An Unusual Case of Henoch-Schönlein Purpura in an Elderly Male

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Abstract

Henoch-Schönlein purpura (HSP) is a subset of cutaneous small vessel vasculitis (CSVV) characterized by IgA deposition in the walls of small blood vessels leading to non-thrombocytopenic palpable purpura, typically of the lower extremities. Other immune factors such as IgM, IgG, complement, and fibrinogen may be found in vessels. The disease is characterized by a tetrad of manifestations including palpable purpura, arthralgia/arthritis, abdominal pain, and renal disease.1 Morbidity in the HSP patient population is correlated with chronic renal failure secondary to glomerulonephritis. HSP is rarely seen in the adult and geriatric population; approximately 90% of patients are children. We present a case of HSP in a nonverbal, nonambulatory 62-year-old Caucasian male.

Introduction

Henoch-Schönlein purpura (HSP) is a cutaneous small vessel vasculitis with deposition of IgA and other immune factors within the vessel walls. The disease was originally identified in 1801 by Johann Schönlein and his student, Eduard Henoch, who described the clinical signs and symptoms.1 It is highlighted by a tetrad of symptoms and complications—palpable purpura, arthralgia/arthritis, abdominal pain, and renal disease. Although HSP is significantly more common in the pediatric population, failure to diagnosis and treat adults can have serious ramifications. We report a case of HSP in a 62-year-old patient with an extensive past medical history who initially presented to the clinic with a lower extremity rash.

Case Report

A 62-year-old, minimally verbal, non-ambulatory Caucasian male presented to the dermatology outpatient clinic complaining of a new-onset rash on his lower extremities for one week. The patient denied any symptoms of itching or pain. Clotrimazole/betamethasone topical cream prescribed by his internist showed no improvement. The patient reported no known allergies and no significant family history of vasculitis or autoimmune disease. The patient’s extensive past medical history included: congestive heart failure, cerebral vascular accident, dementia, epilepsy, and dysphagia. Medication list included clonazepam, warfarin, phenytoin, simvastatin, digoxin, furosemide, and diltiazem. The patient did admit to a history of tobacco use.

Figure 1. Multiple discrete, non-blanchable, purpuric papules with hemorrhagic crust on the anterior lower legs symmetrically.
Physical exam revealed multiple discrete, non-blanchable, purpuric papules with hemorrhagic crust on the anterior lower legs symmetrically (Figure 1). Provisional diagnoses included: leukocytoclastic vasculitis secondary to drug, connective-tissue disease or HSP, folliculitis, neurotic excoriations, scabies, insect bites, lymphomatoid papulosis, and pityriasis lichenoides et varioliformis acuta.

Two 3 mm punch biopsies were performed and sent for routine hematoxylin and eosin (H&E) staining and direct immunofluorescence (DIF). One biopsy was obtained from the left superior lateral tibia and another from the left inferior medial tibia. A complete metabolic panel, complete blood count with differential, urinalysis, and hepatitis panel were ordered. Labs on the patient were unremarkable except for anemia (hemoglobin 11.1). Renal function was stable (BUN: 11 creatinine: 0.6). H&E biopsy showed evidence of early leukocytoclastic vasculitis (Figure 2). DIF studies were compatible with HSP/IgA vasculitis (Figure 3). There was also evidence of neutrophils, incipient nuclear dust of neutrophils, and extravasation of erythrocytes (H&E stain).

HSP/IgA vasculitis (Figure 3). There was also granular perivascular deposition of C3 and smooth perivascular deposition of fibrinogen but no perivascular deposition of IgM on DIF. Treatment plan included clobetasol 0.05% ointment every 12 hours to the lower extremities as well as nephrology consultation (pending).

**Discussion**

HSP has an annual incidence of about 20 per 100,000 children less than 17 years of age with a peak incidence of 70 per 100,000 in children between the ages of four and six years old. There is a slight male predominance. The disease occurs less frequently in African Americans, and is more prevalent in the fall and winter months. The incidence of HSP in the adult population is approximately 1.3 per 100,000 patients, and data on the elderly population is even more sparse.

While HSP is associated with deposition of IgA in small blood vessels, there has also been literature reporting alterations in glycosylation of IgA and elevated levels of IgA antircardiolipin antibodies. In adults, vascular IgA deposits are highly specific for HSP, although not all patients may have a positive DIF. Additionally, complement activation, glomerular crescent formation and vascular damage have been identified as important mechanisms underlying renal involvement in HSP. Multiple triggers for the condition have been suggested, although the actual cause still remains unknown. In children, symptoms may be preceded by an upper respiratory infection, more specifically attributed to group A beta-hemolytic streptococcus. Multiple disease states and drugs have been implicated in the development of HSP including pregnancy, α1-antitrypsin deficiency, alcohol, vaccinations, chlorpromazine, losartan, aspirin, and antimicrobials such as penicillin, ampicillin, clarithromycin, and erythromycin.

HSP is characterized by both cutaneous and extracutaneous manifestations. Children almost universally present with erythematous, urticarial papules that rapidly develop into petechiae and palpable purpura. Vesicles, bullae and necrotic ulcers may also be present. The most common locations for these findings are on pressure-dependent areas such as the buttocks and lower extremities, although the elbow and knees may also be involved. Individual lesions usually fade within a week, resulting in hyperpigmentation, although recurrent lesions are possible. Cumulative skin manifestations usually last for six to 16 weeks, although 5% to 10% of patients will develop chronic cases.

