Cell. Mol. Biomed. Rep. (ISSN: 2823-2550)
https://doi.org/10.55705/cmbr.2021.356664.1057

2021, 1(3): 98-104

Review Article

An introduction on cerebrovascular aneurysms during pregnancy

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Article info
Received: 17 Feb 2021
Revised: 22 Jun 2021
Accepted: 22 Aug 2021

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Keywords:
Pregnancy, Cerebrovascular aneurysm, Berry aneurysm

ABSTRACT

A cerebral aneurysm is an abnormal bulge in the cerebral artery that spreads where the blood vessel wall has weakened. Cerebral aneurysms may allow blood to leak into the subcutaneous space around the brain and cause damage to brain cells. Brain aneurysms can also be ruptured and can lead to serious and possibly fatal strokes. A cerebral aneurysm is known as swelling of a blood vessel in the brain. In the definition of these conditions, it is said that it looks like a hanging berry from a stem. In cases where most aneurysms do not rupture or cause health problems, samples that experience such conditions cause bleeding in the brain - hemorrhagic stroke. Intracranial hemorrhages have attracted much attention because of the increasing role of indirect maternal mortality and the importance of rapid diagnosis and treatment in reducing mortality, and since in many cases, they occur due to brain vascular aneurysm. The topic is also essential. When faced with an aneurysm in a pregnant woman, the decision about pregnancy, termination and termination is based on the indications of midwifery and decision-making about the diagnosis and treatment of aneurysm based on neurosurgical indications.

1. Introduction

A cerebral aneurysm is an abnormal bulge in the cerebral artery that spreads where the blood vessel wall has weakened [1]. Cerebral aneurysms may allow blood to leak into the subarachnoid space around the brain and cause damage to brain cells [2]. A cerebral aneurysms can also rupture and become serious and possibly fatal strokes [3]. Cerebral aneurysm is known as swelling of a blood vessel in the brain. In the definition of these conditions it is said that it looks like a hanging berry from a stem [4]. In cases where most aneurysms do not rupture or cause health problems, samples that experience such conditions cause bleeding in the brain - hemorrhagic stroke [5].

2. In summary, brain aneurysms can be grouped into three categories:

- Aneurysm of the sac: Forming a sac on one side of the blood vessel wall.
- Spindle Aneurysm: The arterial wall is dilated and inflated to the spindle.
- Ruptured aneurysm: Bursting aneurysm and bleeding into the surrounding tissues.
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3. One of the causes of brain aneurysm formation is hypertension, which can weaken arteries. Also factors such as:

- Atherosclerosis (hardening of the veins)
- Congenital Artery Weakness (Especially in Arteries That Go to the Brain)
- Physical injury
- Aortic infection due to syphilis (rare)
- Aortic infection due to endocarditis (about aneurysms of the arteries that go to the brain)

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- Aortic infection after aortic surgery

Intracranial hemorrhage is the third leading cause of indirect maternal mortality and in 80% of cases is due to cerebrovascular aneurysm and up to 12% is attributed to indirect maternal mortality to cerebrovascular aneurysm. An aneurysm is a pathological dilation of the vessel wall that is prone to rupture and may be acquired or congenital [6]. Some tips should alert us to possible aneurysms including positive family history (in less than 2% of familial inheritance patterns), autosomal dominant polycystic kidney, history of head trauma, infectious diets, Marfan syndrome and collagen disease Etc. The point is that with the decline of other causes of indirect maternal mortality, cerebral vascular bleeding is becoming increasingly important as it now occupies the third position in the field and is reportedly the first in England. In this article we will review cerebrovascular aneurysms and their importance in pregnancy [6].

Pathophysiology: Hereditary and acquired abnormalities that lead to the weakening and disruption of an elastic layer separating the vessels in the media and odontia, where the wall is inherently thinner and the turbulence of the bloodstream more likely to cause herniation and outflow of the vessel wall [6-8]. Causes of this condition include inheritance, atherosclerosis and hypertension, infections, malignancies, cigarette and alcohol abuse and substance abuse, and vascular disorders elsewhere in the body (such as the Romeo Roberto document, Coarcta Sion Aorta, etc.) [9-11]. Connective tissue (fibromuscular dysplasia, Marfan syndrome, Euler zubardanelles type 4 syndrome, collagen type 3 autopsy, pseudo myxema elasticum, lupus erythematosus, etc.), autosomal dominant polycystic kidney disease, autosomal dominant myeloma, Anti-trypsin, neuro fibromatosis type 1, tuberous sclerosis and so on [12, 13]. It should be noted that even in traumatic aneurysms, even mild trauma without a history of fracture can be predisposing [14].

Epidemiology: The prevalence has been reported based on autopsy findings of 1-5%, 0.2-9.7% and 2%. 80% of spontaneous arachnoid spontaneous hemorrhages are caused by rupture of cerebral ano-rhythms smaller than 10 mm. At ages younger than 40, female and male demographic distribution is more common in women and older than 40, with a ratio of 6 to 1, and larger aneurysms and worse prognosis of bleeding are more common in women. The prevalence of ANA in children is less than that of adults and the peak age is 35 to 65 years [15].

