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Skin as the First Clue: A Case Report of Immunoglobin A (IgA) Vasculitis

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Abstract

We report the case of a seven-year-old female patient who attended an unscheduled primary care consultation due to palpable purpura of the lower limbs without signs of systemic involvement. Symptoms began two weeks after streptococcal acute tonsillitis treated with intramuscular penicillin. Given the potentially serious etiologies of purpura in paediatric patients, she was referred to the paediatric emergency department to exclude severe infectious and hematologic conditions and to monitor for possible complications. Initial laboratory evaluation revealed no hematologic, inflammatory or renal abnormalities and the patient was discharged with a presumed diagnosis of isolated purpura and scheduled for clinical surveillance. However, at the subsequent reassessment, she developed arthralgia, peripheral oedema, and abdominal pain, leading to a diagnosis of immunoglobulin A vasculitis and illustrating the dynamic and sequential evolution of the disease. Clinical course was favourable under supportive treatment and specialised follow-up, without evidence of renal involvement throughout the observation period. This case highlights the importance of early recognition of palpable purpura in primary care settings, even when initially isolated, as well as timely referral for exclusion of severe disease and appropriate monitoring for complications with potential prognostic impact, particularly renal involvement.

Categories: Family/General Practice, Pediatrics
Keywords: child, henoch schönlein purpura, iga vasculitis, primary health care, purpura

Introduction

Purpura in childhood is a potentially serious clinical sign that requires urgent evaluation, with early exclusion of etiologies such as meningococcal disease, severe thrombocytopenia, coagulopathies, trauma (including child abuse) and immunoglobulin A (IgA) vasculitis [1,2]. In this context, the initial diagnostic approach should be focused on identifying immediate life-threatening conditions [2]. IgA vasculitis, formerly known as Henoch-Schönlein purpura (HSP), is the most common small-vessel vasculitis in childhood [1,3,4], with an estimated incidence of 20 cases per 100,000 children per year [5]. Peak incidence occurs between four and six years of age, with approximately 90% of cases occurring before the age of 10 years and a slight male predominance [1,6]. It is an immune-mediated disease of multifactorial aetiology, characterised by IgA1 deposition within the walls of small vessels, leading to multisystem inflammation with cutaneous, articular, gastrointestinal and renal involvement. Although its aetiology remains incompletely understood, it is frequently preceded by upper respiratory tract infections [7-9], reported in approximately 72% of cases [10], with Group A *Streptococcus* being one of the most commonly implicated pathogens [11].

The diagnosis of IgA vasculitis is clinical and based on the criteria established by EULAR (European League Against Rheumatism) and PRES (Paediatric Rheumatology European Society), later validated by PRINTO (Paediatric Rheumatology International Trials Organisation) [12]. It requires the mandatory presence of purpura predominantly affecting the extensor surfaces of the lower limbs, associated with at least one of the following: acute abdominal pain; arthritis or acute-onset arthralgia; renal involvement; histopathological confirmation of leukocytoclastic vasculitis or proliferative glomerulonephritis with IgA deposition [12]. Laboratory investigations are not part of the diagnostic for the disease but are essential to exclude other causes of purpura and to identify a possible renal involvement [9]. The absence of laboratory abnormalities at initial evaluation does not exclude their subsequent development during the course of the disease, highlighting the importance of clinical surveillance during the first six months [7-9].

Although IgA vasculitis is self-limited in most cases, with spontaneous resolution occurring in approximately 94% of children under symptomatic treatment [1,3], the main prognostic concern is the renal involvement, reported in 20% to 54% of cases [4]. Nephritis may develop days to weeks after the initial presentation and, in a minority of patients, progress to chronic kidney disease (CKD) [4,13-15].

This case illustrates the dynamic evolution of IgA vasculitis from an initial presentation with isolated purpura to the subsequent development of systemic manifestations, highlighting the role of primary care in early recognition, timely referral for exclusion of serious pathology and continuity of care aimed at preventing complications with prognostic implications.

Case Presentation

A seven-year-old female patient presented to her Family Health Unit with her mother for an unscheduled consultation due to a non-pruritic, non-painful cutaneous rash affecting the lower limbs. She had no relevant past medical history and was not taking any regular medication. She had no known drug or other allergies. Her vaccinations were up to date according to the National Vaccination Program [16]. The lesions had been present for two weeks, with progressive worsening in both number and extent. She also reported nonspecific myalgia of the lower limbs. Fever, abdominal pain, peripheral oedema, mucocutaneous bleeding, local trauma, prostration, anorexia and other associated gastrointestinal or urinary symptoms were denied. Approximately two weeks before symptom onset, she had been diagnosed with streptococcal acute bacterial tonsillitis and treated with intramuscular penicillin. No recent travel or known epidemiological exposure was reported. On physical examination, she appeared well, with normal vital signs and bilateral palpable purpura of the lower limbs below the knees that did not blanch on pressure (Figure *1*). No peripheral oedema or other abnormalities were observed.

