

Preeclampsia and Uterine Myoma in Pregnancy

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Abstract: *Hypertension in pregnancy affects 6-8% of pregnant woman, and remains a major cause of high maternal and perinatal morbidity and mortality worldwide. Fibroid uterine or myoma is the most common benign uterine tumour found in 40-60% of women of reproductive age. Fibroid uterine are generally asymptomatic and are found on routine pregnancy examination. Hypertension in pregnancy and fibroid uterine are often associated with poor outcomes for both mother and baby, although it is unknown whether fibroid uterine are associated with hypertension in pregnancy. Therefore, periodic observation and evaluation needed to maintain the pregnancy as a term as possible.*

Keywords: Preeclampsia, myoma uterine

1. Introduction

Hypertension in pregnancy affects 6-8% of pregnant woman, and remains a major cause of high maternal and perinatal morbidity and mortality worldwide. Compared to woman without hypertension in pregnancy, woman in hypertension in pregnancy have higher risk factor for developing complication during pregnancy such as stroke, pulmonary edema, liver failure, seizures in mother and oligohydroamnion, IUGR, and premature birth in infants.¹

Myoma or uterine fibroids are the most common benign tumors in uterine found in 40-60% of women of reproductive age.² In general, myoma are asymptomatic and are found in routine pregnancy test. The prevalence of uterine myoma in women ranges from 20-40% and 1-10% respectively. Some studies suggest that woman with hypertension in pregnancy have higher risk of developing myomas. However, until now it is still unsure whether myoma uterine are associated with the occurrence of hypertension in pregnancy.³

2. Case Report

Woman, 34 y.o, got transferred from PKM In Denpasar with Hypertension in Pregnancy and abdominal tumor. Blood pressure reached 190/100 and proteinuria +2 on arrival. When the patient arrived at the hospital patient had no complaints. Symptoms of abdominal pain (-), Vaginal discharge (-), Vaginal bleeding (-), Fetus's movement (+). Subjective complaints such as headache (-), blurred vision (-), heartburn (-). A history of hypertension was first detected when the patient was in 15-16 week of pregnancy and the blood pressure reaching 140/90. The patient denied the history of diabetes, heart disease, and other diseases. Patient first menstrual history was at the age of 13 y.o with regular cycle of 28 days and without any complains. Patient routinely checks for pregnancy to Doctor.

On physical examination, it could be found general condition was good. Vital sign, Blood Pressure 190/100 mmHg, pulse 88x/minute, respiration 20x/minute, temperature 36.2. On general status examination the results were within normal results. On obstetrical status, Inspection

of the abdomen showed that the abdomen got enlarged. Auscultation fetal heart rate 152x/minute. Abdominal palpation obtained solid mass with size approximately 13x16 cm, well-defined, flat surface, restricted mobility. The height of the uterine fundus is 27 cm, the child's site is elongated, the lowest part were head. Abdominal percussion revealed no sign of shifting dullness. Vaginal examinations result, bleeding (-), Inspections and VT were not performed. The result of blood test and urine were within normal limits.

Management of the patient was to give conservative treatment with medicamentosa. Patient was given MgSO₄ 40% 4 g slow IV bolus~ 20 tpm. Followed by 40% 6gr + RL 500 cc~ 28tpm. Nifedipine 10 mg every 8 hours PO + Dexamethason Inj. 12 mg in 2 days. While the patient was hospitalized, monitoring of complaints and vital sign were carried.

USG Examination on April 5th, 2022



Single live fetus, head presentation, left back, Fetal heart beat (+), Fetal movement (+), Placenta Corpus Posterior gr 2, SDP 4.8. Fetus estimated weight is 987 gr. There is an image of hyperechoic mass with size approximately 13x16 cm with a whorl like appearance, the impression of a uterine myoma. Conclusion : Gravid 27 weeks 4 days and uterine myoma.

Based on anamnesis, physical examination and laboratory examination patient can be diagnosed with G3P2002 gestational age 27 weeks 4 days, single/live, Super Imposed Preeclampsia with severe outcomes and Myoma Uterine .