In a study in Minnesota between 1950 and 1973, 4.4% of all maternal deaths were due to aneurysm rupture and arteriovenous malformations, the third most indirect and the eighth leading to all-cause mortality. Assign a mother. According to this study, Barda does not increase the risk of bleeding Ano Rheism, but faith and gynecology do so [16]. Less than 20% of cases of aneurysm-related complications occur in the first trimester and most in the second trimester 3, and according to some opinions, most occur in the third trimester. Cerebrovascular aneurysms in pregnancy are predominantly in the Willis ring and in 20% of cases [15] and [16, 17] it has been reported that maternal mortality would be 11% in case of urgent surgery and 63% in case of no surgery and therefore 50% Of aneurysms die before medical care in Sidney. Between 1988 and 1999, sixty people in the UK died from a partial cerebral aneurysm and malignant bleeding, which was the leading cause of indirect Reynolds mortality in England and Wales [18].

The effects of pregnancy on the aneurysm and its associated bleeding: Changes occur during pregnancy that should have an adverse effect on the incidence, size, and bleeding of cerebrovascular aneurysms, such as the release of Relaxing and its effect on the vessel wall [19] and a 20% decrease in cerebral blood flow in a the third trimester of normal pregnancy and a 20% increase in cerebral blood flow in preeclampsia [19]. An increase in cardiac output and blood flow volume [18] and an over-coagulation state in Pregnancy and Despite all this, pregnancy alone does not appear to increase the bleeding caused by aneurysms alone [18, 20]. in 1 out of 75,000 pregnancies. Ray, Parr Gay aneurysm and angioma Bleeding occurs because it is similar to non-pregnant people, but up to 35% of

deaths in pregnancy have been reported. Diagnosis: Any pregnant patient with headache, sudden or unusual headache or any neurological symptoms including syncope, seizure, meningitis, autonomic disorder, visual impairment, respiratory dysfunction, cardiovascular instability, nosebleed, Symptoms of cranial nerve involvement, aphasia, hemiplegia, etc. [21]. One should think about the possibility of cerebral hemorrhage and therefore the possibility of aneurysm [18]. If you have a person with a dark eye (cavernous sinus thrombosis) or skull vein enlargement (gall bladder aneurysm), be alert [18]. Like other medical events here, detailed history and history of trauma (even mild) to the head, sub-acute bacterial endocarditis, hypertension, autoimmune diseases such as autosomal dominant polycystic kidney, Lupus, Marfan, A history of familial or more subarachnoid hemorrhage in first-degree relatives, a history of liver or kidney cysts in the individual or individuals themselves, and ... should make us suspect the possibility of cerebrovascular ano-rhythm and its complications [18]. It should be noted that no diagnostic procedures and neurosurgery procedures are strictly prohibited in Barda Rey [18], and according to the conditions, spinal fluid extraction, geography, CT scan, MRI and open surgery should be prohibited [15]. In the case of CT, it should be performed without contrast and then with thigh dissection. In this method, aneurysms larger than 3 mm in diameter can be detected and less than MRI. It is sensitive to non-moving artifacts. 4 But my book Willie Ames, RI [19]. MRI is preferred over it. It identifies lesions larger than 4 millimeter [18]. The necessity and method of surgery are determined on the basis of nerve injury indications, but endovascular procedures appear to provide a better therapeutic response [16, 19].Contraindications are passed through the placenta but do not appear to have adverse effects on the fetus [16]. Also, angiography of the cerebral vasculature produces 6.3 to 10 milliseconds of radiation to the uterus [19].

Differential diagnosis: The most important differential diagnosis of aneurysm parenchyma, especially in hypertensive patients, and since these patients sometimes have the proinflammatory disease [19], eclampsia [16] is reported to be 30%. Eclampsia mortality is a result of brain injury and can have catastrophic consequences if a person who undergoes convulsive seizures and bleeding due to eclampsia has catastrophic results [16, 19]. Case Report: One 34-year-old woman, 11 weeks pregnant, presented with severe headache with severe exacerbation, and had subarachnoid hematopoietic scans on a cervical pre-pontine and peri-mesencephalic mass on the right isodense. In angiography, the spindle aneurysm had a right PCA that was not seen with cardiac angiography, but only in vertical angiography, which was filled with surgery and clipping surgery (thrombosis) and not in other angiography after surgery.

