Holistic Approach of Patient with Cerebral Tuberculoma in Pregnancy: a Case report

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Abstracts

***Background**: Tuberculoma are tumor-like space occupying lesions dispersed among various sites. Unlike pulmonary tuberculosis (TB), diagnosis and treatment of tuberculoma have received little consideration, especially those affected during pregnancy.*
***Case**: A 22-years-old women with two gestations, one parity, one abortion, and one alive child was admitted due to several syncope episodes. It was found that she had cerebral tuberculoma and received appropriate medication. Following her discharge, she was pregnant and had another symptoms. Holistic and multidiscipline approach was provided to the patient.*
***Discussion**: Cerebral tuberculoma is one of the most serious clinical forms of TB. There are some interactions between pregnancy and cerebral tuberculoma. Diagnosis and management on biopsychosocial aspect of cerebral tuberculoma in pregnancy was needed for patients, couples, and families affected.*
***Conclusion**: Tuberculoma in pregnancy is one of the challenging problem in pregnancy. Limited resource of references combined with both the mother and baby condition. It is important that healthcare providers assess the patient's need and provide comprehensive and holistic management.*

***Keyword:** Tuberculosis, Tuberculoma in pregnancy, Tuberculosis in pregnancy, Biopsychosocial*

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Pedekatan Holistik Pasien Tuberkuloma Serebri Dalam Kehamilan: Laporan Kasus

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Abstrak

***Pendahuluan**: Tuberkuloma adalah lesi yang menempati ruang mirip tumor yang tersebar di berbagai tempat. Tidak seperti tuberkulosis (TB) paru, diagnosis dan pengobatan tuberkuloma kurang mendapat perhatian, terutama yang terkena selama kehamilan.*
***Kasus**: Seorang wanita 22 tahun dengan gravida dua, para satu, aborsi satu, dan satu anak hidup dirawat karena beberapa episode sinkop. Ditemukan bahwa dia menderita tuberkuloma serebri dan menerima pengobatan yang sesuai. Setelah keluar, dia hamil dan mengalami gejala lain. Pendekatan holistik dan multidisiplin diberikan kepada pasien.*
***Diskusi**: Tuberkuloma serebri adalah salah satu bentuk klinis TB yang paling serius. Ada beberapa interaksi antara kehamilan dan tuberkuloma serebral. Diagnosis dan penatalaksanaan aspek biopsikososial tuberkuloma serebri pada kehamilan diperlukan untuk pasien, pasangan dan keluarga yang terkena.*
***Kesimpulan**: Tuberkuloma dalam kehamilan merupakan salah satu masalah yang menantang dalam kehamilan. Sumber referensi yang terbatas dikombinasikan dengan kondisi ibu dan bayi. Penyedia layanan kesehatan harus menilai kebutuhan pasien dan memberikan manajemen secara komprehensif dan holistik.*

***Kata Kunci**: Tuberkulosis, Tuberkuloma dalam kehamilan, Tuberkulosis dalam kehamilan, Biopsikososial.*

Introduction

Mycobacterium tuberculosis (MTB) infects about 2 billion people worldwide.[1] Its incidence is particularly high in South East Asia and African countries, affecting numerous amount of people.[2,3] Among all tuberculosis infections, about 10-15% of which compromises of those involving central nervous system (CNS) with tuberculoma being the most common variant.[1] Tuberculoma are tumor-like space occupying lesions dispersed among various sites. Although the bacteria are transmitted through inhalation, hematogenous spread has enabled cerebral spread of bacteria.

Unlike pulmonary tuberculosis, diagnosis and treatment of tuberculoma have received little consideration, especially those affected during pregnancy.[1] Medical consideration about interaction between pregnancy and tuberculosis has changed numerous times. In this article, we provide a case of tuberculoma in pregnancy from a perspective of biopsychosocial approach.

Case Report

Mrs. TF, a 22-years-old woman with two gestations, one parity, one abortion, and one alive child was admitted to District Hospital due to several syncope episodes since 2 days before admission. Previously, she complained of severe headache which was worsening before each of the episodes. She previously had respiratory TB 15 years prior to the admission which received full course therapy. She was then examined thoroughly. Based on cerebral MRI with contrast dan laboratory results, it was found that she had cerebral tuberculoma with abscess and meningitis signs on her posterior fossa / tentorium region. She was HIV-negative based on the examination undergone. She was admitted for the whole 3 months during her first examination.

The patient was then referred to dr Cipto Mangunkusumo National General Hospital and received anti-tuberculosis drugs, steroids, antibiotic, and analgesics. She was also admitted for 17 days before finally discharged considering no neurological deficit left on the patient.

