Henoch Schönlein Purpura in Pregnancy: a Case with Uncomplicated Maternal and Neonatal Outcome

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Abstract: *Introduction:* Henoch-Schönlein Purpura (HSP) is a systemic IgA-mediated small-vessel vasculitis. It is primarily a childhood disease, rarely described in pregnancy. Pregnant women with HSP are at risk for hypertensive and hemorrhagic complications. Due to the rarity of the condition during pregnancy, there is no consensus about the preferred course of treatment but concerns regarding optimal management are ongoing.

Case presentation: We report the case of an 18 year-old primigravida, with a 3-year history of HSP, who had an uneventful pregnancy and term delivery with epidural anesthesia.

Conclusion: Due to the systemic nature of HSP, multidisciplinary management of pregnant HSP patients should be warranted to prevent complications.

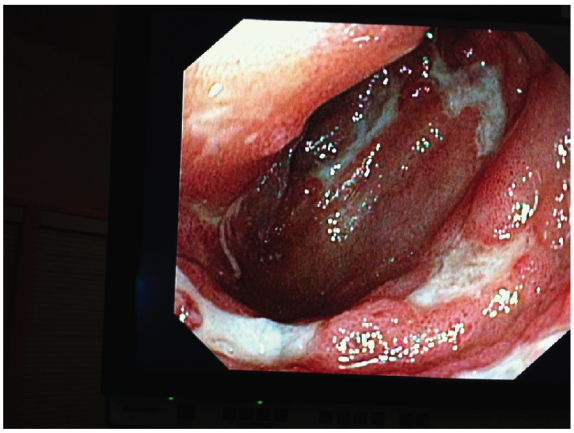
Keywords: Henoch-Schönlein purpura, Pregnancy, Medical complications, Epidural anesthesia, Nephritis, Hypertension.

INTRODUCTION

Henoch-Schönlein Purpura (HSP) is a systemic IgA-mediated small-vessel vasculitis. It is primarily a childhood disease [1-6], characterized by purpuric lesions on the lower limbs, episodic abdominal pain, arthritis, fever, malaise and glomerulonephritis with proteinuria and hematuria. Extra-renal manifestations include headaches, seizures and encephalopathy. Pregnant HSP patients are at risk of hypertensive complications, because of underlying nephropathy [1, 2], and potentially of hemorrhagic complications. Risks of anesthesia complications might also be increased.

CASE PRESENTATION

An 18 year-old primigravida consulted for the first time in our maternity unit at 37 weeks of gestation. She was known for HSP diagnosed three years previously after an emergency hospitalization for gastritis, oligoarthritis, exanthema and palpable purpura. At that time, hepatic and renal functions were normal but hematuria and proteinuria were present. Colonoscopy showed diffuse lesions and ileal ulcers (Figures **1-4**)



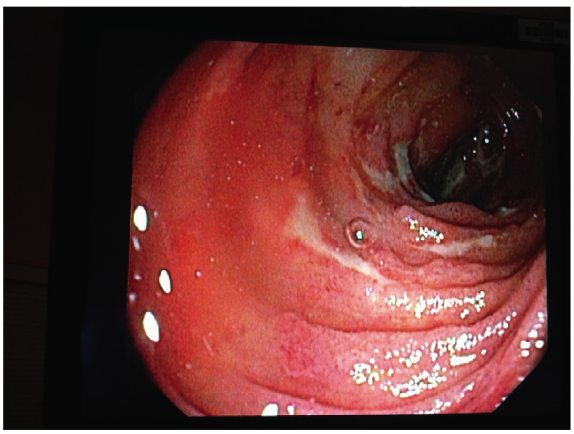


Figure 1 and **2:** ileal edema and longitudinal fibrinous ulcers.

