

PREGNANCY COMPLICATED BY INTRACRANIAL ANEURYSMS

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OBJECTIVE

The incidence of unruptured intracerebral aneurysms (IA) in pregnancy is not well established in the literature, and the rate of ruptured aneurysms ranges from 3 to 11 per 100,000 pregnancies. Emergency caesarean section followed by clipping or coiling of aneurysms is indicated if the maternal condition and the gestational age allow such interventions. We report a case of pregnancy with history of sub arachnoid haemorrhage and possible existing cerebral aneurysms.

CASE REPORT

42 years old P3+0 booked at 9 weeks pregnancy. Significant history includes sub arachnoid haemorrhage (SAH) which occurred one year before index pregnancy when she presented with severe headache. There was no focal neurological deficit. She had successful endovascular coil embolization of a ruptured aneurysm in the posterior communicating artery. Two weeks later she had another embolization of basilar artery apex aneurysm and aneurysm of the right Para clinoid segment. There was possibility of more intracerebral aneurysms. She is also a known hypertensive for 10 years with poor control of blood pressure. Multidisciplinary team involving Obstetric medicine consultant, neurologist and obstetrician are crucial in her management with an aim for tight control of her BP, interval MRI monitoring of the intracerebral aneurysm size and caesarean delivery reserved for obstetric indications. Her Blood pressure (BP)was controlled with methyl dopa, labetalol and nifedipine. At 33 weeks she developed superimposed severe preeclampsia needing magnesium sulphate prophylaxis and foetus showed FGR stage 2 with worsening dopplers. Her renal and liver function tests were normal. Caesarean section was done under spinal anaesthesia at 33 weeks and baby weighed 1400gms. Postoperatively BP was controlled and follow up with neurologist was arranged.

CONCLUSION

Treatment for aneurysms and SAH is safe and effective during pregnancy when risks are properly mitigated. Due to the complexity of care, such patients should be treated using a collaborative, interdisciplinary approach by a multidisciplinary team.

DISCUSSION

- Women have been shown to have a higher risk of cerebral aneurysm formation, growth, and rupture than men. Hemodynamic and hormonal changes during pregnancy can increase rates of formation, growth, and rupture of IA. Studies has shown that if the cerebral aneurysm is small (≤ 5 mm), it is likely to remain unchanged despite the increase in circulating blood volume during pregnancy (1).
- Maternal stroke occurs in around 34 out of every 100,000 deliveries and is responsible for around 5%-12% of all maternal deaths.
- It is most commonly hemorrhagic, and women are at highest risk for developing pregnancy-related hemorrhage during the early postpartum period through 6 weeks following the delivery. The most common causes of hemorrhagic stroke in pregnant patients are arteriovenous malformations and cerebral aneurysms. Management is similar to that for acute hemorrhagic stroke in the nonpregnant population with standard use of computed tomography and judicious utilization of intracranial vessel imaging and contrast. The optimal delivery method is evaluated on a case-by-case basis, and cesarean delivery is not always required(2). Ruptured IAs during pregnancy should be managed based on neurosurgical considerations, and the obstetrical management of women with ruptured IAs should be decided according to the severity of SAH and the gestational age. Emergency cesarean section followed by clipping or coiling of aneurysms is indicated if the maternal condition and the gestational age allow such interventions. Our patient did not had any complications related to IA. Preventive endovascular treatment for asymptomatic lesions remains controversial.
 - More than one aneurysm can be found in 20% of cases. A differential diagnosis is necessary in cases of neurologic deficit including sudden acute headache and decreased consciousness.
 - Differential diagnosis: Eclampsia, pituitary apoplexy, intra-arterial occlusions, dural sinus thrombosis, intracranial space-occupying lesions, meningitis, encephalitis, and demyelinating diseases
 - Investigations: Lumbar puncture, CT, and MRI

REFERENCE

- Tanaka H, Katsuragi S, Tanaka K, et al. Impact of pregnancy on the size of small cerebral aneurysm. J MaternFetal Neonatal Med. 2017;30(22):2759-2762. doi:10.1080/14767058.2016.1262345
- Liew J, Feghali J, Huang J. Intracerebral and subarachnoid hemorrhage in pregnancy. Handb Clin Neurol. 2020;172:33-50. doi:10.1016/B978-0-444-64240-0.00002-7
- OnatT, Daltaban İS, Tanin ÖŞ, Kara M. Rupture of cerebral aneurysm during pregnancy: a case report. Turk J Obstet Gynecol. 2019;16(2):136-139. doi:10.4274/tjod.galenos.2019.23080