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Case Report

ANESTHETIC MANAGEMENT OF A PATIENT WITH HENOCH-SCHONLEIN PURPURA FOR CESAREAN SECTION

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ABSTRACT

Introduction: Henoch-Schonlein Purpura or Immunoglobulin-A vasculitis is a systemic vasculitis caused by immune complexes that attack small blood vessels. The classic symptoms of Henoch-Schonlein Purpura include erythema purpura, arthralgia, gastrointestinal complaints, and renal involvement. Some cases show that pregnancy itself could be the trigger for its recurrence and lead to early delivery. **Case report :** A 33-year-old patient, G2P1A0 and 35 weeks and 4 days pregnant complained of diarrhea 8 days before hospital admission (8-15 times per day). The patient was diagnosed with Henoch-Schonlein Purpura 3 years ago. Upon monitoring in the ward, the fetus was found to be in a compromised condition and an emergency cesarean section was needed. The patient was assessed as having an ASA II physical status and was anesthetized with regional anesthesia epidural in the sitting position, with a median approach, puncture at L3-L4 level, and with 12 ml of Bupivacaine 0.5% isobaric. Postoperative care was continued in the ward. As long as there are no contraindications, a neuraxial block could be performed on parturient patients with Henoch-Schonlein Purpura who would undergo a cesarean section. Neuraxial block, namely epidural block, has the added advantage of being a postoperative analgesic and helps to avoid the use of Non-Steroidal Anti Inflammatory Drugs (NSAIDs) in Henoch-Schonlein Purpura patients who often have renal complications. **Conclusion:** Caesarean Section with Henoch-Schonlein Purpura disease has been reported with Epidural Block Anesthesia without complications.

Keywords: Cesarean Section; Epidural; Henoch-Schonlein Purpura; Multigravida; Maternal Health

ABSTRAK

Pendahuluan: Henoch-Schonlein Purpura atau Vaskulitis Imunoglobulin-A merupakan vaskulitis sistemik, yang disebabkan kompleks imun yang menyerang pembuluh – pembuluh darah kecil. Gejala klasik Henoch-Schonlein Purpura antara lain (1) eritema purpura (2) artralgia (3) keluhan gastrointestinal (4) keterlibatan ginjal. Beberapa kasus menunjukkan kehamilan sendiri dapat menjadi pencetus kekambuhan dan menyebabkan persalinan yang lebih awal. **Laporan Kasus:** Dilaporkan pasien 33 tahun dengan G2P1A0 hamil 35 minggu 4 hari mengeluhkan diare sejak 8 hari sebelum masuk rumah sakit, frekuensi 8 – 15 kali per hari. Pasien terdiagnosis Henoch-Schonlein Purpura sejak 3 tahun yang lalu. Pada pemantauan di bangsal ditemukan janin dalam kondisi fetal compromised dan diputuskan untuk dilakukan seksio sesarea emergensi. Pasien dinilai sebagai status fisik ASA II, pembiusan dengan regional anestesi epidural, sitting position, median approach, puncture setinggi L3-L4, agen Bupivacaine 0.5% isobarik 12 ml. Paska operasi perawatan dilanjutkan di bangsal. Selama tidak ada kontraindikasi, blok neuraksial dapat dilakukan pada ibu hamil dengan Henoch-Schonlein Purpura yang akan menjalani seksio sesarea. Blok neuraksial, yaitu blok epidural, mempunyai keuntungan tambahan yaitu dapat menjadi analgesi paska operasi untuk menghindari penggunaan Obat Antiinflamasi Non Steroid (OAINS) pada pasien Henoch-Schonlein Purpura yang sering mempunyai komplikasi ginjal. **Kesimpulan:** Telah dilaporkan Seksio Sesarea pada penyakit Henoch-Schonlein Purpura dengan Anestesi Blok Epidural tanpa penyulit.

Kata kunci : Seksio Sesarea; Epidural; Henoch-Schonlein Purpura; Multigravida; Kesehatan Ibu

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INTRODUCTION

Henoch-Schonlein Purpura or Immunoglobulin-A vasculitis is a systemic vasculitis, caused by immune complexes that attack small blood vessels. Henoch-Schonlein Purpura is generally found in pediatric patients with an age range of 4-7 years old and with incidences of 3-26 cases per 100,000 children per year. In adults, this disease is less common with only around 0.1 – 1.8 cases per 100,000 individuals per year with a male to female ratio of 1.5 (1).