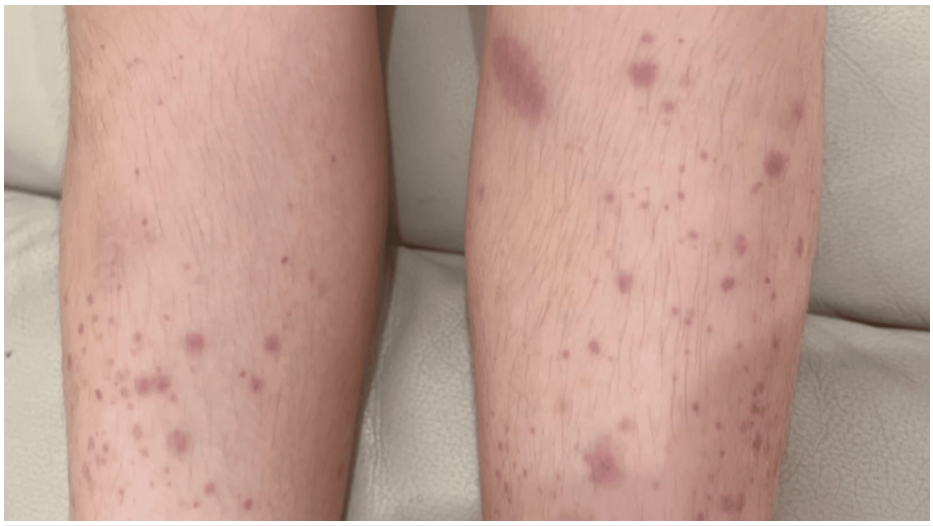


FIGURE 1: Palpable purpura on the legs of the child

To exclude possible platelet or coagulation disorders, the patient was referred to the paediatric emergency department (PED) of the local hospital. Laboratory investigations - including complete blood count, international normalised ratio (INR), activated partial thromboplastin time, prothrombin time, renal function assessment with serum creatinine and estimated glomerular filtration rate, liver function tests, inflammatory markers, urinalysis and urinary protein-to-creatinine ratio - revealed no abnormalities (Table *1*). A diagnosis of isolated purpura was therefore assumed, and hospital reassessment was scheduled for one week later. At that time, symptoms remained stable.

Test	Result at the initial evaluation on PED	Result at the diagnosis of IgA vasculitis	Normal/reference range
Complete blood count	-	-	-
Haemoglobin	13.0 g/dL	13.3 g/dL	11.5-15.5 g/dL
MCV	86.1 fL	86.9 fL	77.0-95.0 fL
MHC	28.9 pg	29.5 pg	25.0-29.0 pg
WBC	6.6 × 10^9/L	6.4 × 10^9/L	5.0-13.0 × 10^9/L
Platelets	211 × 10^9/L	288 × 10^9/L	180-400 × 10^9/L
Coagulation profile	-	-	-
PT	12.5 seg	12.5 seg	< 14 seg
INR	1.1	1.1	0.8-1.2
TTPa	30.5 seg	32.4 seg	23-38 seg
Fibrinogen	2.93 g/L	-	1.50-4.00 g/L
Biochemistry	-	-	-
Glucose	81 mg/dL	74 mg/dL	74-106 mg/dL
BUN	26 mg/dL	28 mg/dL	11-39 mg/dL
Creatinine	0.46 mg/dL	0.41 mg/dL	0.40-0.60 mg/dL
AST	27 U/L	-	< 51 U/L
ALT	11 U/L	-	< 39 U/L
Sodium	140 mmol/L	141 mmol/L	136-145 mmol/L
Potassium	4.06 mmol/L	3.81 mmol/L	3.50-5.10 mmol/L
Chloride	103 mmol/L	104 mmol/L	98-107 mmol/L
C-reactive protein	< 0.10 mg/dL	0.14 mg/dL	< 0.50 mg/dL
Urinalysis	-	-	-
Protein	Negative	Negative	-
Glucose	Negative	Negative	-
Ketones	Negative	Negative	-
Urobilinogen	Negative	Negative	-
Bilirubin	Negative	Negative	-
Blood	Negative	Negative	-
Nitrites	Negative	Negative	-
Spot urine protein	< 4.0 mg/dL	7.4 mg/dL	< 15.0 mg/dL
Spot urine protein-to-creatinine ratio	< 200 mg/g creatinine	111.8 mg/g creatinine	< 200 mg/g creatinine

TABLE 1: Laboratory findings

ALT: alanine aminotransferase; AST: aspartate aminotransferase; BUN: blood urea nitrogen; INR: international normalised ratio; MCV: mean corpuscular volume; MHC: mean corpuscular haemoglobin; PT: prothrombin time; TTPa: activated partial thromboplastin time; WBC: white blood cell

