

Measles and Miscarriages: About 2 Cases at the Hassan II University Hospital of Fez

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Abstract

Case Report

Measles is the most contagious vaccine-preventable viral disease. It spreads endemically and epidemically, with a peak incidence in spring. Transmission occurs mainly by air, through inhalation of infected respiratory secretions. Rubella during pregnancy, particularly during the first trimester, can cause miscarriage, fetal death, stillbirth, or congenital malformations, called congenital rubella syndrome (CRS). Measles during pregnancy exposes the patient to the risk of maternal pulmonary complications, early miscarriage, and threatened preterm delivery. The aim of our study is to analyze maternal complications, particularly respiratory and cardiac involvement, as well as fetal complications.

Keywords: Measles, pregnancy, miscarriage.

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INTRODUCTION

Measles is one of the most common and contagious vaccine-preventable viral diseases. It constitutes a high-risk infection for the mother, particularly due to the risk of severe pneumonia that can lead to acute respiratory distress and compromise her life prognosis [1].

It also represents a danger for the fetus, with an increased risk of fetal death in utero, miscarriages and premature delivery [2], as well as congenital and neonatal complications. In the current epidemic context, an increase in measles cases and exposures during pregnancy is to be feared. It is in this perspective that we studied two cases of measles complicated by miscarriages, treated in the gynecology and obstetrics department II of the Hassan II University Hospital in Fez.

PATIENTS AND OBSERVATIONS

Observation 01:

This is Mrs. X, aged 34, with no significant pathological history, gestation 04, parity 03, including 03 living children, vaginal delivery, the current pregnancy is said to be 3 months according to the patient, date of last period unclear, no T1 ultrasound, course marked by the occurrence of a skin rash on the face evolving in a descending manner preceded by a pseudo-flu syndrome, associated with chest pain and dyspnea, in

whom the clinical examination on admission: finds a conscious patient, normally tense, tachycardic at 115bpm, polypneic at 28 cycles/min, with a saturation at 92% on room air, apyretic. The skin examination revealed a morbiliform exanthem on the face and trunk, with an enanthem on the oral mucosa with doubt about the Koplick sign. The cardiovascular examination: No signs of heart failure, supple calves, no crackles and the obstetric examination was without particularities with the pelvic ultrasound: visualization of a bi-chorionic bi-amniotic gestational sac, positive cardiac activity without trophoblastic detachment, biometry corresponding to 16 weeks. It should be noted that the patient underwent a biological assessment which demonstrated: GB 9080, CRP: 277, hepatic cytolysis (GOT 5*N, GPT 4*N), associated with functional renal failure (urea 0.95, Crea 15), with elevated dimers at 1190, hence the performance of a Doppler ultrasound of the lower limbs demonstrating a common femoral deep vein thrombosis bilaterally, and supplemented by a transthoracic ultrasound in view of the suspicion of a pulmonary embolism: which demonstrated a non-dilated cavities, an ejection fraction of 60%, minimal mitral insufficiency, non-dilated inferior vena cava, with the presence of a pericardial detachment. She also underwent a thoracic CT scan which demonstrated foci of pulmonary condensation in the middle and lower lobes bilaterally, suggesting an infectious origin. Hence her transfer to the maternal intensive care unit for additional

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care. During her stay, she presented with moderate metrorrhagia associated with pelvic pain, with expulsion of two fetuses without cardiac activity weighing 100g and 120g respectively with a control ultrasound showing a line of emptiness followed to the fundus without retention image. The evolution was marked by the occurrence of episodes of agitation without motor deficit

or convulsive seizures, hence the performance of a brain scan which returned without anomalies, a lumbar puncture was performed which found sterile fluid without germs individualized. The patient benefited from her measles treatment with good clinical and biological remission and was declared discharged.