Clinical Diagnosis and Manifestation

The classic symptoms of Henoch-Schonlein Purpura include (1) erythema purpura (without thrombocytopenia); (2) joints pain (polyarthralgia of the knee, ankle, hand, and wrist joints); (3) gastrointestinal complaints (nausea, vomiting, abdominal pain, acute enteritis, hematemesis, melena, complications of intestinal ischemia, perforation, and intussusception); (4) renal involvement (in 30 - 50% of patients it is characterized by asymptomatic hematuria, proteinuria, acute renal failure, progressive glomerulonephritis, and chronic renal failure) (2,3,4).

Purpura symptoms often appear after upper respiratory tract infections (caused by Streptococcus) in certain seasons (spring, autumn, and winter) (2). The standard diagnosis for Henoch-Schonlein Purpura is based on the clinical findings and criteria issued by EULAR/PRINTO/PRES (European League Against Rheumatism/Paediatric Rheumatology International Trials Organization/Paediatric Rheumatology European Society) in 2010. In pediatric patients, these diagnostic criteria have a sensitivity of up to 100% and specificity of up to 87%, while in adult patients the sensitivity is up to 99.2% and specificity is up to 86% (5).

Table 1. Henoch-Schonlein Purpura Diagnosis Criteria by EULAR/PRINTO/PRES (5)

Criteria	Description
Criteria that must be met	Purpura, especially in the lower extremities
1 of 4 criteria at minimum	1. Diffuse abdominal pain with acute onset 2. Histopathology shows leukocytoclastic vasculitis or proliferative glomerulonephritis, with predominant IgA deposits. 3. Arthritis or arthralgia with acute onset 4. Renal involvement in the form of proteinuria or hematuria

Therapy

Therapy for Henoch-Schonlein Purpura in adults is still a matter of debate. Mild arthralgia and purpura are treated with analgesia and rest. Non-steroidal anti-inflammatory drugs (NSAIDs) are avoided due to the risk of gastrointestinal bleeding and renal effects (9). Corticosteroids are indicated in patients with IgA nephritis. Immunosuppressant agents (such as azathioprine or mycophenolate) may also be given as a corticosteroid adjuvant or as a second-line drug. Whereas angiotensin II receptor antagonists are administered to prevent secondary glomerular injury (10). Henoch-Schonlein Purpura Therapies are summarized in Table 2.

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Table 2. Henoch-Schonlein Purpura Therapy (10)

	First Line	Second Line	Third Line
With mild grade nephritis • Normal GFR • Mild-moderate Proteinuria	Oral Corticosteroids Adjuvant: • Immunosuppressant agents • Angiotensin II receptor antagonist	Immunosuppressant agents Adjuvant: • Angiotensin II receptor antagonist	
With moderate grade nephritis • <50% decrease in renal biopsy and decrease in GFR or • Persistent Proteinuria	Intravenous or Oral Corticosteroids Adjuvant: • Immunosuppressant agents • Angiotensin II receptor antagonist	Immunosuppressant agents Adjuvant: • Angiotensin II receptor antagonist	
With severe grade nephritis • > 50% decrease in renal biopsy and GFR decrease or • Persistent Proteinuria	Intravenous cyclophosphamide Adjuvant: • Intravenous Corticosteroids • Angiotensin II receptor antagonist	Immunosuppressant agents Adjuvant: • Oral Corticosteroids • Angiotensin II receptor antagonist	Renal Transplantation
Persistent Proteinuria	Intravenous or Oral Corticosteroids Adjuvant: Angiotensin II receptor antagonist		

Prognosis

Henoch-Schonlein Purpura which appears during childhood is relatively mild and may be self-limiting, while those that appear in adulthood are often found along with persistent kidney disorders, which cause a worse prognosis (8). Poor prognosis related to renal issues may include proteinuria >1 g/dL, macroscopic hematuria, hypertension, decreased Glomerular Filtration Rate (GFR) < 30 ml/min, and age-related decline (11).