Despite having a new reassessment scheduled for the following week, she returned earlier to the PED due to

new-onset bilateral tibiotarsal oedema and arthralgia that had developed over the previous 24 hours, associated with generalised abdominal pain and progression of the purpuric lesions to the thighs and upper limbs. On physical examination, extension of palpable purpura to the gluteal region and upper limbs (hands) was observed, along with an increased number of lesions on the lower limbs compared with the previous evaluation. Additionally, mild oedema of the tibiotarsal joints and pain on active and passive mobilisation were noted, although without gait limitation. Repeat laboratory investigation remained within normal limits (Table *1*). At this stage, the patient fulfilled the EULAR/PRINTO/PRES criteria for the diagnosis of IgA vasculitis [12], formerly HSP. Symptomatic treatment with weight-adjusted analgesia - paracetamol and ibuprofen - was initiated, along with clinical surveillance and continued follow-up at the same hospital, initially on a weekly basis.

After approximately two weeks of symptomatic improvement - with resolution of abdominal pain, peripheral oedema, tibiotarsal arthralgia and purpura of the upper limbs - she returned to the PED due to intermittent frontal headache and abdominal pain lasting one week, associated with a new purpuric lesion on the lower limbs. No additional new symptoms were reported. She was normotensive and had no abnormalities on neurological examination, although a new purpuric lesion was observed on the lower limbs. No other significant findings were identified on examination. Laboratory investigations, including renal function assessment, urinalysis and urinary protein-to-creatinine ratio, remained within normal limits, and the previously established supportive measures were maintained.

Approximately one month after the diagnosis of IgA vasculitis, follow-up was performed biweekly and subsequently monthly until three months after symptom onset. During this period, progressive and sustained resolution of the clinical manifestations was observed, with persistently normal blood pressure and no laboratory abnormalities, namely regarding renal function and urinalysis. She was discharged from IgA vasculitis follow-up approximately 10 months after diagnosis while maintaining scheduled appointments for reasons unrelated to this condition. In primary care, she continued routine age-appropriate surveillance.

Discussion

The presented case illustrates a typical presentation of IgA vasculitis, characterised by a typical lower-limb rash followed by articular and gastrointestinal involvement after an acute respiratory infection, specifically streptococcal tonsillitis. This sequence is well described in paediatric patients [1,7,9,11], with approximately 72% of cases being preceded by infectious symptoms, particularly involving the upper respiratory tract [10]. Felix et al., in a recently published cohort study (2024) including 9790 children with IgA vasculitis, estimated that nearly 60% of disease incidence was potentially associated with *Streptococcus pneumoniae* (37.3%) and *Streptococcus pyogenes* (25.6%) [11], reinforcing the importance of a recent infectious history during diagnostic workup. In addition, viruses such as rhinovirus and enterovirus also contribute to approximately 17% of cases [11].

Palpable purpura involving the buttocks and lower limbs, although not exclusive to these locations, is the hallmark of the disease. However, signs and symptoms may appear in any sequence and develop over days to weeks [7,9]. Articular involvement and/or abdominal pain may precede skin lesions in 30 to 43% of cases, which may delay the diagnosis of IgA vasculitis at this stage [8]. In the present case, referral to the paediatric emergency department was primarily aimed at excluding serious conditions requiring urgent management and, given the suspicion of IgA vasculitis, assessing potential renal complications. A prospective study evaluating renal manifestations in 223 children diagnosed with HSP found that nephritis developed, on average, 14 days after symptom onset, occurring in most cases (87%) within the first month [14]. Renal involvement may manifest as isolated hematuria, with or without proteinuria, as well as nephritic or nephrotic syndrome [4,13,15]. The approach in PED was consistent with the recommended initial assessment of purpura, as the absence of laboratory abnormalities is common at initial presentation and is particularly useful for excluding alternative and potentially life-threatening etiologies [2,9].

In cases of suspected IgA vasculitis, all children should undergo a systematic evaluation including blood pressure measurement, assessment for peripheral oedema, serum albumin testing, first-morning urinalysis to document hematuria, quantification of proteinuria using the urine protein-to-creatinine ratio and assessment of renal function through estimated glomerular filtration rate [4]. In this context, the diagnostic approach was broadly consistent with the most recent recommendations. Severe abdominal pain warrants abdominal ultrasonography to exclude intussusception [4]. However, although abdominal pain was described in this case, the specific characteristics of this symptom could not be determined due to the absence of detailed hospital records. Jauhola et al., in a prospective study including 223 children with IgA vasculitis, concluded that age higher than eight years and/or abdominal pain at diagnosis, as well as recurrent disease, were associated with a significantly higher risk of renal complications [14]. There is no universally accepted definition of recurrent disease. However, it is generally considered to be the reappearance of typical clinical manifestations after partial improvement or complete remission, although no exact symptom-free interval has been established to define recurrence. In this case, the patient presented with abdominal pain at diagnosis, which could have been associated with an increased risk of progression to nephritis.

