Spontaneously Resolved Recurrent Cervical Epidural Hematoma in a 37-Week Primigravida

Katsuyuki Iwatsuki1  Masao Deguchi2  Hitoshi Hirata1  Toshihisa Kanamono2

1 Department of Hand Surgery, Nagoya University Graduate School of Medicine, Showa-ku, Nagoya, Japan
2 Department of Orthopaedic Surgery, Nagano Red Cross Hospital, Nagano, Japan

Introduction

Spontaneous spinal epidural hematoma (SSEH) is a rare condition of unknown origin typically produced by the rupture of an epidural vein. It usually presents when a healthy adult engaged in a normal activity suddenly develops back or neck pain.1 There have been many reports of SSEH,2–4 but few during pregnancy.5–16 In general, recurrent SSEHs are uncommon.17–20 We report a case of SSEH recurrence during pregnancy and its spontaneous resolution.

Case Report

A 27-year-old primigravida at 37 weeks’ gestation suddenly felt a strong pain in her left shoulder and was admitted to the hospital.
A rare hematoma had disappeared (without recurrence of SSEH. Second cesarean section and gave birth to a male infant without steroids for the SSEH. On the day following admission, a cesarean section was performed under general anesthesia and a healthy male infant weighing 3,256 g was delivered. During recovery, her neurologic status did not deteriorate. She was discharged with no pain or neurologic deficit 7 days later.

At her 1-month follow-up, an MRI showed that the epidural hematoma had disappeared (Fig. 3). The orthopedic and obstetric doctors recommended a cesarean section for delivery and observation without steroids for the SSEH. On the day following admission, a cesarean section was performed under general anesthesia and a healthy male infant weighing 3,256 g was delivered. During recovery, her neurologic status did not deteriorate. She was discharged with no pain or neurologic deficit 7 days later.

At her 1-month follow-up, an MRI showed that the epidural hematoma had disappeared (Fig. 4). Multislice computed tomography showed no evidence of a vascular malformation or tumor. Three years later, she underwent a second cesarean section and gave birth to a male infant without recurrence of SSEH.

Discussion

Our case of recurrent SSEH with spontaneous resolution during pregnancy is unusual. The recommended treatment for this medical condition is commonly a surgical decompression to prevent neurologic deficit. Previous reports suggest that the prognostic factors were strongly correlated with the timing of the surgical decompression; therefore, an immediate decompression was recommended. The outcomes were better if the surgery was performed within 48 hours (in cases with incomplete spinal cord dysfunction) or 36 hours (in cases with complete spinal cord dysfunction).

Several authors have reported cases of spontaneous resolution of SSEH without an operative intervention. However, the conservative treatment has often resulted in a poor clinical outcome. We have no definitive tools to identify the patients who may recover spontaneously. If there is no motor function improvement, the treatment in most cases should be an immediate decompression.

The strategies must be determined for both the mother’s neurologic disorder and the fetus’ well-being. Babies born before 37 weeks of pregnancy are defined as extremely preterm (<28 weeks), very preterm (28 to <32 weeks), and moderate to late preterm (32 to <37 weeks). Any child born at 36 weeks or earlier is considered a preemie. The organ function of the fetus is still immature, specifically the pulmonary capacity. There have been a small number of reports of pregnant women with an SSEH. Three cases before 31 weeks’ gestation were carried through term, but almost all infants born after 32 weeks were delivered by cesarean section. From 32 to 36 weeks, it is very difficult to decide if the best course of action is to deliver the baby or to continue the pregnancy. The prone position for the spine operation as well as the general anesthesia required have associated risks for the fetus; however, if the pregnancy is sustained, the risk for respiratory distress syndrome and other respiratory morbidity can be reduced. In the studies reviewed, all of the women experienced neurologic deficits and were managed operatively; therefore, this is the first case of spontaneous resolution. We chose nonoperative management with close observation for this patient because she had no neurologic deficit, only pain.

SSEH during pregnancy is an acute neurologic emergency, and a universally accepted idea is that this condition may be a consequence of venous bleeding. During pregnancy, women are in a hypercoagulable state, making it less likely for hematomas to develop. However, sudden changes in the central venous pressure can be transmitted directly from the visceral cavities to the epidural veins. According to Steinmetz et al., as the uterus and fetus enlarge during the late stages of pregnancy, the abdominal and pelvic venous dynamics are altered. This fluctuation in the venous pressures may lead to the rupture of a pre-existing pathologic venous wall.

Hypertension is a major cause of hematoma. Hypertensive disorders associated with pregnancy are one of the most common obstetric problems. Upon arrival in the emergency room, our patient's blood pressure was elevated, although
after admission it was monitored strictly and returned to normal. We cannot definitively conclude if temporary high blood pressure caused the bleeding or if pain made her blood pressure higher.

Cases of relapse have rarely been reported, and at initial presentation, all cases were treated conservatively, achieving a spontaneous resolution. The recurrent intervals were a few minutes to 3 years. This patient’s recurrence interval

**Fig. 3** T1W1-weighted (left) and T2W1-weighted (right) magnetic resonance imaging showing the epidural hematoma at the C4–T1 level at 27 years old. Sagittal view and axial view (C6 level).

**Fig. 4** T1W1-weighted (left) and T2W1-weighted (right) magnetic resonance imaging showing that the epidural hematoma at the C4–T1 level disappeared at 1-month follow-up.
was about 10 years. The hospital that operated on her at age 18 for the initial SSEH performed the fenestration and aspirated the hematoma. Many patients undergo a cervical laminectomy or laminoplasty, and these operations might be needed to prevent recurrences.

Conclusion

We report on a rare case of recurrent SSEH during pregnancy with no neurologic deficits that was treated nonoperatively with close observation and resulted in spontaneous resolution. In such patients with no neurologic deficits, nonoperative management with close observation may be a reasonable alternative.

Disclosures

Katsuyuki lwatsuki, none
Masao Deguchi, none
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Toshihisa Kanamono, none

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