Commonly reported extracutaneous manifestations include arthritis, abdominal pain, and renal disease. Of the reported symptoms, joint pain was the most common extracutaneous manifestation, occurring in up to 84 percent of patients. The pain is usually transient and oligoarticular and often afflicts the lower extremities, resulting in pain with ambulation. Gastrointestinal symptoms are varied, ranging from mild nausea, vomiting and abdominal pain to more emergent cases of intussusception, bowel ischemia and perforation. The abdominal pain has been attributed to submucosal hemorrhage and edema. In cases with gastrointestinal involvement, subclinical laboratory findings that may indicate more advanced disease include a positive fecal occult blood test, hypoalbuminemia and a positive α1-antitrypsin.

Adult manifestations of HSP do not necessarily present like those seen in the pediatric population. When compared to children, adults have a lower incidence of prior upper respiratory infection upon development of HSP. Abdominal pain and fever are less prevalent during the course of the disease in adults, while joint complaints and renal disease are increased. A higher frequency of nephrotic syndrome, hypertension and elevated serum creatinine may be seen in the adult population, which can be especially concerning in the presence of comorbidities. Furthermore, literature suggests that renal manifestations become even more prominent in elderly patients compared to adults less than 60 years old.

A clinical diagnosis of HSP is usually made in children with the prevalence of cutaneous and extracutaneous manifestations, which are often present. However, the varied presentation in adult patients may prove more challenging diagnostically. Purpura can be seen with infection, hypersensitivity vasculitis, rheumatoid arthritis, and other small vessel vasculitides. These can include granulomatosis with polyangiitis (Wegener’s), microscopic polyangiitis, and eosinophilic granulomatosis with polyangiitis (Churg-Strauss syndrome). Rheumatoid arthritis and systemic lupus erythematosus can mimic the joint complaints, while IgA nephropathy or Berger’s disease could present similar renal findings.

A definitive diagnosis is usually based upon both clinical manifestations and biopsy. A biopsy is more valuable in the adult population because HSP is less common and extracutaneous symptoms are not always apparent. When assessing skin histopathology, proper sampling techniques are paramount to yielding accurate diagnostic results. A punch biopsy from the edge of a fresh lesion, ideally less than 24 hours old, is the most effective and accurate technique. On
H&E staining, tissue will show a leukocytoclastic vasculitis secondary to deposition of IgA within postcapillary venules in the papillary dermis. Additionally, neutrophils and monocytes comprise the inflammatory infiltrate in most cases. Direct immunofluorescence (DIF) of the vessels will demonstrate perivascular IgA, C3 and fibrin deposits.

Additional laboratory testing such as a complete blood count, serum chemistries, coagulation studies, and a urinalysis should be considered, especially when a diagnosis is questionable. Urinalysis may reveal microscopic hematuria, macroscopic hematuria, proteinuria, or cellular casts. In select patients, a renal biopsy might be warranted, possibly showing a wide range of glomerular changes on both light microscopy and immunofluorescence. Abdominal radiographs and ultrasonography may be considered if the patient also has abdominal complaints.

HSP is usually self-resolving, although supportive, symptomatic and disease-modifying approaches have been proposed. Hydration, rest, and pain relief with analgesics should be considered if there are no contraindications. Hospitalized patients must be monitored for surgical abdomen, intracranial hemorrhage, anemia, hypertension and electrolyte disturbances. Parenteral nutrition must be considered in patients with severe abdominal symptoms. NSAIDs should be strongly considered for pain relief. While they do not increase the risk of GI hemorrhage, patients should be assessed for current GI bleeding before administration. Angiotensin-converting enzyme inhibitors and angiotensin receptor blockers are utilized for their antihypertensive effects and also have proven effective in slowing the progression of kidney disease. Glucocorticoids have been reported to shorten the duration of abdominal symptoms, decrease risk of recurrence, and decrease renal involvement. However, the long-term benefits of steroid administration are mixed, so the cost/benefit must be assessed on an individual basis.

Additionally, other multi-drug regimens that include azathioprine, cyclophosphamide, and dipyridamole have been utilized. Cyclophosphamide in particular is often used in conjunction with steroids to help alter the disease course. Case reports have also shown positive results with the use of rituximab in patients refractory to both steroid and cyclophosphamide combinations. Furthermore, plasma exchange has shown promising results in patients with severe initial presentations of HSP. Early research in experimental models has explored the possible role of IL-1 receptor antagonists in reducing adhesion molecules and subsequent crescent formation.

Morbidity and mortality of HSP are usually correlated with severity of renal disease. Patients with biopsy findings of nephrotic syndrome, renal insufficiency, hypertension, crescentic glomerulonephritis, and tubulointerstitial fibrosis have a worse prognosis. However, it was shown that the severity of pathology (graded I-V) was more predictive of outcome compared to initial clinical presentation. Of note, newer literature recommends further histological classification of the pathology in an attempt to detail the disease progression and predict the response to therapy. The characteristics proposed are more than just crescent formation and include: mesangial hypercellularity, endocapillary hypercellularity, crescents, segmental and global glomerulosclerosis, arteriolosclerosis, interstitial inflammation, and tubular atrophy/interstitial fibrosis. Although the literature is mixed, 10% to 30% of adults with HSP will progress to end-stage renal disease within 15 years. As a result, patients should be periodically monitored for worsening renal function and treated accordingly.

Conclusion
HSP is a well-documented clinical disease in children, but is much less common in adults, especially in the elderly. Although HSP histology is difficult to distinguish from that of LCV, vascular IgA is specific, but not sensitive, for HSP. The constellation of palpable purpura, arthralgia/arthritis, abdominal pain and renal complications usually aid in the diagnosis. However, it is important to consider HSP in patients with cutaneous findings and a lack of systemic complaints, even in the elderly population. The fact that our patient was both nonverbal and nonambulatory complicated the diagnosis by limiting our ability to clinically evaluate extracutaneous findings.

References

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