

Preterm Delivery Associated with Pulmonary Tuberculosis in a Pregnant Woman (A Case Report)

GEBELİKTE PULMONER TÜBERKÜLOZ VE PRETERM DOĞUM (VAKA SUNUMU)

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Summary

A 24 year old primiparous woman with 35 weeks of gestation was admitted to our clinic with the diagnosis of preterm labor. After evaluation and pelvic examination which disclosed true labor with a cervical dilatation of 5 cm and effacement of 60% patient diagnosed as having preterm labor was allowed to spontaneous vaginal delivery. Following an uneventful labor course she delivered a 2350 gr male fetus with 9 and 10 Apgar scores at one and five minutes of life respectively. History revealed that patient had pulmonary tuberculosis diagnosed two months ago and antituberculosis therapy had been commenced.

Key Words: Preterm labor, Vaginal delivery, Pulmonary tuberculosis

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Özet

24 yaşında primipar bir gebe kliniğimize 35. gebelik haftasında preterm eylem tanısı ile kabul edildi. Klinik değerlendirme ve pelvik muayene sonucu 5 cm servikal dilatasyon ve %60 efasman tespit edilen hasta normal spontan vajinal doğuma bırakıldı ve normal bir travay seyri sonucu 1. ve 5. dakika Apgar skorları 9 ve 10 olan 2350 gr erkek fetus dünyaya getirdi. Hikayede hastaya 2 ay önce pulmoner tüberküloz tanısı konulduğu ve antitüberküloz tedavisinin başlandığı öğrenildi.

Anahtar Kelimeler: Preterm eylem, Vajinal doğum, Pulmoner tüberküloz

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Tuberculosis is still a great public health concern especially in the third-world countries. However worldwide emergence of human immunodeficiency virus infections along with social deprivation has increased the incidence of tuberculosis in developed countries as well. In accordance the rate of pulmonary tuberculosis during pregnancy has increased in 1990s. The issue for an obstetrician facing a pregnant woman with tuberculosis is not only the effects of tuberculosis itself on pregnancy but also the possible adverse fetal effects of the antituberculosis drugs used. Although the effects of tuberculosis on pregnancy has not been clearly determined due to lack of extensive researches, good perinatal and maternal outcomes were reported in some reviews (1). Reported adverse fetal effects in rare reviews, namely increased preterm delivery, increased perinatal mortality and lower mean birth weights may be attributable to cases of advanced disease. Finally, a considerable information is now available about antituberculosis drugs for many of which fetal safety have been established. Here

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a case of pulmonary tuberculosis complicated by preterm delivery at 35 weeks of gestation was reported.

Case Report

A 24 year old primiparous woman was admitted with true labor contractions at 35 weeks of gestation. Patient reported that she had pulmonary tuberculosis diagnosed two months ago - at 27 weeks' size- and that antituberculosis therapy had been commenced. She had a cervical dilatation of 5 cm and effacement of 60% and then was allowed to spontaneous vaginal delivery after sonographic measurement of fetal parameters, which confirmed gestational age with an estimated fetal weight of 2200 gr. Following an uneventful labor she delivered a 2350 gr male fetus with 9 and 10 Apgar scores at one and five minutes respectively.

Patient with complaints of cough, brown-colored sputum, night sweats and weight loss two months' duration was diagnosed as having pulmonary tuberculosis at the Heybeliada Sanitorium and four drug antituberculosis therapy instituted, consisting of isoniazid, ethambutol, morphozinamide and rifampicin. After delivery patient was reconsulted by chest physicians with radiologic and laboratory investigations. The chest radiography disclosing an infiltrative pattern with cavitation and mediastinal lym-

phadenopathy in the upper segments of the right lung showed a significant improvement compared to previous x-ray films. Laboratory findings were unremarkable other than a mild hypochromic anemia. Also she reported her cough and sputum disappeared shortly after therapy and gained seven kgs. With justification of clinical and radiologic responses to therapy patient was placed on two drug regimen with isoniazid 300 mg/day and rifampin 600 g/day. The infant isolated from mother immediately after delivery had no signs of pulmonary or miliary tuberculosis and was given isoniazid chemoprophylaxis with BCG vaccination. Since mother's sputum was negative for infection, the baby was allowed to the mother. Both were discharged from hospital on postpartum day four.