The patient was a newly-wed during her hospital admission. She had married twice, The first one was when her age was 18th, and the second one was on the year of admission. She had one alive child from her previous marriage, while her second pregnancy ended in abortion on 5th weeks of gestation. However, she did not use any contraception in the hope of having another child from this marriage. Unexpectedly, she was pregnant following her discharge from the hospital.

During her pregnancy, she routinely had antenatal examination on an obstetrics clinic in Jakarta. However, on her 26th weeks of gestation, she complain of another worsening headache. She was then referred to other District Hospital due to her history of tuberculoma on 8th month of medication. Afterward, she was referred to obstetric clinic in dr Cipto Mangunkusumo General Hospital for more comprehensive approach to her condition. It was found that she had cerebral tuberculoma, microcytic hypochromic anemia, and large-for-gestational-age fetus. Her management consists of anti-tuberculosis drugs regiment, analgesics, vitamins, and laboratory and radiology examination every two weeks.

The patient routinely came to both neurology and obstetrics clinic in dr Cipto Mangunkusumo General Hospital and had taken her medications. She had taken her drugs and was planned to have elective caesarean sectiondg. On her 32th weeks of gestation, her examination showed that there was no anatomical anomaly nor any suspicious fetal activity, but having large-for-gestational-age estimated fetal weight (> 90th percentile).

During her 37th weeks of gestation, the patients was admitted to emergency room due to bloody discharge from vagina since 2 hours before admission. She said that she also had watery discharge 1 day prior to the admission. Her physical examination was otherwise healthy with irregular contraction and 1 cm opening of the cervix. On US examination, it was found that the estimated fetal weight was 3,500 grams with oligohydramnios (AFI 4). She was planned to have cesarean section with prophylactic antibiotics prior to the surgery. She still received her 9th month of anti-tuberculosis medication during her admission.

Caesarean section was done on the next day after her admission at emergency room. Born baby boy, 4,060 grams, with APGAR score of 8/9. An intrauterine device was placed following the delivery. After the surgery, both the mother and baby were on good condition, rooming in. She was discharged three days later without any complaint.

Follow up examination was done one month following the discharge. Both the patient and baby were healthy, with no complaint of headache. She also had been taking her medication routinely.

The patient was a housewife with educational level of high school. Her previous menarche status was otherwise normal. Her husband was an employee in one of the private company in Jakarta, earning about minimum wage. She previously experienced using injected contraception during her first marriage.

The patients lived with her husband in a crowded suburb area approximately 20 kilometers from Cipto Mangunkusumo General Hospital. She traveled using public transportation, spending about 2-3 hours for each round about trip. She also needed to depart early in the morning in order to have shorter queue. She used national insurance ("Jaminan Kesehatan Nasional" or JKN) in order to finance her treatment.

During psychological assessment, she said that it was indeed hard to experience her illness during pregnancy. The patient and family were anxious of both the baby condition and the illness, hoping that the mother and the baby would be healthy eventually.

Discussion

Biological Aspect

Tuberculosis in pregnancy affects about 1-2% of all pregnancy.[2] Tuberculoma is one of the most serious clinical forms of tuberculosis (TB), with high mortality rate and disabling sequelae.[2] Tuberculoma are tumor-like space occupying lesions arising from tuberculosis infection, usually of secondary as reactivation of latent tuberculous focus.[1,2] In our case, the patient had pulmonary tuberculosis long before her symptoms occurred, exactly 15-years apart. Tuberculoma represents 34% of intracranial mass in both USA and Europe, also estimated as a third of all intracranial masses in developing countries.[1] Its symptoms are similar to non-pregnant women and may differ according its location, such as seizures (85%), signs of increasing intracranial

pressure (headache, vomiting), and neurological deficits.[1-3] In our case, the patient experienced severe headache prior to her syncope.

Diagnosis of tuberculoma in pregnancy is difficult considering seizures during pregnancy are commonly associated with eclampsia condition. A significant difference lies on the usual presentation of tuberculoma patient who are mostly normotensive and without proteinuria.[1,2] Radiological examination using MRI and laboratory examination using changes in cerebro spinal fluid (CSF) dan IGRA remains as the mainstay diagnostic instrument for diagnosing tuberculoma in pregnancy, although histopathological biopsy is the golden standard of the diagnosis.[1,2] In our case, the patient was diagnosed prior to her pregnancy and was currently taking her medication, facilitating the diagnosis of tuberculoma.

