Pregnancy complicated with Ruptured AVM: A Case Report

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ABSTRACT

Arteriovenous malformations (AVMs) are the most dangerous of the congenital vascular malformations with the potential to cause intracranial haemorrhage and epilepsy in many cases. AVMs are considered to be type of congenital developmental vascular lesions and occur in 0.1% of the population. Ruptured AVM is a known cause of hemorrhagic stroke. The incidence in pregnancy is unknown because some of these AVMs can be asymptomatic. Besides AVMs, pre-eclampsia and eclampsia are associated with intracranial hemorrhage (ICH). Other independent factors for ICH include advanced maternal age and multiple pregnancy induced hypertension occurrences. Ruptured AVM in pregnancy results in severe complications with high maternal mortality and poor prognosis. Delay in symptom-onset to diagnosis time and pre-eclampsia showed correlation with poor maternal outcome. However, there is no increased risk of haemorrhage found in patients with AVM either during pregnancy or puerperium. In this paper, we report a patient who came with acute ruptured AVM. Mrs. S, a 35 year old in her second pregnancy, presented to the Emergency Department at 30 weeks of gestation, with reduced consciousness, a prior history of headache, right-sided hemiparesis and slurred speech. She was a chronic smoker for 10 years. An urgent CT scan of the brain showed acute bleed from left parieto-temporal intraparenchymal region with perilesional edema, mass effect and midline shift. The following MRA and MRV showed suspicious AVM with acute bleeding. Cerebral angiogram confirmed presence of ruptured left temporo-parietal AVM. An MDT was called and management discussed with all the stakeholders. She underwent cerebral embolization of the ruptured left temporo-parietal AVM. She recovered well and subsequently had uneventful delivery via Caesarean section at 33 weeks. She was discharged well ten days post-delivery. The neurosurgical team has planned for a definitive treatment for the AVM at eight weeks post-delivery. Brain AVMs can be detected on computed tomography (CT) or magnetic resonance imaging (MRI). MRI is more sensitive, particularly in setting of an acute intracerebral haemorrhage. Angiography on the other hand is the gold standard for the diagnosis, treatment planning, and follow-up after treatment of brain AVMs. Management of haemorrhagic stroke is similar to non-pregnant women and this often involves neurosurgical intervention, including surgical, endovascular and radio surgical treatment. High clinical index of suspicion, with multidisciplinary team approach which include neurosurgeon, obstetrician and anaesthetist and early intervention have an impact on survival in ruptured AVM in pregnancy.

Pregnancy Outcome and Cord Blood Cotinine Level: A Cross-sectional Comparative Study between Secondhand Smokers and Non-secondhand Smokers

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ABSTRACT

Objective: To compare the pregnancy outcome and cord blood cotinine levels between secondhand smokers and non-secondhand smokers. **Study Design:** This was a cross-sectional comparative study in a Malaysian tertiary obstetric hospital involving 200 non-smoking pregnant women at term, of whom 100 were secondhand smokers and 100 were non-secondhand smokers. Those with multiple pregnancies, with a body mass index (BMI) of more than 30 kg/m2 or who delivered by Caesarean section were excluded. The participants' basic demographic details, delivery details, neonatal outcome and placental weight were recorded. Umbilical cord blood samples were obtained, and cord blood cotinine levels were measured with a Cotinine ELISA kit. The primary outcomes were baby's birth weight, length, and head circumference, Apgar score at 5 min and placental weight. The secondary outcome was difference in cord blood cotinine levels between the two groups and the correlation of these differences with the neonatal outcome. **Results:** The secondhand smoker group had significantly lower baby weight (2.94±0.31 kg vs 3.05±0.40 kg), head circumference (30.87±2.35 cm vs 37.13±2.36 cm), length (46.58±1.95 cm vs 51.53±2.05 cm) and placental weight (520±73.5 g vs 596±61.3 g) and significantly higher cord blood cotinine levels (16.35±12.84 ng/mL vs 0.56±0.22 ng/mL). Cord blood cotinine levels had significant negative correlations with placental weight (r=-0.461), baby's weight (r=-0.297), baby's head circumference (r=-0.501) and baby's length (r=-0.374). **Conclusion:** Second hand smoke increases the incidence of adverse pregnancy outcomes (newborns' anthropometric measurements and placental weight) and causes higher cord blood cotinine levels.