CASE REPORT

The patient was a 33-year-old woman, gravid 2 parity 1 abortion 0, with a gestational age of 35 weeks and 4 days and was admitted to the hospital with complaints of diarrhea for the past 8 days before hospital admission and a frequency of 8-15 times per day with no mucus and blood. The patient had felt a tightness since the previous day, but it was still seldom and had a short duration. There was no blood, mucus, or fluid seen from the birth canal and there was active fetal movement. At the time, there was also no blurred vision or epigastric pain.

The patient has been diagnosed with Henoch-Schonlein Purpura (HSP) for the past 3 years. Confirmation of the diagnosis of Henoch-Schonlein Purpura was done through kidney biopsy with the following results: diffused segmental glomerulosclerosis with increased mesangial cells, which was an IgA nephropathy. Since being diagnosed with HSP (before pregnancy), the patient had received routine therapy with Sodium Mycophenolate (Myfortic ®) which was changed to Acetylsalicylic Acid (Minisapi ®), Azathioprine (Imuran®), and Methylprednisolone (dose of 4 mg/day; then increased to 16 mg/day due to flares). During pregnancy, Methylprednisolone was continued and other therapies were discontinued. Before the complaints, the patient routinely performed pregnancy care at the midwife, internal medicine, and gynecology polyclinics. The patient went once in the first and second trimesters, and twice in the third trimester.

The laboratory examination found the patient's hemoglobin levels of 10.0 g/dL, hematocrit of 31.4 g/dL, platelets of 370 x 10^3/µL, leukocytes of 9.81 x 10^3/µL,

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albumin of 2.62 g/dL, SGOT of 24 U/L, SGPT of 11 U/L, PT of 14.6/14.8 sec, APTT of 34.2/29.7 sec, INR of 1.13, GDS of 91 mg/dL, BUN of 27 mg/dL, creatinine of 1.9 mg/dL, sodium levels of 135 mmol/L, potassium of 4.51 mmol/L, chloride of 113 mmol/L, and LDH of 332 U/L. The urinalysis examination found proteinuria +2, bilirubin +1, and blood +2. In the electrocardiographic examination, a sinus rhythm was found with a pulse rate of 78 beats/minute. In the ultrasound examination, a single fetus with a head presentation was found, with a positive Fetal Heart Rate (FHR), placenta in the right lateral body, sufficient amniotic fluid, EFW of 2.370 grams, renal dextra of 7.10 x 4.2 cm, and renal left of 8.35 x 4.35 cm. In the fetus' NST (Nonstress Test) examination, its FHR was 135 times/minute, variability > 5, acceleration positive, no deceleration, positive movement, uterus contraction of 1 time/10 seconds/210 mVu.

During monitoring in the ward, it was found that the mother's blood pressure was 155/90 mmHg, pulse rate was 73 times/minute, respiration rate was 20 times/minute, temperature was 36.7 ^{o}C, and the tightness became constant. The fetus' NST (Nonstress Test) showed FHR 142 beats/minute, uterus contraction was 5 times / 10 minutes / 30 – 35 times/ 210 mVu, variability >5, and acceleration (-), deceleration (-), motion (-) was in the 1st category fetal condition. The vaginal examination found a slightly soft cervix, 30% effaced, no opening, head down in S3, mucus-blood (+), amniotic fluid (-), and a Bishop score of 2. Based on the patient's current condition, obstetricians diagnosed fetal compromise and decided to terminate the pregnancy by conducting an emergency cesarean section. From the examination data, the patient was assessed to have an ASA 2 physical status with an epidural regional anesthetic plan. The preparations conducted included obtaining informed consent from the patient, fasting, installing an intravenous line, and providing 1 unit of Packed Red Cell (PRC) transfusion.

