

IgA vasculitis associated with renal and joint findings in children and correlation between patient's compliance in treatment: A case series

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ABSTRACT

Objectives. Evaluation and therapeutic management of pediatric patients having Henoch-Schönlein purpura with renal and joint involvement and the importance of their follow-up in preventing complications.

Material and Methods: The present study follows cases of two patients, diagnosed with Henoch-Schönlein purpura, with different degrees of compliance, in which the therapeutic approach was determined by the severity of the patient's conditions.

Outcomes. Two male children with Henoch-Schönlein purpura, aged 11 and 9, shared the same clinical features, including skin lesions and joint involvement. The first case may be distinguished from the second one, due to renal injury, a significantly worsened general condition, more widespread purpura, and lower treatment conformity. Laboratory analyses revealed elevated D-Dimers between inflammatory markers, therefore corticotherapy and anticoagulants were initiated. Under the prescribed treatment, both children's shapes improved, but the first one decided to be discharged on request before being fully recovered.

Conclusions. In addition to symptomatic treatment, leisure, corticotherapy administration, and monitoring levels in blood pressure and renal function, patient compliance is highly important related to the prevention of chronic kidney disease at a later stage.

Keywords: Henoch-Schönlein, purpura, joint, renal findings, compliance

Abbreviations

ASO - Antistreptolysine O

RF - Rheumatoid factor

CRP - C-reactive protein

ESR - Erythrocyte sedimentation rate

INR - International normalized ratio

IgA - Immunoglobulin A

IgM - Immunoglobulin M

IgG - Immunoglobulin G

APTT - Activated partial thromboplastin

clotting time

ANA - Antinuclear antibodies

AST - Aspartate transaminase

ALT - Alanine transaminase

INTRODUCTION

Non-thrombocytopenic IgA vasculitis or Henoch-Schönlein purpura affects small vessels by depositing IgA complexes in their walls, being the most common form of vasculitis in children. Typical symptoms include tangible purpura (95-100%), arthritis or arthralgia (70-90%), abdominal pain (35-85%), hematuria or proteinuria (40-50%), and in some cases, even testicular inflammation (14%) [1-3].

Incidence is up to 27 cases per 100,000 children/year, with a ratio of 1.5:1 for males, being more common during childhood, around the age of 4-6 years. The incidence rate depends on race, with Asians having the highest, whereas dark-skinned people represent the opposite extreme. Gastrointestinal and renal damage are the main causes of morbidity and mortality. In most cases, the illness is self-limiting, but recurrence is frequently described [4-6]. A

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seasonal trend of the disease has been observed (September-April) and also the fact that personal history of upper respiratory tract infections or exposure to certain antigens (from food, insect stings, drugs or vaccines) can ensue triggers for IgA vasculitis [7,8].

Depending on the severity of the condition, treatment consists of symptomatic, corticotherapy (oral or in pulse therapy) and immunosuppressants (cyclosporin A or cyclophosphamide). It is recommended observing blood pressure values and kidney function at least for 6-12 months. Generally, the prognostic is favorable [9-11].

CLINICAL CASES

Case 1

A male patient aged 11, presents the onset of the current symptomatology with left unilateral periorbital edema and local erythema; one day later a tangi-

ble purpura (hemorrhagic macules, papules, patches, areas of necrosis) in the lower limbs and lumbar region is associated, with periarticular sensitivity and swelling of the right knee joint (Figures 1 and 2).

The laboratory analyses indicated increased values of D-Dimers (5092 ng/ml), which is why treatment with Clexane was initiated, after which their values improved (Table 1). Elevated values of CRP (C-reactive protein: 52.30 mg/l), IgA, IgM (Immunoglobulin A and Immunoglobulin M) and ESR (Erythrocyte sedimentation rate) with slight growth values of ANA (Antinuclear antibodies: 9.1 IU/ml), RF (Rheumatoid factor: 6.37 IU/ml), amylase serum (28.5 U/L) and ASO (Antistreptolysine O) negative. Quick time and INR (International normalized ratio) showed normal values. The patient is found with anemia (hemoglobin 9.3 g/dL), thrombocytosis (526,000/uL) and hepatocytolysis syndrome (AST - Aspartate transaminase: 118 U/L and ALT - Alanine transaminase: 295 U/L).



FIGURE 1. Rash and purpuric papules and plaques on arms, abdomen and lower extremity associated with ankle edema in an 11- years-old boy with IgA vasculitis.



FIGURE 2. Purpuric papules, plaques and areas of necrosis on lower extremity associated with ankle edema

TABLE 1. D-dimer test of the two patients

D-Dimer test	Patient 1	Patient 2
1	5092 ng/ml	3031 ng/ml
2	297 ng/ml	2661 ng/ml

TABLE 2. Serology in the first patient

Serology	Value
Anti CMV IgG	331 U/ml
Anti EBV IgG	955 U/ml
Rubella IgG	16,7 UI/ml

TABLE 3. Immunology in the first patient

Immunology	Value
IgA	206 mg/dl
IgM	48 mg/dl
IgG	994 mg/dl

The urinalysis reveals proteinuria (100 mg/dL) and microscopic hematuria (300/uL) (Table 4).

