the Henoch-Schönlein syndrome.

- J Urol 1980;124:568-9.
20. Yazbeck S, Patriquin HB. Accuracy of Doppler sonography in the evaluation of acute conditions of the scrotum in children. *J Pediatr Surg* 1994;29:1270-2.
 21. Kass EJ, Stone KT, Cacciarelli AA, Mitchell B. Do all children with an acute scrotum require exploration. *J Urol* 1993;150:667-9.
 22. Kadish HA, Bolte RG. A retrospective review of pediatric patients with epididymitis, testicular torsion and torsion of testicular appendages. *Pediatrics* 1998;102:73-6.
 23. Stein BS, Kendall AR, Harke HT, Naiman JL, Karafin L. Scrotal imaging in the Henoch-Schönlein syndrome. *J Urol* 1980;124:568-9.
 24. Naiman JL, Harcke T, Sebastianelli J, Stein BS. Scrotal imaging in the Henoch-Schönlein syndrome. *J Pediatr* 1978;92:1021-2.
 25. Rabinowitz R. The importance of the cremasteric reflex in acute scrotal swelling in children. *J Urol* 1984;132:89-90.