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## Gastrointestinal Dominant Henoch Schönlein Purpura in Children: A Report of Two Cases

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### Abstract

*Background: Henoch–Schönlein Purpura (HSP) is the most common vasculitis in children, characterized by purpura, arthritis, gastrointestinal involvement, and nephritis. Gastrointestinal symptoms that appear before the onset of purpura may delay diagnosis and increase the risk of serious complications. Objective: To report two pediatric HSP cases with predominant gastrointestinal manifestations without initial purpura, emphasizing the diagnostic challenges and the importance of early detection to prevent complications. Case presentation: Case 1: A 10-year-old boy presented with fever, severe vomiting, abdominal pain, and dysuria without initial purpura. Palpable purpura appeared on the second day, confirming IgA vasculitis. The patient improved after intravenous hydration, corticosteroids, antibiotics, and vitamin D supplementation. Case 2: A 6-year-old girl presented with vomiting, severe abdominal pain, and high fever without purpura at admission. Purpura appeared on the third day, confirming IgA vasculitis. The patient showed clinical improvement following supportive care and corticosteroid therapy. Conclusion: Henoch–Schönlein Purpura with predominant gastrointestinal manifestations is relatively rare and often leads to misdiagnosis at the early stage, requiring a more careful diagnostic approach.*

**Keywords:** *Henoch–Schönlein purpura, gastrointestinal, corticosteroids*

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## INTRODUCTION

Henoch–Schönlein Purpura (HSP), also known as Immunoglobulin A vasculitis (IgAV), is a systemic non-granulomatous vasculitis characterized by neutrophilic infiltration and immune complex deposition dominated by IgA within the walls of small vessels, including arterioles, capillaries, and venules, particularly in the skin, synovial membranes, gastrointestinal tract, and urinary system (Sestan & Jelusic, 2023; Roache-Robinson et al., 2025). Clinically, HSP is the most common form of vasculitis in children, though it can also occur in adolescents and adults. Globally, its annual incidence in children ranges from 3–27 per 100,000, with a reported prevalence of 6.1–20.4 per 100,000 (Sapina et al., 2021; Piram et al., 2017). The highest incidence is observed in children aged 4–6 years, and approximately 90% of cases occur in individuals under 10 years old (Hochberg et al., 2019). IgA vasculitis is more common in males, with a male-to-female ratio of approximately 1.5:1 (Jauhola, 2012).

The principal clinical manifestations of HSP include non-thrombocytopenic palpable purpura accompanied by systemic symptoms such as arthritis, gastrointestinal involvement, and nephritis (Chen & Mao, 2015). To date, no gold-standard diagnostic test exists, and diagnosis is primarily clinical. The widely accepted criteria require the presence of purpura or petechiae predominantly on the lower extremities, accompanied by at least one of the following: abdominal pain, histopathological findings, arthritis or arthralgia, or renal involvement (Ozen et al., 2010). Although uncommon, involvement of other organs, including the lungs, nervous system, and testes—has also been reported (Davin & Coppo, 2014).

Gastrointestinal involvement is a frequent but sometimes early manifestation of HSP, with prevalence reaching 35–85% of cases. A retrospective analysis by Cao & Liu (2025) of 195 children diagnosed with HSP from 2019 to 2024 found gastrointestinal manifestations in 62 patients. Symptoms may include nausea, vomiting, abdominal pain, and gastrointestinal

bleeding. In a study of 261 patients aged 1–20 years, abdominal pain occurred in 151 patients (58%), and 17.6% exhibited gastrointestinal bleeding confirmed by positive stool occult blood tests (Chang et al., 2004). Notably, gastrointestinal symptoms can precede the appearance of purpura; 10–40% of patients develop abdominal pain before cutaneous lesions emerge (Choong & Beasley, 1998; Hetland et al., 2017; Sato et al., 2022).

Diagnosing HSP is generally straightforward when the characteristic purpuric rash appears early. However, when abdominal symptoms arise first, or when purpura is initially absent, the diagnosis may become challenging. Delayed diagnosis has been associated with severe abdominal complications, including gastrointestinal perforation and intussusception. Therefore, by presenting two cases of HSP with predominant gastrointestinal manifestations (fever, vomiting, abdominal pain) preceding the onset of purpura and accompanied by urinary symptoms, we aim to highlight the diagnostic challenges of atypical HSP presentations. Early recognition of such variants is essential to ensure timely diagnosis and intervention, thereby preventing serious complications.