The patient experienced episodes of intermittent headache without objective neurological abnormalities, a commonly reported finding in IgA vasculitis. Although rare, neurological manifestations have been reported and may include altered mental status, seizures, focal neurological deficits, visual disturbances, or peripheral neuropathies, with cases of posterior reversible encephalopathy syndrome described in association with HSP [17]. Posterior reversible encephalopathy syndrome is a rare neurological complication typically characterised by headaches, seizures, and acute neurological symptoms, with most reported cases associated with a rapid increase in blood pressure. Clinical surveillance is recommended, particularly in the presence of neurological examination abnormalities or hypertension [17,18], both of which remained absent in this patient. Although the prognosis of IgA vasculitis mainly depends on renal involvement, rare extrarenal manifestations may also be associated with significant morbidity [18].

In the present case and in accordance with the most recent recommendations, in the absence of renal involvement, the recommended management consists solely of supportive care, namely analgesia and hydration [3,7,9]. Most cases resolve spontaneously within four to six weeks [1,19], as observed in this patient. Systematic reviews have shown that corticosteroid therapy does not prevent renal complications when used prophylactically and therefore should not be routinely prescribed in the absence of established renal involvement [4,9,13,20]. Corticosteroids are generally reserved for the acute phase in cases of significant renal involvement, severe abdominal pain or rare manifestations, although some controversy regarding their use remains [19]. According to the Kidney Disease: Improving Global Outcomes (KDIGO) and International Pediatric Nephrology Association (IPNA) recommendations, renal biopsy should be considered in children with nephrotic-range proteinuria (urine protein-to-creatinine ratio greater than 2 mg/mg or 200 mg/mmol) or impaired renal function (estimated glomerular filtration rate below 90 ml/min/1.73 m^2) [4,13].

These recommendations also support clinical and laboratory follow-up in either the primary care or hospital setting, including monthly urinalysis for at least six months, with the aim of detecting delayed renal involvement. IgA vasculitis-associated nephritis is known to occur predominantly within the first three months of disease in approximately 20 to 80% of cases, even when absent at initial presentation and represents a major prognostic factor [4,13]. Recurrence of IgA vasculitis may occur in two to 30% of paediatric cases [9]. According to a population-based cohort study from Taiwan with 16 years of follow-up, the second episode occurs on average nine months after the initial diagnosis [21]. Furthermore, patients with IgA vasculitis-associated nephritis, prolonged corticosteroid therapy for more than 10 days or a history of allergic rhinitis were found to have a higher risk of disease recurrence. The risk was particularly elevated among patients receiving prolonged corticosteroid therapy (adjusted hazard ratio 8.13; 95% CI 2.51 - 26.36) [21]. Although the patient described in this case did not present any of these risk factors, education regarding the possibility of recurrence, as well as consideration of reassessment around the reported average recurrence interval, might have further optimised clinical follow-up. Recent evidence recommends follow-up for at least five years in children with IgA vasculitis-associated nephropathy through renal function assessment, urinalysis and blood pressure monitoring, which may be performed in the primary care setting. The recommended frequency of surveillance is not standardised [4,13]. In contrast to adults, in whom IgA vasculitis with nephritis is rare and associated with a poorer prognosis with increasing age, the disease in paediatric patients tends to be benign and frequently self-limited, although severity also increases with age [4,6].

In the long term, even in the absence of initial renal involvement, IgA vasculitis may be associated with the development of CKD [15]. A population-based cohort study demonstrated an increased risk of CKD in children with IgA vasculitis compared with matched controls (adjusted hazard ratio 1.89, 95% CI 1.16 - 3.07), including cases without initial renal involvement [6]. The same study also reported an increased risk of developing hypertension during childhood (adjusted hazard ratio 1.52, 95% CI 1.22 - 1.89), and found no association with venous thromboembolism [6]. These findings further support the importance of structured long-term follow-up after diagnosis.

Conclusions

This case illustrates the typical and self-limited course of IgA vasculitis in the paediatric population. Initial presentation may be nonspecific, potentially delaying the diagnostic suspicion in primary care settings. Therefore, this case highlights the central role of the family physician in the early recognition of palpable purpura, even in the absence of other classic manifestations, as well as the importance of timely referral to secondary care for exclusion of severe pathology and appropriate risk stratification. Continuity of care, both at the hospital and primary care levels, with structured clinical and laboratory follow-up, is essential for the early detection of complications which, although uncommon, may have a significant impact on long-term prognosis.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Disclosures

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