The patient was admitted to the reception area with an intravenous line installed with a transfusion set, an 18G abbocath, and an infusion of 0.9% NaCl at a rate of 40 drops/minute which was administered until the patient entered the operating theater. The patient entered the operating theater and her blood pressure was monitored along with an ECG and pulse oximetry. The monitor stated that the patient's blood pressure was 116/75 mmHg, pulse rate was 123 beats/minute, respiration rate was 23 breaths/minute, and peripheral oxygen saturation was 97% with an oxygen supplementation of 2 liters/minute through the nasal cannula. Anesthesia was done with epidural anesthesia, sitting position, median approach, puncture level at L3-L4, LOR saline (+), Tuohy needle no. 18G, and Bupivacaine agent 0.5% isobaric 12 ml. The patient was in a supine position and the pinprick reached as high as VTh 6. The surgery lasted for 1.5 hours and bleeding of 500 ml occurred. During surgery, the patient's systolic blood pressure was 103 – 151 mmHg, diastolic blood pressure was 71 – 127 mmHg, pulse rate was 100 – 129 beats/minute, respiration rate was 21 – 27 times/minute, and peripheral oxygen saturation was 97 – 100% with an oxygen supplementation of 2 liters/minute through the nasal cannula. Oxytocin 10 IU drip was given in 100 ml of 0.9% NaCl immediately after the delivery of the fetus. Before the surgery was completed, paracetamol 1 gram iv and ondansetron 4 mg iv were administered. Postoperatively, the patient was observed for 1 hour in the recovery room and the treatment was continued in the ward with intermittent epidural analgesia.

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DISCUSSION

Henoch-Schonlein Purpura occurs due to abnormalities in Human Leukocyte Antigen Class II (HLA II). HLA class II gene polymorphisms modulate vascular homeostasis, i.e. nitric oxide production, activation of the renin-angiotensin system and endothelial cell/adhesive molecules, T cell-associated neoangiogenesis, and production of proinflammatory cytokines, or homocysteine metabolism. This modulation of vascular homeostasis is assumed to be implicated as a predisposition and is also associated with HSP severity. The pathophysiology of adult-onset HSP is slightly different from that of children. At the onset of HSP, the appearance of HSP is related to the increased levels of C-reactive protein and higher levels of IgA (12).

Publication on the effect of Henoch-Schonlein Purpura during pregnancy is still limited. There are no specific clinical manifestations of Henoch-Schonlein Purpura in pregnant women and thus cause difficulties when the patient does not have skin manifestations. However, it must be distinguished from other disorders that cause hypertension and proteinuria, such as preeclampsia and HELLP syndrome (Haemolysis, Elevated Liver Enzymes, and Low Platelet Counts). Hypertension and proteinuria are the signs of severe renal complications. Renal biopsy with immunofluorescence technique which shows mesangial IgA deposits is the best way to differentiate it (8). In this patient, a renal biopsy was performed when the patient was first diagnosed. Abdominal pain must also be distinguished from other conditions which have similar symptoms, for example, labor contractions, obstetric emergencies, or acute abdomen (13). In this patient, no skin manifestations were found.

Steroid administration, especially prednisone, had been shown to relieve arthralgia and gastrointestinal complaints within 4 weeks, as well as accelerate nephritis resolution, although it has not been shown to prevent nephritis. Prednisone was preferred because only a small amount crossed the placenta, thereby minimizing the effect on the fetus (8,13). The use of steroids, apart from therapy for Henoch-Schonlein Purpura, was also expected to accelerate fetal lung maturity considering that the gestational age was still 35 weeks and 4 days. In this patient, methylprednisolone was administered at a dose of 4 mg/day and then increased to 16 mg/day. Steroids had been taken since the first diagnosis.

The long-term use of steroids/ glucocorticoids (methylprednisolone) in pregnant women instigated the question: what are the effects on the mother and fetus? Normally, the placenta would produce corticosteroid 11-beta-dehydrogenase isozyme 2 (via HSD11B2 gene expression) which limits the glucocorticoid transfer from mother to fetus by oxidizing cortisol into inactive metabolites. Before birth, fetal cortisol production would increase and corticosteroid 11-beta-dehydrogenase isozyme 2 would decrease and trigger organ maturation. An example would be the production of surfactants for the fetus' lung maturation to support life at birth. Exogenous exposure would increase the level of glucocorticoids in the fetus. Existing studies show that high levels of cortisol are thought to cause sequelae, including preterm birth, attention deficit and hyperactivity disorder, and decreased brain cortex thickness in the Magnetic Resonance Imaging (MRI) of children aged 6-10 years. No evidence specifically mentions how many doses and duration of exposure could cause these sequelae. Preclinical data in experimental

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animals showed that a dose of 0.125 mg/kg intramuscularly is a safe limit which still shows the benefits of improving lung maturation and gas exchange compared to the negative effects that may occur (14).