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3. Discussion

The diagnosis of myoma uterine and superimposed preeclampsia with severe outcome in this patient were diagnosed based on anamnesis, physical examination, and additional examination. In the anamnesis, a history of hypertension was found at 15-16 weeks of gestation. On physical examination were found BP 190/100 mmHg. On laboratory examination proteinuria +2 were also found. This is accordance with criteria from American College of Obstetricians and Gynecologist in 2009 where chronic hypertension with superimposed preeclampsia in woman with hypertension found before pregnancy or before 20 weeks gestation.⁴ For the severe outcome criteria, it is in accordance with 2016 PNPk Diagnosis and Management of Preeclampsia where the patient has BP reached 190/100 mmHg.⁵

Clinical manifestation of myoma uterine vary from asymptomatic to recurrent, progressive, and greatly affect women's daily activities. Physical examination usually describes the location, size, number and mobilizations.⁶ In the patient history, asymptomatic complained were obtained. On physical examination, palpation were found a solid mass with the size approximately 13x16 cm, well-defined, flat surface, and restricted mobility. On USG examination, an image of hyperechoic mass with size approximately 13x16 cm with a whorl like appearance, the impression of a uterine myoma.

Hypertensive disorder are the leading cause of direct maternal death. Patient with preeclampsia and gestational hypertension have a higher risk of future cardiovascular disease, arterial disease, diabetes, metabolic syndrome and mortality. Severe preeclampsia has a poor quality life function related to health, including problem with social functioning, emotional well-being, and mental health.⁷

Myomas or uterine fibroids are the most common benign uterine tumors found in 40-60% of women in reproductive age.² In general, myomas are asymptomatic and usually found on routine pregnancy test. However, about 10-28% cases can developed into severe complication.⁸ The prevalence of myoma uterine in women of reproductive age and in pregnancy ranges from 20-40% and 1-10% respectively.⁸ Under rapid hormonal changes, a significant observations of myoma growth is during early trimester of pregnancy, because it can lead to an increased incidence of obstetric complications. However, until now it is still unsure whether myoma uterine are associated with the occurrence of hypertension in pregnancy. Considering the similarity in the pathogenesis of hypertension and hypertension in pregnancy, several studies have hypothesized that myoma uterine increase the risk of developing hypertension in pregnancy.³

Compression of uterine blood vessels by myoma uterine and subsequent poor placental perfusion has been supposed to be the leading cause of hypertension in pregnancy.⁹ In addition to mechanical compression of fibroids on uterine blood flows, several vasoactive substances such as thromboxane A₂ and endothelin might also contribute for the development of hypertension in pregnancy by inducing inflammation and

oxidative stress response. Beyond the association of myoma uterine with hypertension during pregnancy, myoma uterine have been known to be associated with hypertension and atherosclerosis as well in non pregnant women.^{2,9} These suggest that the mechanism of hypertension in pregnancy induction by myoma uterine requires further study.

In this case, conservative treatment was carried out by maintaining the pregnancy until the gestational age as a term as possible. If expectant measures are taken, it will be carried out according guidelines regarding childbirth as following: Chronic Hypertension (Suggested time of delivery): 38 weeks, Gestational hypertension: 37 weeks, Preeclampsia without severe outcomes: 37 weeks, Preeclampsia with severe outcomes (Failed to control maternal blood pressure, increased of maternal organ dysfunction, fetal indication): Does not see gestational age.¹

Management of myoma uterine can be divided into observation, medical treatment and surgery. Despite its size, asymptomatic myoma can be observed and evaluated on regular basis. Myomas generally enlarged slowly, the average growth is 0.5 cm per year. But sometimes myoma can grow faster. Therefore, periodic surveillance is the best option for asymptomatic individuals. The operation is carried out depending on the size and position of the myomas.¹⁰

4. Conclusion

Hypertension in pregnancy remains a major cause of high maternal and perinatal morbidity and mortality worldwide. Compared to woman without hypertension in pregnancy, woman in hypertension in pregnancy have higher risk factor for developing complication during pregnancy. Although, until now it is still unsure whether myoma uterine are associated with the occurrence of hypertension in pregnancy. Several studies have hypothesized that myoma uterine increase the risk of developing hypertension in pregnancy. Considering the adverse effect of hypertension in pregnancy, pregnant women with myoma uterine should have their blood pressure monitored closely and precautions should be taken to prevent any complication in pregnancy.^{3,4}

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