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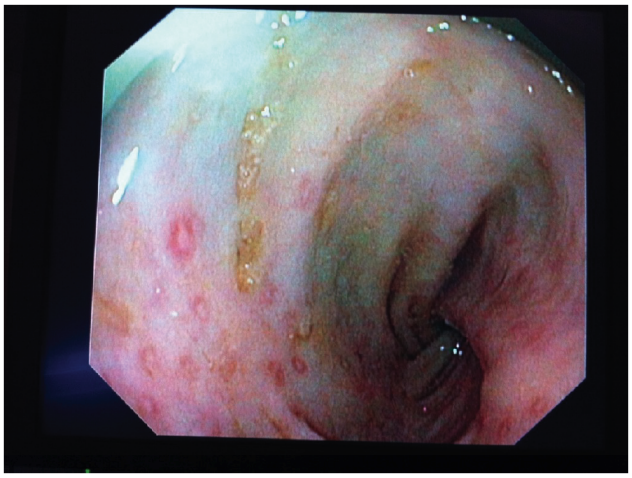

Figure 3: sigmoidal lesions.

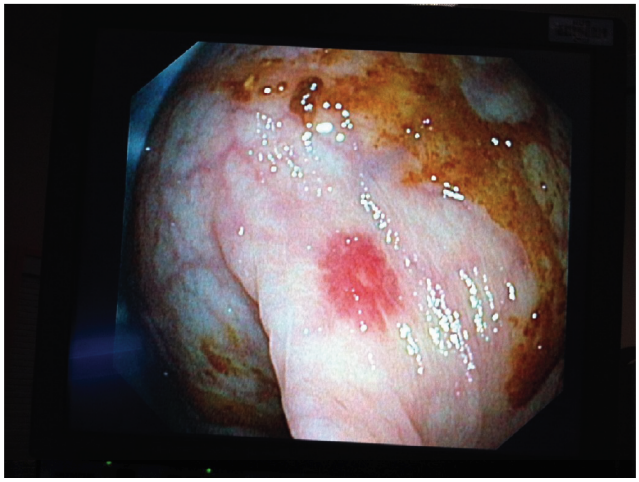

Figure 4: rectal lesions.

and the cutaneous biopsy showed IgA and C3infiltrates and signs of leukocytoclastic vasculitis. Renal biopsy showed severe IgA glomerulonephritis, with an extracapillary necrotizing component in 50% of glomeruli and endocapillary proliferation. The patient was treated with prednisone (40mg/day gradually reduced to 5mg every other day), azathioprine (50mg/day) and irbesartan (150mg/day) to prevent development of chronic kidney disease. Two years later, an HSP relapse occurred during an episode of viral gastro-enteritis. Acute renal insufficiency with pre-renal component was present (creatinine 313umol/L, proteinuria 1.98g/24h and hematuria with glomerular erythrocytes) and the renal biopsy showed mesangial proliferative glomerulonephritis with signs of active and chronic lesions (Figures **5-6**). She was treated with intravenous solumedrol 500mg/day for 3 days and irbesartan was suspended. At discharge, she was kept on prednisone (1 mg/Kg/day) and azathioprine (the latter being stopped 6 months later).