In the mother, long-term use of steroids increases the risk of peripartum infection, gestational hypertension, and preeclampsia (15). In addition, during labor, hemodynamic instability may occur. This is because long-term steroid use suppresses the Hypothalamic-Pituitary-Adrenal (HPA) axis, which results in decreased levels of Adrenocorticotropic Hormone (ACTH) and Corticotrophin-Releasing Hormone (CRH) which leads to decreased cortisol production. This process is known as secondary adrenal insufficiency. Low cortisol levels may also predispose the patient to vasodilation and hypotension, in other words the patient becomes at risk for an adrenal crisis during periods of stress because the ability to enhance the cortisol response is attenuated. The clinical symptoms that would appear are severe and persistent hypotension which is less responsive to fluids and vasopressor therapy. The perioperative adrenal crisis could also be life-threatening and requires prompt recognition and treatment with stress doses of steroids and supportive care with fluids and vasopressors (16). In this case, these effects were not detected. During surgery, the patient's hemodynamics were stable and no adrenal crisis was found.

Furthermore, there has been no report yet for the recommendation of the use of immunosuppressant agents (Azathioprine, Cyclophosphamide) in pregnant women. Plasmapheresis has been reported to be used in cases of progressive renal complications, although its efficacy has not been proven (6).

Anesthesia for a parturient with Henoch-Schonlein Purpura was adjusted to the clinical conditions at that time. If there are no contraindications, regional anesthesia is still the first choice. Regional anesthesia requires normal coagulation function and platelet count, as was found in this patient. In addition, there were no skin abnormalities or lesions in the puncture area. Another consideration is that the mother was not in a state of hypovolemia due to diarrhea she experienced when she was first admitted to the hospital. The epidural block was also chosen with consideration of the fetus being in a fetal compromised condition so that there was still sufficient time to await the onset of the block. Furthermore, the insertion of an epidural catheter could also be used to avoid the use of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) as postoperative analgesia in patients with renal complications.

The consideration for the babies born to mothers with Henoch-Schonlein Purpura focused on the problems that would occur to the mothers. Several cases have shown that pregnancy alone could trigger the recurrence of Henoch-Schonlein Purpura and lead to early delivery. Complications in the fetus are caused by problems that occur in the mother rather than as a direct effect on the fetus. This is because IgA cannot cross the placenta so it could not cause vasculitis in the fetus (8). Nevertheless, placenta and amniotic fluid monitoring are still recommended from 24 weeks of age as the placenta is a blood vessel network that grows during pregnancy (6). For the babies born to mothers with Henoch-Schonlein Purpura, the care is adjusted according to the problems found. In this case, the following problems were found: the baby was born preterm with a low birth weight (2,200 g) and an Apgar score of 6/8. The treatment was continued by the pediatrics department and in the nursery, the baby was cared for together with the mother.

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CONCLUSION

As long as contradiction is not detected, pregnant women with Henoch-Schonlein Purpura without coagulopathy, thrombocytopenia, severe hypovolemia, or skin type abnormalities in the puncture area, who would need to undergo cesarean section could be anesthetized with a neuraxial block. In this case, the neuraxial block chosen was the epidural block as it has the additional advantage of being a postoperative analgesic and helps to avoid the use of NSAIDs in Henoch-Schonlein Purpura patients who often have renal complications.

Abbreviations

HSP: Henoch-Schonlein Purpura; EULAR/PRINTO/PRES: European League Against Rheumatism/Paediatric Rheumatology International Trials Organization/Paediatric Rheumatology European Society; NSAIDs: non-steroidal anti-inflammatory drugs

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Ethics Approval and Consent to Participate

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Consent for Publication

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Conflict of Interests

The author declares that they have no conflict of interests.

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