Figure 1: Ultrasound Image of BIP



Figure 2: ECHO Image of the BIP at 16SA

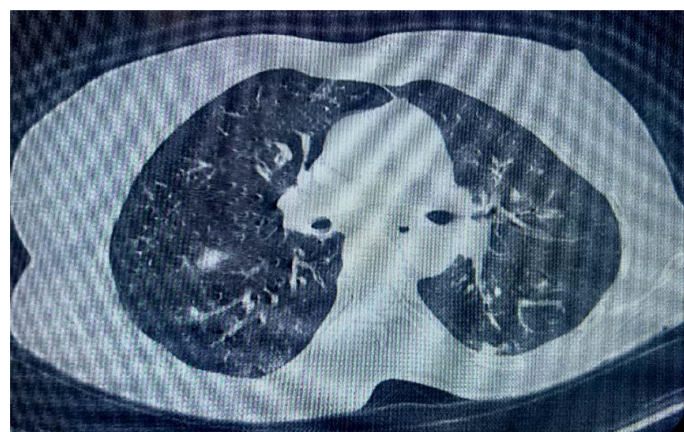


Figure 3: Scan Image: Pulmonary Condensation Focuses

Observation 02

This is Mrs. Y, aged 35, with no significant pathological history, gestation 02, parity 01, vaginal delivery, current pregnancy estimated at 5 weeks of amenorrhea and 3 days, according to a precise date of the last period, with a course marked by the occurrence of a pseudo-flu syndrome then a skin rash on the face, followed by febrile dyspnea; In whom the clinical examination on admission finds a conscious patient, tachycardic at 112bpm, polypneic at 30 cycles/minute, with a desaturation to 79% on room air, febrile at 38.5°. With on skin examination: scaly erythematous plaque pigmented in places at the perioral level, with erosions topped with cuts hemorrhagic. The cardiovascular examination was unremarkable; the gynecological examination showed: the presence of low-abundance bleeding from the endocervix, with vaginal touch: cervix at the pulp, with pelvic ultrasound: presence of an intrauterine gestational sac with visualization of the yolk

sac and embryonic button, both annexes: seen. During the explorations, she benefited from an assessment biological returning: GB 181400, CRP at 305, normal liver function tests, no renal failure, high dimers at 870, hence the performance of a thoracic CT angiography in view of the suspicion of pulmonary embolism which revealed multiple pulmonary parenchymal nodules and micronodules associated with diffuse peribronchovascular thickening in both lung hemifields and foci of alveolar condensation bilaterally. Hence her transfer to the maternal intensive care unit for additional care. During her stay, and after clinical stabilization of the patient, she was induced with misoprostol according to FIGO recommendations, with notion of expulsion and ultrasound control of the vacuity line followed to the fundus. She was put on antibiotics, corticosteroid therapy, preventive anticoagulation. With good clinical and biological improvement, then declared discharged.

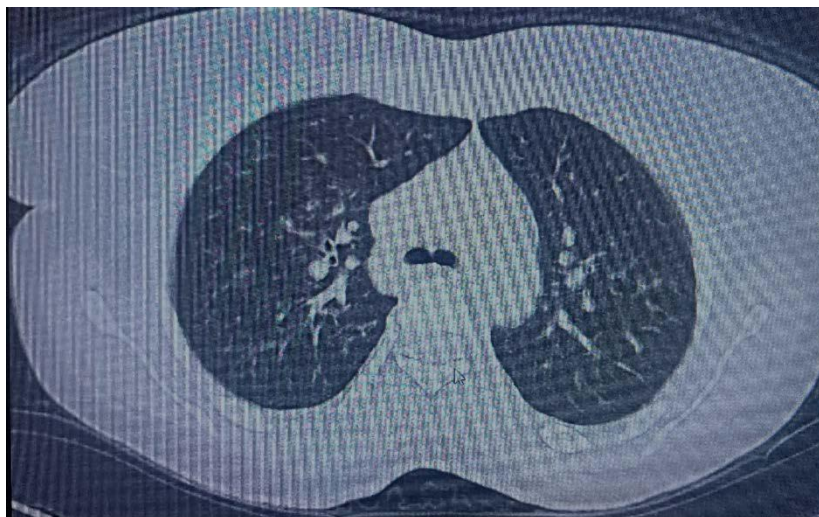


Figure 4: SCAN IMAGE: pulmonary parenchymal nodules and micronodules

DISCUSSION

Measles is the vaccine-preventable infectious disease responsible for the highest mortality rate in the world. In addition, universal vaccination has changed the epidemiology of the disease by significantly reducing its incidence and mortality.