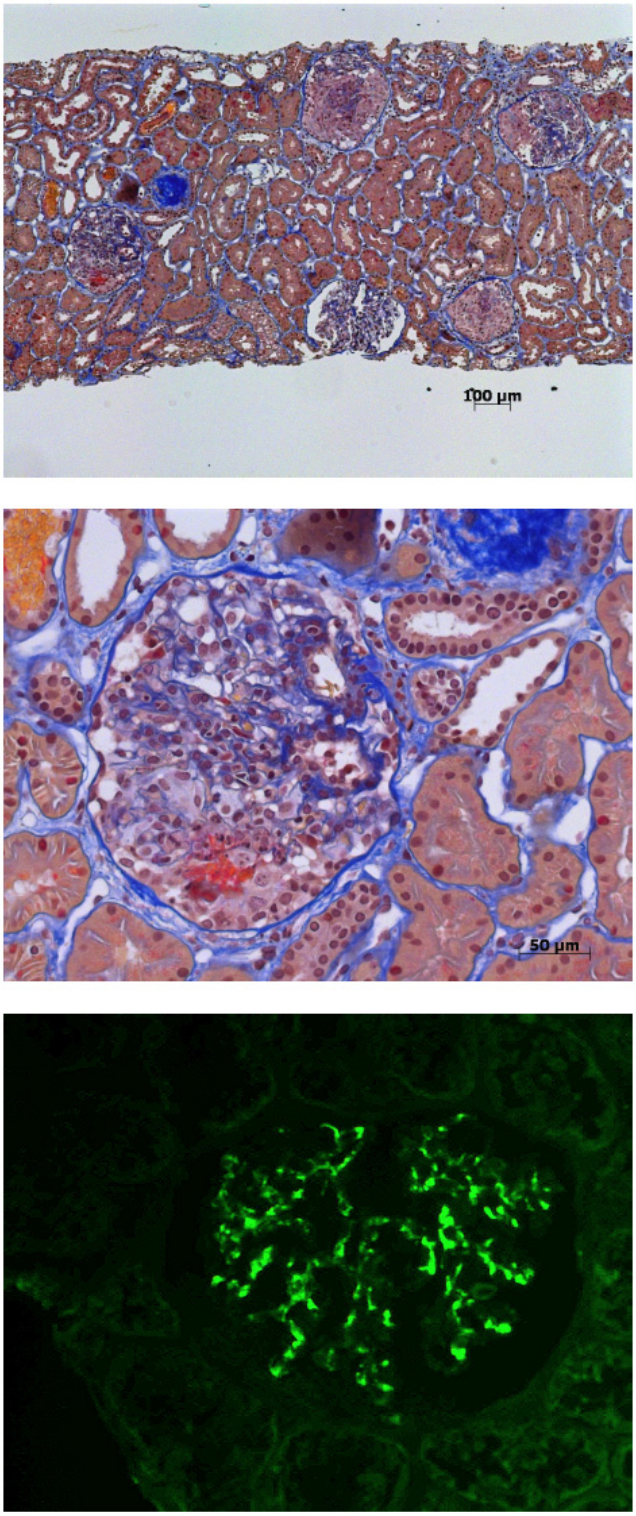

Figure 5: (**a**) and (**b**) Mesangioproliferative glomerulonephritis with numerous crescents (proliferative, necrotizing and crescentic glomerulonephritis). Trichrome staining.
(**b**) (**c**) Immunofluorescence microscopy on frozen tissue for IgA with numerous mesangial deposits.