Discussion

Tuberculosis is still a major public health concern especially in the third-world countries. However, the incidence of tuberculosis has increased in the developed countries where human immunodeficiency virus infections coupled with social deprivation became more prevalent. Concordantly the rate for tuberculosis during pregnancy rose to 95 cases per 100.000 deliveries in 1990s from 12 per 100.000 in 1980s (1). But the incidence of tuberculosis has declined to 44.2 cases per 100.000 cases in 1990 from 52.2 per 100.000 in 1980 in Turkish population (2). The effects of tuberculosis in pregnancy is surprisingly not completely understood due to the lack of contemporaneous research. Fortunately, several studies conducted as early as 1957 through 1975 reported good perinatal and maternal outcomes even in severe cases. In a retrospective analysis of pregnant women with manifest pulmonary tuberculosis 83% of patients had a stable course during the gestational period and 9% showed disease regression whereas 7% had an progressive disease course (1). But it was reported in a study infants of women complicated by active pulmonary disease had lower mean birth weights, two fold increased preterm delivery, six fold increased perinatal mortality and SGA sizes (3). If the diagnosis is made early for which a high index of suspicion is essential, the outlook for fetus is good regardless of maternal tuberculosis infection of any degree. It was previously recommended that tuberculin skin testing should be offered in all pregnant women. But current opinion is to offer PPD skin test only in high risk groups (4) (Table 1). A PPD of 5 mm is considered positive for very high risk patients that is, those who are HIV positive, those with abnormal x-ray, or those with recent contact with an active case. For high risk groups who include foreign born, intravenous drug users who are HIV negative, low income populations 10 mm is considered positive. For none of these risk factors, 15 mm is defined as positive. If the chest radiography is normal then no therapy is necessary until after delivery when isoniazid chemoprophylaxis is given for one year. Exceptions to delayed treatment in pregnancy include recent converters, women exposed to active infection and women seropositive for HIV, all of whom

Table 1. High risk groups recommended for tuberculosis screening by the advisory committee for elimination of tuberculosis

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| 1. Persons infected with HIV |
| 2. Close contact of persons known or suspected to have tuberculosis |
| 3. Persons with medical risk factors known to increase the risk of tuberculosis |
| 4. Medically underserved low income, ethnic minority populations |
| 5. Alcoholics and intravenous drug users |
| 6. Residents of long term facilities |

should be given isoniazid chemoprophylaxis (300 mg/day) for one year.

Center for Disease Control recommended in 1993 that pregnant women with symptomatic tuberculosis should take (1) isoniazid 5 mg/kg daily up to 300 mg/day with pyridoxine 50 mg/day; (2) rifampin 10 mg/kg daily, not to exceed 600 mg/day; (3) ethambutol 5 to 25 mg/kg daily not to exceed 2.5 g/day. These groups should be given for a minimum of 9 months. In cases of drug resistance pyrazinamide should be considered (4).

Management of a pregnant woman with tuberculosis poses some special problems for the obstetrician, including the possible adverse fetal effects of the antituberculosis drugs and maternal respiratory problems. The former issue has been extensively studied and now a considerable amount of information is available for the drugs. It should be emphasized that the obstetrician should consult a chest physician before the treatment. The safety of isoniazid in pregnancy has been well documented. In a series of 1480 pregnancies treated with isoniazid, the number of abnormal fetuses was 16, that was lower than normal hospital population (5).

In a similar review of 125 patients taking isoniazid, four of five abnormal fetuses had CNS abnormality (6). However all of the patients had also received ethionamide, a drug which is known to be teratogenic. Peripheral neuritis, isoniazid induced hepatitis and liver failure are potential problems with isoniazid use. To reduce the risk of peripheral neuritis patients taking isoniazid during pregnancy should also take pyridoxine 50 mg/day.

Ethambutol may cause retrobulbar neuritis in adults. However infants of women treated with this drug had no demonstrable optic nerve abnormality. Therefore ethambutol may be considered safe in pregnancy (5). Streptomycin has been shown to cause congenital deafness in children. The risk of eighth cranial nerve damage in infants exposed to this drug in utero is 15% (5). Rifampicine which was once thought to cause fetal malformations is now recommended for use in pregnancy. Pyrazinamide; a highly effec-

tive drug is increasingly used at all stages of pregnancy with no harmful effect on fetus.

Tuberculosis infection itself may also affect fetus by transplacental passage (7). Fetal infection is acquired either hematogenously via umbilical vein or by aspiration of infected secretions at delivery. Congenital tuberculosis although rare can be fatal. The neonate should be isolated from mother immediately after birth if mother's sputum show evidence of infection. Neonatal infection is unlikely if the mother with active infection has been treated for at least two weeks before delivery. The neonate should be treated with prophylactic isoniazid for three months with or without BCG vaccination. The treatment regimen for the symptomatic infant is the same as for adults.

REFERENCES

1. Margono F, Mroueh J Garely et al. Resurgence of active tuberculosis among pregnant women. *Obstet Gynecol* 1994; 83:911.
2. Özyardımcı N. Akciğer ve akciğer dışı organ tüberkülozları. *Uludağ Üniversitesi Yayınları* 1993; 17-8.
3. Jana N, Vasihta K, Jindal SK et al. Perinatal outcome in pregnancies complicated by pulmonary tuberculosis. *Int J Gynecol Obstet* 1994; 44:119.
4. CDC; Initial therapy for tuberculosis in the era of multidrug resistance. Recommendations of the advisory committee for elimination of tuberculosis. *MMWR* 1993; 42:1.
5. Snider DE, Layde PM, Johnson MW et al. Treatment of tuberculosis during pregnancy. *Am Rev Respir Dis* 1980; 122:65.
6. Monnet P, Kalp JC, Pujol M. De l'influence nocive de l'isoniazid sur le produit de conception. *Revizyon Med* 1967; 217:431.
7. Kaplan C, Benischke K, Tarzy B. Placental tuberculosis in early and late pregnancy. *Am J Obstet Gynecol* 1980; 137:858.