## CASE REPORTS

### Case 1

A 10-year-old boy presented to the Emergency Department at night with chief complaints of fever and vomiting. The fever had persisted continuously for 16 hours prior to admission and was accompanied by generalized body pain. Since the morning, the patient had experienced more than ten episodes of vomiting containing food and water, resulting in marked fatigue. He also reported dysuria and reduced appetite and fluid intake.

Vital signs on admission showed a blood pressure of 118/76 mmHg, pulse rate of 99 beats/min, respiratory rate of 20 breaths/min, and temperature of 38°C. Nutritional status was normal. Abdominal examination revealed epigastric tenderness without distension or signs of peritonitis. Initial laboratory results showed Hb 12.8 g/dL, leukocytes 11,200/ $\mu$ L with 88% neutrophils, platelets 250,000/ $\mu$ L, and hematocrit 38%. Serum electrolytes revealed potassium at 3.45 mmol/L, slightly below the lower limit of normal.

On the second day of hospitalization, the patient developed palpable erythematous purpura, with miliaria- to lenticular-sized lesions diffusely distributed over the upper and lower extremities bilaterally. The non-blanching, non-traumatic lesions were characteristic of palpable purpura. The presence of purpura along with a history of colicky abdominal pain, severe vomiting, and dysuria raised strong suspicion of Henoch–Schönlein Purpura (HSP). Given the accompanying urinary symptoms, further evaluation for possible HSP nephritis was performed.

On the third day, immunoserological testing revealed IgA 95 mg/dL, complement C3 168.7 mg/dL, C4 32.6 mg/dL, and vitamin D level of 12.7 ng/mL (deficiency). These findings supported the diagnosis of HSP with possible renal involvement. The patient was treated with intravenous hydration, corticosteroids, antibiotics, and oral vitamin D supplementation.

### Case 2

A 6-year-old girl presented to the Emergency Department with nausea and four episodes of vomiting, accompanied by abdominal pain primarily localized to the periumbilical area since the same day. The pain was persistent, progressively worsening, and caused significant discomfort. She also had a high fever, with a peak temperature of 39.4°C, continuous in pattern. The patient had not passed stool for two days prior to admission.

Initial vital signs showed a pulse rate of 140 beats/min, respiratory rate of 22 breaths/min, and temperature of 38.9°C. Abdominal examination revealed visible distension, periumbilical tenderness with positive muscular guarding, and suspicion of peritoneal irritation. Initial

laboratory evaluation showed Hb 12.1 g/dL, leukocytes 17,420/ $\mu$ L with 78% segmented neutrophils, platelets 294,000/ $\mu$ L, and hematocrit 37%, consistent with acute inflammation.

On the third day of hospitalization, palpable erythematous purpura appeared, consisting of miliaria- to lenticular-sized lesions diffusely distributed over both upper and lower extremities. The non-blanching, non-traumatic lesions, together with abdominal pain and fever, supported the diagnosis of Henoch–Schönlein Purpura. The patient received intravenous hydration, corticosteroids, antibiotics, and vitamin D supplementation, resulting in clinical improvement.



Picture 1. The skin manifestations in the first and second case of Henoch–Schönlein purpura

## RESULTS AND DISCUSSION

Henoch Schönlein Purpura (HSP), or IgA vasculitis, is the most common systemic vasculitis in the pediatric population and is characterized by palpable purpura, abdominal pain, arthralgia, and renal involvement. The disease results from the deposition of IgA containing immune complexes within small vessel walls, giving rise to its clinical manifestations. Although the exact etiology of HSP remains unclear, various infectious triggers have been shown to contribute to its pathogenesis. According to the study by Penghu et al. (2019), infection represents the predominant etiological trigger in children with HSP. Among the 1,200 children evaluated, 50.92% demonstrated evidence of infection on admission, with *Streptococcus* being the most common pathogen (17.08%), followed by *Helicobacter pylori* (5.92%) and *Mycoplasma pneumoniae* (4.83%).

In most patients, purpura is the initial presenting sign and facilitates the diagnostic process. However, in 10–40% of cases, gastrointestinal (GI) symptoms precede the appearance of purpura, creating diagnostic challenges particularly in the early phase of the illness (Choong & Beasley, 1998; Hetland et al., 2017; Sato et al., 2022). The two cases presented here demonstrate this pattern: both patients exhibited features consistent with HSP, but the diagnosis was initially obscured due to the predominance of gastrointestinal manifestations in the early course of the disease.

In both patients, the initial complaints included severe colicky abdominal pain and recurrent vomiting; one patient also presented with fever and dysuria in the absence of purpura during the first one to two days of hospitalization. Abdominal manifestations of HSP vary widely, ranging from abdominal pain, vomiting, and diarrhea to gastrointestinal bleeding. The findings in our cases align with those of Rubino et al. (2021), who reported that the most frequent gastrointestinal symptoms in pediatric HSP were abdominal pain (96%) and vomiting (58%).