It is an infection caused by an RNA virus of the morbillivirus genus of the paramyxovirus family, whose sole reservoir is humans. Transmission is mainly by direct airborne route through infected respiratory secretions. The incubation period between infection and the rash lasts ten to 12 days. The rash is preceded by an invasion phase of two to four days which combines a high fever, oculo-nasal catarrh and a cough. The morbilliform rash is characteristic, it classically begins behind the ears with a descending evolution, then a fine desquamation. The evolution of measles is favorable in more than 90% of cases, but sometimes severe complications are possible, exposing the pregnant

woman to respiratory, cardiac, neurological and hepatic damage. With fetal involvement: early or late spontaneous miscarriages, fetal death in utero. With neonatal involvement.

Maternal Complications

Respiratory involvement is the most common and severe maternal complication, manifesting as fever and cough that can progress to life-threatening respiratory distress. This complication was observed in both of our patients. Our results are consistent with those reported in the literature, including the study by Atmar *et al.*, [3], who in a series of 13 cases, noted acute pneumonia in 54% of patients. According to the study by Ali *et al.*, [4] in a series of 40 cases, the maternal complications reported mainly include acute hepatitis observed in 26 patients, a complication also present in our patient. Other complications have been described, such as cardiac involvement (acute myocarditis, pericarditis, and electrocardiographic abnormalities) and neurological complications (seizures, acute

encephalitis). However, the latter were not observed in our patients, and no similar cases have been reported in the literature.

Fetal complications

The measles virus is not teratogenic, but it can induce fetal abnormalities by altering placental function. Indeed, the incidence of malformations in exposed fetuses is similar to that of the general population [5]. Measles infection during pregnancy presents several risks, the severity of which depends on the term at which it occurs. Complications most often appear within 14 days of the onset of the rash and include an increased risk of spontaneous miscarriages, early or late, during the first and second trimesters. The study by Eberhard-Phillips *et al.*, conducted on a series of 58 cases, highlighted five spontaneous miscarriages, two fetal deaths in utero and 11 premature deliveries, two of which ended in neonatal deaths [6]. These results are in agreement with our two cases.

Therapeutic support:

Therapeutic management is based on hospitalization in the event of signs of severity, particularly respiratory, as well as symptomatic treatment. To date, no antiviral has demonstrated its effectiveness in reducing symptoms or the risk of complications. In addition, the use of polyvalent immunoglobulins has not been evaluated in this indication. Finally, systematic antibiotic therapy is not recommended. Fetal monitoring adapted to gestational age will be proposed. It is based on daily cardiotocographic recording from the threshold of viability (25 to 26 weeks of amenorrhea) and throughout the period of increased risk, i.e. the 14 days following the rash. Tocolytic treatment in the event of an associated threat of premature delivery may be prescribed. There is no contraindication to carrying out corticosteroid therapy for maturation purposes, if necessary. In the event of confirmed contagion with measles, two means of prevention have been described in the literature. The first is to vaccinate the subject within 72 hours of exposure, which prevents the risk of measles in 90% of cases [7]. Since vaccination is contraindicated in pregnant women, this method is therefore not the recommended one. The second option consists of administering immunoglobulins within six days of infection. They are administered intravenously and require a short hospitalization. Treatment should be administered as quickly as possible, no later than six days after contact,

at a dose of 400 mg/kg in a single intravenous injection (temporary therapeutic protocol).

CONCLUSION

Measles during pregnancy is a significant risk factor for obstetric complications, particularly miscarriage, which is more likely to occur in the first or second trimester. Although the measles virus is not directly teratogenic, it can cause fetal abnormalities due to placental dysfunction, compromising oxygenation and nutritional supply to the fetus. Prevention through vaccination remains the most effective way to avoid these complications. In the event of infection, appropriate management, including close fetal monitoring and symptomatic support for the mother, is essential to limit the risks of maternal-fetal complications.

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