TABLE 4. Urinalysis and urine sediment in first patient

Urinalysis	1	2	3
Leukocytes	-	25/ul	-
Erythrocytes	300/uL	50/ul	-
Proteins	100 mg/dl	-	15 mg/dl
Urine sediment			
Erythrocytes	11-20/field	0-3/field	0-3/field
	80% dysmorphic red blood cells 20% isomorphic red blood cells / field	dysmorphic red blood cells	

During hospitalization, pulse therapy with Solu-Medrol (1 g/day) and symptomatic treatment are initiated. Abdominal ultrasound is performed (no changes). Based on immunology and serological results other causes for nephrotic range proteinuria

were ruled out (Table 2 and 3). When the urine sample is repeated, the proteinuria reduces and the hematuria is absent. Urinary protein: creatinine ratio > 2 suggested nephrotic range proteinuria (Table 4). In evolution, from a clinical point of view, remission of purpuric elements from the abdomen and lower limbs amidst joint swelling can be observed.

The patient manifested low compliance regarding medical care (he is discharged on request), therefore following his subsequent evolution is difficult.

Case 2

The second child, also male, aged 9 years, with a recent personal history of left radio-carpal sprain (left upper limb immobilized), has his onset of current symptoms 3 days before admission, with purpuric eruptions on lower legs bilaterally, associated with arthralgia and swelling of the knee joints (accentuated on the right side), ankles and left elbow. Laboratory analyses emphasized high values of D-Dimers (3031 ng/ml), while INR, APTT (Activated partial thromboplastin clotting time), ESR, CRP and ASO had normal values. Abdominal ultrasound was also performed, which did not reveal any pathological changes.

The dynamic urinalysis was performed, which did not reveal any changes (in renal function).

During the hospitalization, the overall condition of the patient is good, with the improvement of the laboratory parameters (decrease in values of D-Dimers) and symptoms, with a favorable evolution under the established symptomatic treatment (Table 1). Considering a mild form of the purpura and also the absence of complications, corticotherapy was not intended.

In addition to symptomatic treatment and bed leisure, it is recommended the first child to continue treatment with Medrol, with a progressive decrease in doses, among monitoring blood pressure values. In both cases, it is mandatory to repeat the urine samples to keep track of kidney function.

The first case is distinguished by the presence of renal affection, a much more distressed state, with more extensive purpura, and low assent in treatment. In both cases articular injury is attended.

DISCUSSIONS

In this report, we have presented two cases of Henoch-Schonlein purpura that associates skin and joint affections, and one kidney involvement.

Regarding the skin implications, in the first patient's case, lesions were more extensive on the abdomen and upper limbs, otherwise respecting the specific localization areas. In the other case, the skin lesions were limited only to the lower limbs. Some

studies report that skin symptoms without renal involvement are self-limiting. In most cases, they do not require treatment, with the exception of bullous lesions which demonstrated having a favorable evolution under corticosteroid treatment [5].

The joint interest is present in both cases, but in the second patient it is more pronounced, with multiple joint localizations (bilateral knee marked more on the right, bilateral ankles and left elbow). Ghrahani et al. emphasizes that arthritis or arthralgia can sometimes be the first manifestation of this affection, compared to typical cases, when tangible purpura appears first [12]. The treatment is symptomatic consisting in the administration of non-steroidal anti-inflammatory drugs with a favorable subsequent evolution [5].

In our study, only the first patient presented kidney involvement, characterized by microscopic hematuria and nephrotic-range proteinuria, which is why corticosteroid treatment was initiated with the subsequent improvement of urine output, similar to the studies conducted by Chen O. et al. Chen J. et al. [3,13]. Chartapisak et al. demonstrated that early treatment with Prednisone has a beneficial effect on renal function, reducing the risk of developing renal disease at 6 months [14]. According to a study by Davin et al. [15], it is important to monitor renal function long term and also in patients with minimal renal harm. Jauhola et al. [6] reports that these individuals require follow-up, by performing dynamic urine summaries for at least 2 months.

In terms of laboratory analyses, in the first case we detected increased values of ESR, CRP, IgA and IgM, thrombocytes and liver enzymes and low values of hemoglobin. Similarly, in other studies, the same laboratory parameters were modified [12]. In both cases, the value of D-Dimers was elevated, accordingly with other studies [16].

Although the child initially presented higher values of D-Dimers, for which anticoagulant treatment was initiated, he had a faster improvement than the second one. Considering the more noticeable clinical manifestations and paraclinical portrait in the

first patient, pulse therapy with Methylprednisolone is administered. Niaudet et al. reports same data in this assess [11]. Park et al. demonstrated that Ciclosporin A is an effective treatment for IgA vasculitis and nephrotic-grade proteinuria [13]. At the same time, the literature recommends combined therapy with Methylprednisolone and Urokinase in pulse therapy, Mizoribine, Cyclophosphamide and Azathioprine, which would be effective in treating renal complications associated with Henoch-Schönlein purpura [9,10,11,13]. In our patients, the debut of symptoms consisted of palpable purpura.

CONCLUSIONS

Therefore it is mandatory to execute a correctly and complete clinical examination, so that it can contribute to the early diagnosis of the pathology. Joint injury usually does not cause long-term drawbacks. Evaluation of the risk of thrombosis must be carefully followed, by performing coagulogram, D-Dimers and dynamic blood counts, with prompting administration of specific treatment. At the other hand, supervising kidney function and blood pressure is important for intercepting chronic kidney disease at a later period. Furthermore, re-assessment during a 6-12 months term, depending on the degree of purpura and patient's compliance is tremendously important in establishing accurate treatment.

Ethics

This case series does not require committee approval and does not include any identifiers of the patient to protect confidentiality. Written informed consent was obtained from the patient's parents with their agreement to the publication of this case series.

Author contribution

A.-M.R.K., A.M. and C.M. drafted the article, acquisition and interpretation of data; C.M. carried out critical revision and final approval of the version to be published.

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