Local data also support this pattern: in a study conducted at RSAB Harapan Kita, Jakarta, Widjajanti (2012) found that 71.4% of 70 HSP patients exhibited GI abnormalities, including abdominal pain (82%), vomiting (56%), constipation (22%), and melena (12%).

In both of our cases, palpable purpura emerged only on the second to third day of hospitalization. This pattern is consistent with the findings of Chen et al. (2003), who observed that 25.3% of patients developed gastrointestinal symptoms before purpura, with a mean interval of 4.8 days. Other studies similarly report that the interval between abdominal pain and rash onset ranges from 2 to 10 days, with wide variability, from as short as 1 day to as long as 28 days in patients who did not receive glucocorticoids (Calvi-Rio et al., 2014; Fan et al., 2021). The absence of purpura during the early phase often complicates diagnosis and increases the risk of misinterpretation, especially when gastrointestinal symptoms are predominant (McCarthy & Tizard, 2010).

From a pathogenic standpoint, purpura in IgA vasculitis arises from the production of galactose-deficient IgA1 (Gd-IgA1). These immunogenic IgA1 molecules bind to anti-IgA1 antibodies, forming large immune complexes that deposit in the walls of small vessels. This deposition activates the complement system, particularly the alternative and lectin pathways, leading to neutrophil and macrophage recruitment and endothelial injury. The resulting increase in microvascular permeability allows erythrocyte extravasation into the dermis, producing the characteristic palpable purpura. The predilection for the lower extremities and buttocks is associated with hemodynamic factors and gravitational effects (Roache-Robinson et al., 2023).

The same pathobiological mechanism explains the gastrointestinal manifestations observed in both patients. Immune complex deposition and subsequent inflammation within the intestinal vasculature can cause submucosal edema, microscopic hemorrhage, segmental ischemia, and increased intestinal motility, clinically presenting as colicky abdominal pain, recurrent vomiting, or even gastrointestinal bleeding. Similar involvement of the urinary tract vasculature may explain the dysuria observed in the second case. These findings are consistent with literature indicating that 70–90% of HSP patients experience gastrointestinal symptoms, and that such symptoms can precede purpura in a substantial subset of patients (Yan et al., 2021; Hosseini et al., 2024).

Renal involvement is another major determinant of prognosis in HSP. In the second case, early urinary symptoms and laboratory abnormalities raised concern for HSP nephritis. Epidemiologic studies estimate that 20–60% of pediatric HSP cases develop renal involvement, typically within the first one to two months of disease onset, although earlier manifestations have been described (Hetland et al., 2017). Long-term monitoring for at least six months is recommended, especially in patients with urinary abnormalities or elevated blood pressure, as renal manifestations may progress to persistent proteinuria or chronic nephropathy (McCarthy & Tizard, 2010).

Management of these two cases aligned with established therapeutic principles based on the severity of clinical presentation. Supportive care is typically sufficient for mild symptoms. For moderate symptoms, such as significant abdominal pain, arthritis, or early renal findings, systemic corticosteroids are indicated to reduce inflammation. Severe manifestations, including marked proteinuria, significant hematuria, or complications such as pulmonary hemorrhage, warrant aggressive therapy involving high dose corticosteroids in combination with immunosuppressive agents such as cyclophosphamide or mycophenolate mofetil, or plasmapheresis, as supported by current literature. A multidisciplinary approach, involving pediatric nephrology and rheumatology, is essential to optimize outcomes and prevent long-term complications (Hetland et al., 2017).

Overall, these two cases demonstrate that early HSP presentations dominated by gastrointestinal symptoms can obscure the diagnosis, particularly in the absence of palpable

purpura. A comprehensive understanding of the disease pathogenesis, clinical variability, and potential renal complications is critical to ensure timely diagnosis and appropriate management, thereby reducing long-term morbidity in pediatric patients with HSP.

## CONCLUSION

Cases of Henoch Schönlein purpura with predominant gastrointestinal manifestations are relatively uncommon and frequently lead to errors in early diagnosis. Clinical variations such as abdominal pain and vomiting preceding the appearance of purpura may mimic other causes of acute abdomen, thereby increasing the risk of misdiagnosis. Consequently, a high index of clinical suspicion, repeated evaluation, and consideration of HSP as a differential diagnosis in children presenting with colicky abdominal pain or severe vomiting of unclear etiology are essential to prevent unnecessary interventions and to ensure timely and appropriate management.

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