The posterior communication artery and the distal PCA were open, but again at 30 weeks of follow-up with retrobarbital retro-orbital headache, and there was bleeding in the adjacent CT of the aneurysm with a bleeding wall draining from the posterior communication communicating artery. Subsequent partial nerve palsy of three occurred. The patient underwent endovascular surgery under general anesthesia and had left superior quadrantanopia after awakening. He was treated with heparin for two days and then discharged. The vaginal delivery gave birth to a healthy term and 14 weeks postpartum, aneurysm angiography was blocked and the patient was neurologically stable [17, 22]

Another is a 36-year-old woman [23]who had a severe headache in the middle of the third trimester of pregnancy and had CT in the posterior fossa bleeding, having both 7 and 4.1 mm aneurysms, which were blocked by 7 mm endovascular aneurysm treatment, but aneurysm The 4.1 mm upper left cerebral artery did not work and was only monitored and the patient was repeatedly monitored and monitored. He received heparin for 12 hours and was discharged two days later, 37 days after giving birth to a healthy baby, and was under surveillance for up to 40 months after delivery [17]. Also, another 36-year-old woman who had a brain CT scan of her headache and had subarachnoid hemorrhage was disseminated posteriorly in a millimeter

aneurysm arteriography, which was first given to a general anesthesia with her twin infant cesarean section and immediately by the neurosurgery team. He was blocked and the patient received heparin for 12 hours and was monitored for up to 41 months after discharge [17, 18, 20].

3. Treatment of cerebral aneurysm disease

Nowadays, the treatment of cerebral aneurysms is divided into two types

3.1. Endovascular Procedure (Intron)

In this method, the brain enters the arteries without open surgery and without skull opening using a catheter and special materials to find the aneurysm and block the lesion by injecting specific substances or balloon [24].

3.2. Open surgery procedure

In this procedure, the surgeon will find the vascular lesion and close the aneurysm using clips. Both methods have their advantages and disadvantages, so choosing the one that best suits your physician. If the aneurysm is more than 3 mm in size, the aneurysm should be treated and closed. If the first angiography is negative in the patient, then CT angiography should be performed, and if it is negative, the angiography should be repeated two weeks later [20].

4. How to treat

- Imaging and minimally invasive procedures, such as embolization of cerebral aneurysms, are often performed by a trained specialist in closed brain surgery in an interventional radiology complex.
- CT scans or MRIs may be done before treatment. You will be placed on an examination bed.
- You may be connected to monitors to monitor your heart rate, blood pressure, and pulse during the procedure.
- A nurse or technician inserts an intravenous tube into a vein in the arm or arm to allow the intravenous sedative to enter the body. Moderate relaxation may be used. Instead, the patient may be under general anesthesia.
- The areas of the body where the catheter should be inserted (usually in the groin area) are shaved and sterilized and covered with a surgical drop.
- The area is anesthetized locally by a specialist. A very small skin incision is made at the site.
- Through visual guidance, the catheter enters the skin and moves to the site of the aneurysm or AVM. Once the catheter is in place, the detachable coils are placed in the place of the aneurysm. Liquid agents are used to filling the AVM.
- At the end of the operation, the catheter is removed and pressure is applied to stop the bleeding.
- The opening of the skin is covered with a bandage. No need for stitches.
- The tube is removed intravenously.
- If an aneurysm rupture has resulted in a stroke, hospitalization is required until recovery.
- If you have been treated for an unbroken aneurysm, you may stay in the hospital overnight and return home the day after surgery.
- This usually takes an hour or two, although it may take several hours.

5. Conclusion

The return of the disease depends on the success or failure of the coils in controlling the neck of the aneurysm. If the coil completely prevents blood flow to the aneurysm, then the patient will not have to worry about the disease coming back. The durability of embolization with coils varies depending on the size and shape of the aneurysm. Long-term studies indicate permanent success in more than 80% of embolization-treated aneurysms. Additional medical technologies such as angioplasty have improved the success of the treatment of cerebral aneurysms with embolization. Unfortunately, large, wide-necked aneurysms are still a challenge. Abnormal growth of the cerebral vessels (AVM) can be well treated with these embolization techniques, although the continuous examination is required.

By reducing other causes of indirect maternal mortality, promotion of intracerebral hemorrhage in this category to

third. Timely diagnosis and treatment are of particular importance. Concentration pregnancy is not a diagnostic and therapeutic approach to neurosurgery (in the case of non-dictation) and we do not end pregnancy due to aneurysms and decide on how to manage pregnancy based on midwifery indications and in any case, the tendency to get treatment as soon as possible Mostly with endovascular surgery.

Conflict of interest

None of the authors have any conflict of interest to declare

Consent for publications

All authors have read and approved the final manuscript for publication.

Availability of data and material

The authors have embedded all data in the manuscript.

Authors' contributions

K. S. helped in study design, doing, and manuscript writing, Z. M. and M. S. helped in manuscript draft writing, all authors helped in reviewing the manuscript.

Funding

No company, institution, or organization paid for the research

Ethics approval and consent to participate

The authors did not use human or animals in the research

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How to Cite This Article:

Saravani K, Mirsarzai Z, Sekhavati M (2021) An introduction on cerebrovascular aneurysms during pregnancy. Cellular, Molecular and Biomedical Reports 1 (3): 98-104. doi:10.55705/cmbr.2021.356664.1057

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