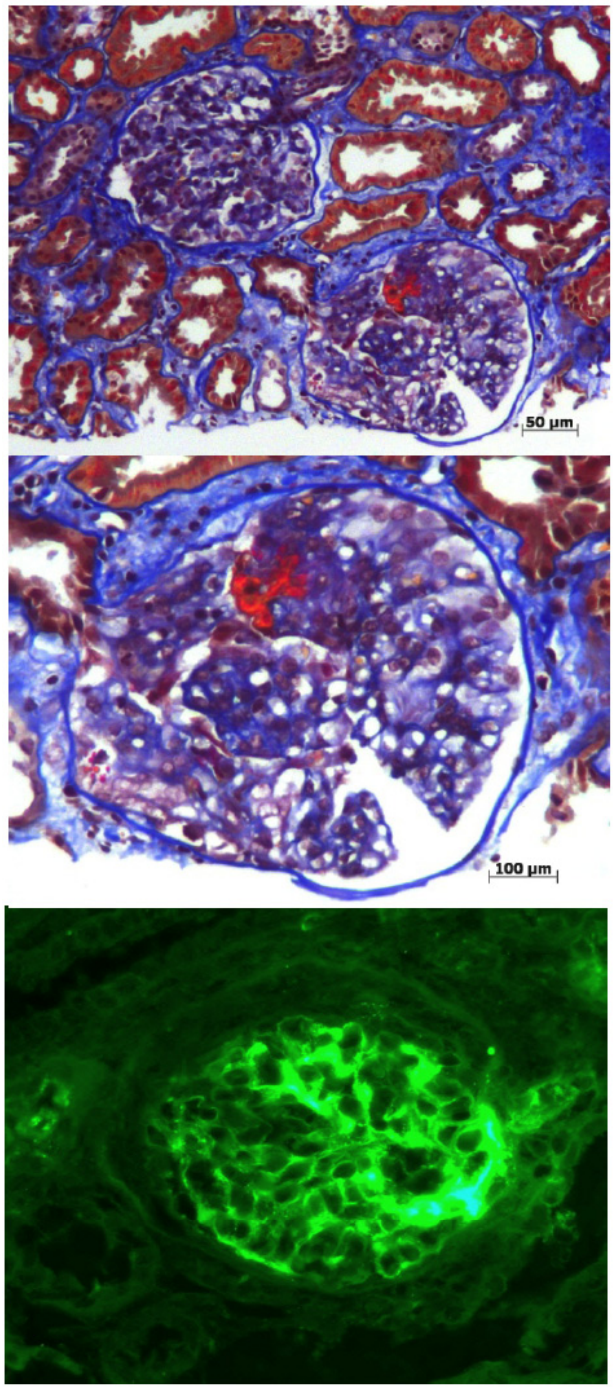

Figure 6: (**a**) and (**b**) Mesangioproliferative glomerulonephritis with fibrinoid necrosis. Trichrome staining.
(**b**)(**c**) Immunofluorescence microscopy on formalin-fixed tissue for IgA with numerous mesangial deposits.

Before conception, prednisone was tapered down to 5mg/day and maintained at that dose during the pregnancy by her treating physicians. Renal function, blood pressure and urinary tests remained normal throughout the pregnancy. Fetal ultrasounds were normal with fetal growth within the 50th percentile. Upon arrival at our maternity unit, a multidisciplinary meeting was convened to evaluate the risk of peripartum hemorrhage and anesthesia-related complications. The risks were considered to be low because HSP was in remission and there was no history of bleeding diathesis. Also, platelet count, prothrombin time, activated partial thromboplastin time as well as factor XIII level were in normal ranges. Fibrinogen and D-dimers were increased, respectively at 4.7g/l (normal range 1.5-3.5) and 3099ng/ml (normal range <500ng/ml).

The patient went into labor spontaneously at 38+5 weeks and delivered a healthy, 3500g boy under epidural anesthesia. Peripartum blood loss was normal (estimated 300ml) and blood pressure remained within normal limits during labor and the postpartum period.

DISCUSSION

Clinical manifestations of HSP are due to IgA deposition in vessel walls and consequent small-vessel vasculitis. According to the American College of Rheumatology [7] two or more of the following criteria are required for the diagnosis of HSP: age younger than 20 years, palpable purpura, abdominal pain or gastrointestinal bleeding, extravascular or perivascular granulocytes on biopsy. The Chapel Hill Consensus Group requires only vasculitis of the small vessels with IgA deposition [8].

HSP has a favorable prognosis, particularly in pediatric patients. The condition is usually self-limited, with recurrences generally resolving with treatment after 4-6 months [3, 9]. Renal involvement, manifested by hematuria and less frequently proteinuria, is more common and severe in adults. Prognostic factors for chronic renal insufficiency are renal involvement at disease onset, severe abdominal pain and persistent purpura [9]. Nephritis can lead to chronic renal insufficiency but progression to end-stage renal disease is rare (1-3%).

