

## A Case Report on 11 Weeks Miscarriage in a 32 Years Pregnant Women Due to Rubella Virus

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### **Abstract**

A rare case was founded in Hyderabad with a problem of miscarriage in 11 weeks pregnant women aged 32 years due to an attack of rubella virus. She came to hospital with a chief complaints runny nose, fever, headache, and joint pains from last 10 days and mild rashes over skin from last 5 days. Although she was under good diet and medication with folic acid and ferrous ascorbate she suffered from her chief complaints. Her blood reports were found to be normal, but ultrasound scan reported with no heartbeats of fetus and confirmed as miscarriage. To know its cause patient was suggested to blood serum test by Enzyme Immunoassay method and it reveals presence of IgM. So it was confirmed as an attack with rubella virus and done voluntary abortion. Later she was treated for her symptoms with acetaminophen and ibuprofen and also vaccinated with rubella vaccine.

**Keywords:** Rubella virus, miscarriage, teratogenesis, serum test, rubella vaccine.

## 1-Introduction

An unusual Rubella Virus also known as German measles<sup>1</sup> is classified as the member of the genus *Rubivirus* within the family *Togaviridae*; the name “togavirus” is derived from the Latin “toga,” meaning cloak or shroud has a single stranded genome<sup>2,3</sup>.

It is a contagious viral infection, has a long incubation period up to 12-23 days after its exposure<sup>4</sup>. It usually spread through air via cough. After 2 weeks of its exposure rashes (small red or pink spots) may appear and lasts about for 3 days. It may also appear as fever, swollen lymph nodes, general aches, malaise and fatigue<sup>5</sup>. These symptoms last from 1 to 5 days before the rash appears and are more common in adults. Once the rash appears, the fever resolves.

Some studies reveals during early pregnancy rubella virus infection leads to teratogenesis<sup>6</sup> has not been elucidated, but the cytopathology in fetal tissues suggests necrosis or apoptosis as well as inhibition of cell division of critical precursor cells involved in organogenesis. Some other studies reveal an unusual rubella virus has been observed in cell culture leads to mitochondrial abnormalities and cytoskeleton disruption. These manifestations are most probably linked and play a role in rubella virus which causes teratogenesis, but there is no known clear reason<sup>7,8</sup>.

Rubella virus finally results in miscarriage or congenital rubella syndrome (CRS) in child born<sup>9</sup>. Rubella problems are rare after 20<sup>th</sup> week of pregnancy. On suspicion of rubella, blood or saliva test looks for detection of presence of IgM antibodies<sup>10,11</sup>.

There is no specific treatment and also there's no cure for rubella, it only needed on its own to go away. Symptomatic treatment can be suggested with paracetamol and ibuprofen for fever and headache. Rubella can be prevented by having rubella vaccination<sup>12,13,14</sup>.

## 2-Case Presentation

An 11 weeks pregnant woman with 32 years of age was admitted in the hospital with the chief complaints of runny nose, fever, headache, and joint pains from last 10 days and mild rashes over skin from last 5 days. During the time of rashes fever is resolved. She was already under medication with folic acid 5mg and ferrous ascorbate. Although she was with a good diet, she felt discomfort with her chief complaints. Her complete blood reports were found to be normal. Her ultrasound scan was reported with no heartbeat of fetus indicated with an 11 weeks fetus miscarriage and the fetus voluntarily removed. She was suspected on her immune for the cause of miscarriage and tested for antibodies with her serum sample by Enzyme Immunoassay method and was resulted with a presence of IgM antibody. Finally it was understood that Rubella Virus attack was a causative factor to occur miscarriage of her pregnancy. Later she went with the treatment of rubella vaccine and treated for her chief complaints.