The benefits of treating active tuberculosis in pregnancy currently outweigh potential drug toxicity.[2] Treatment for tuberculoma in pregnancy may use standard antituberculotic regiment including isoniazid, rifampicin, pyrazinamide, and ethambutol for 2-3 months followed by isoniazid and rifampicin for 12-15 more months coupled with steroids and symptomatic drugs.[1,5,6] During pregnancy, adverse effects on anti-tuberculosis drugs are multiplied, such as rifampicin causing nausea, vomiting, and higher rate of hepatitis. In our case, the patient was already taking her antituberculotic drugs when she had another symptoms in her pregnancy. Delivery method is also a matter of consideration for the patient, as spontaneous vaginal delivery would increase intracranial pressure of patient, increasing the risk of having headache, seizure, and syncopes.[1]

During early 1800 to 1940, therapeutic abortion was frequently recommended for pregnant women with tuberculosis, as detrimental effects was perceived from concurrent situation. However, previous research has found that there was no harmful effect of TB to the pregnancy as poorer outcome of pregnancy (premature birth, low birthweight) may be due to its risk factors such as poverty and malnutrition.[2,3] Nevertheless, studies indicated that immunosuppression related to pregnancy had effects similar to process occurring in immunocompromised hosts (such as on HIV-positive patients), particularly in cases with CNS involvement, suggesting a higher rate of disease progression especially in the first trimester.1.4 Vertical transmission of M. tuberculosis is also extremely rare.[2] In our case, the patient had no symptoms following her discharge before the pregnancy. However, symptoms began to reoccur during her pregnancy despite the medication taken, suggesting a disease progression.

Another consideration of tuberculoma in pregnancy is delayed management due to its presentation may mimic another condition in pregnancy such as hyperemesis, pre-eclampsia, and fatigue.[2,7] Researches of interaction between tuberculoma and pregnancy are currently limited to few case reports and reviews, thus further research is deemed to be important.

Psychological Aspect

Tuberculosis represents major health issue worldwide. Among women aged 15-44 years in developing countries, tuberculosis remains as the third most common cause of morbidity and mortality.[8] Therefore, it is not peculiar for patients to be stressed or anxious knowing that they have contracted the disease, especially during pregnancy. Previous research conducted by Fernandez et al showed that pregnant women with any type of tuberculosis had twice the risk for alcohol use, drug abuse, and depression. The risk doubled if concomitant HIV was found on the patient.8 Fortunately, our patient in this case did not resort into using such methods in order to cope with her stress. It was true that anxiousness arose from patient and her family regarding her condition, but supports from partner and family was proven to be sufficient. Previous research also showed that support from partner as simple as doing house chores would be beneficial toward the psychological wellbeing of the patient.[8]

Spiritual coping mechanism was also reported to be beneficial for coping with challenges such as deteriorating health, fear of the death, and the inability to adhere to the medication.[8,10] On the contrary, negative coping mechanisms such as self-imposed social isolation, anger, and suicidal ideation were also reported in pregnant women with tuberculosis.[11]

The management of tuberculoma in patient would also be a double-edge sword on the patient's psychological condition. On one side, reassurance coming from routine medication and visitation to health facility would promote better perception toward patient's health, increasing compliance and stability of emotion.[8] On the other side, there was reports of psychological stress caused by treatment

of the disease, mainly due to the frequent visitation to health centers, creating anxiousness, despair, and psychological burden.[8] The amount of stress increases in pregnant women due to added fear of adverse effect on the baby.[9] In our case, the fear of having misfortunes toward the baby was also reported.

Social Aspect

Tuberculosis is a unique problem regarding its perceived stigma in the society. The stigma of high mortality rate, lengthy medication, combined with its infectivity successfully create unique social problem for its patients that is social avoidance. There have been reports of patients even hiding and sneaking back and forth the facility in order to avoid any attention drawn to them.[8] Those experiences explained misconception toward patients with tuberculosis in pregnancy. As such, non-disclosure of the illness proves to be beneficial for the patient.[8,9]

Another added social stigma to the illness for pregnant women is the disruptiveness to the gendered roles of a wife (or daughter-in-law). There has been report of rejection of marriage to woman with tuberculosis. Some societies also fear that women with tuberculosis could not have or tend a baby.[9] Due to the stigma surrounding the disease, gossip and verbal abuse would also be experienced by the patient.[10]

Previous study has shown that support from family, health provider, and peers would be significant to patient's pregnancy and psychological outcome.[8] However, support from the family would plummet if the disease occurring to the patient was accompanied by HIV due to the stigma surrounding the disease regarding sexual and drug-related problems.[8]

Financial problem is also one of the main concern of tuberculosis in pregnancy. One of the consequences in tuberculosis treatment is interrupted labor. Previous research has shown that almost all of the tuberculosis patients in Ghana had to quit their respective jobs due to medication or social stigma in their workplaces.[8] This creates new problem as financial burden toward patient and her family. Fortunately, the patient in this case was a housewife, thus not experiencing the issue.

Conclusion

Tuberculoma in pregnancy is one of the challenging problem in pregnancy. Limited resource of references combined with problems regarding both the disease, the pregnancy, and the medication would pose a threat toward patient's wellbeing. As such, it is important that healthcare providers assess the patient's need and provide comprehensive and holistic management.

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