Pregnant woman with HSP are at higher risk of hypertensive complications, prompting to differential diagnosis with preeclampsia when proteinuria is present [2, 3]. As IgA immunoglobulins do not cross the placenta, fetal morbidity seems to be due to maternal renal and hypertensive complications rather than to HSP itself [2]. We found 20 cases of HSP in pregnancy reported in the literature. Nine were new cases diagnosed either during pregnancy (n=8) or post-partum (n=1), and the remainders were relapses. In 6

relapse cases, pregnancy occurred during disease exacerbation and 2 of these experienced spontaneous remission during pregnancy [6, 10-12, 17]. Complications were frequent with only 8/20 having uncomplicated term deliveries. There were 4 cases of preterm delivery (one due to severe preeclampsia), 7 cases of hypertensive complications (one also preterm and one with pregnancy termination at 24 weeks) and 2 fetal deaths (at 20 and 25 weeks) [12, 13].

In a cohort of 116 pregnancies in women with IgA nephritis, glomerulonephritis was associated with a greater incidence of obstetrical complications (hypertension, preeclampsia, intrauterine growth retardation and fetal loss) when proliferative lesions were present [14]. In a review of 22 pregnancies complicated by non-HSP IgA nephropathy, unfavorable pregnancy outcome was correlated with the degree of hypertension and renal insufficiency. In this study, over half of pregnancies were complicated with hypertension, proteinuria or both. When hypertension or proteinuria were present, the risk of preterm delivery was 30% [15]. We might hypothesize that pregnant women with HSP are also at higher risk for obstetrical complications if there is renal involvement or hypertension, as happens in women with IgA nephritis.

Regarding the effect of pregnancy on renal involvement in HSP patients, one study showed irreversible deterioration of renal function, possibly due to hyperfiltration during pregnancy [16]. Therefore, renal function should be monitored during pregnancy.

Standard coagulation tests, including platelet count, are usually normal in HSP patients but some reports suggest the presence of coagulation activation and hyperfibrinolysis. Plasma levels of factor XIII were decreased in some cases [17-19], whereas D-dimers were usually elevated without criteria for disseminated intravascular coagulation. Also, Von Willebrand factor was found abnormally high with presence of abnormal large multimers of von Willebrand factor, reflecting damage to endothelial cells [18]. It is not clear if the anomalies in coagulation factors (specially decrease of factor XIII levels) and fibrinolysis might play a role in the physiopathology of the bleeding complications observed in HSP. However, the main reason for this is the presence of vasculitis.

The literature regarding pain management and neuraxial anesthesia in HSP patients is scarce [1, 25]. Many experts suggest that if there is no evidence of active HSP, no history of bleeding diathesis and if the platelet count is normal, neuraxial blocks should not be contraindicated [1, 25]. Some teams are nevertheless concerned about the risk of epidural hematoma due to altered coagulation and fibrinolysis and choose to manage pain with intravenous opioids [1]. Pregnant patients with HSP should be referred early to the anesthesia team to assess the risk and benefit of neuraxial block and discuss alternative strategies in case of contraindication.

Regarding treatment, no consensus has yet been reached, even in the non-pregnant population. Oral corticosteroids could be beneficial, decreasing duration and severity of abdominal pain and joint symptoms and hastening resolution of mild HSP nephritis. Steroids do not, however, prevent renal complications, treat purpura, shorten the duration of disease or prevent recurrences [3, 9, 17, 21]. Some authors suggested treating only patients with risk factors for renal involvement at disease onset [18, 22]. Prednisone is often favored over methylprednisolone during pregnancy, as transplacental passage occurs in small amounts, reducing the risk of fetal adverse effects [2, 23]. Among the 20 cases of HSP during pregnancy, half were treated with steroids, leading to rapid resolution of purpura, abdominal symptoms or arthralgia [6]. Plasmapheresis was effectively used in one relapse case [24]. Hemodialysis was successfully used in one case where HSP was diagnosed at 23 weeks gestation and hypertension, anasarca and renal failure appeared at 32 weeks [6].

CONCLUSION

HSP during pregnancy is rare but the systemic nature of the disease has the potential to cause severe renal, hypertensive and hemorrhagic complications. Patients should be referred early to a high-risk pregnancy unit in to warrant multidisciplinary follow-up.

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