### 3-Discussion

A rare case was detected in Hyderabad with an attack of rubella virus where it results the miscarriage of 11 weeks pregnancy in a 32 years women. Rubella virus has greater chances of exposure through contagious viral infected persons, where the patient was also exposed through viral air. As discussed in previous studies, patient also suffered from symptoms of runny nose, fever, headache, joint pains. To know the cause for miscarriage she went with her blood serum sample test by Enzyme Immunoassay method and detected with IgM antibodies, where the patient was confirmed with rubella virus exposure. After its time of incubation period, the patient was also started from rashes and resolved from fever.

Some studies reveals rubella virus attack leads necrosis or apoptosis of fetal tissues as well as inhibition of critical precursor cells which involved in organogenesis. Some other studies results with mitochondrial cell culture abnormalities and cytoskeleton disruption. These manifestations has link with rubella virus and it shows its teratogenesis effect. But there is no clear mechanism for rubella virus to cause miscarriage or CRS.

Later she was symptomatically treated and vaccinated with rubella vaccine for its further prevention.

### 4-Conclusion

This is a rare case where early suspect and early diagnosis of rubella virus can be prevented from miscarriage in pregnancy women by vaccinating with rubella vaccine. In the regions of epidemic exposure of rubella virus, blood serum test or mouth saliva test should be done to detect the presence of IgM antibodies before planning for pregnancy and also should injected with a rubella vaccine.

### References

1. **Neighbors**, M., Tannehill, J.R., "Childhood diseases and disorders" Clifton Park, New York (2010).
2. **Frey**, T.K., Molecular biology of rubella virus, *Advance Virus Research*, **44**, 69(1994).
3. **Geyer**, H., Bauer, M., Neumann, J., Ludde, A., Rennert, P., Friedrich, N., Claus, C., Perelygina, L., Mankertz A., Gene expression profiling of rubella virus infected primary endothelial cells of fetal and adult origin, *Virology Journal*, **13**, 21(2016).
4. **Lambert**, N., Strebel, P., Orenstein, W., Icenogle, J., Poland, G.A., Rubella, *Lancet*, **385**, 2297(2015).
5. **Edlich**, R.F., Winters, K.L., Long, W.B., Gubler, K.D., Rubella and congenital rubella (German measles), *Journal of Long Term Eff Medical Implants*, **15**, 319(2005).
6. **De Santis**, M., Cavaliere, A.F., Straface, G., Caruso, A., Rubella infection in pregnancy, *Reproductive Toxicology*, **21**, 390(2006)

7. **Jia Yee**, Lee., Scott Bowden, D., Rubella Virus Replication and Links to Teratogenicity, *Clinical Microbiology Review*, **13**, 571(2000).
8. **Perelygina**, L., Zheng, Q., Metcalfe, M., Icenogle, J., Persistent infection of human fetal endothelial cells with rubella virus, *PLoS One*, 8(2013).
9. **Willame**, C., Henry, O., Lin, L., Vetter, V., Baril, L., Praet, N., Pain caused by measles, mumps, and rubella vaccines: A systematic literature review, *Vaccine*, 8(2017).
10. **Pustowitz**, B., Liebert, U.G., Predictive value of serological tests in rubella virus infection during pregnancy, *Intervirology*, **41**, 170(1998).
11. **Cradock Watson**, J.E., Laboratory diagnosis of rubella: past, present and future, *Epidemiology Infection*, **107**, 1(1991).
12. **Horstmann**, D.M., Rubella: the challenge of its control. *Journal of Infectious Disease*, **123**, 640(1971).
13. **Cardemil**, C.V., Dahl, R.M., James, L., Wannemuehler, K., Gary, H.E., Shah, M., Marin, M., Riley, J., Feikin, D.R., Patel, M., Quinlisk, P., Effectiveness of a Third Dose of MMR Vaccine for Mumps Outbreak Control, *N England Journal of Medicine*, **377**, 947(201).
14. **Monif**, G.R., Jordan, P, A., Rubella virus and rubella vaccine, *Semin Perinatol*, **1**, 41(1977).