

A 2-day-old boy in the newborn nursery did not pass his hearing screening bilaterally. He was born at 37 weeks gestation by cesarean delivery due to worsening fetal growth restriction. The mother's prenatal history includes a brief febrile illness during international travel in the first trimester. She developed joint pain for approximately 5-7 days after the illness. The infant's weight, length, and head circumference are <5th percentile. Auscultation reveals a loud murmur over the left second intercostal space. Which of the following additional findings is most likely present in this patient?

- ☐ A. Cataracts
- ☐ B. Chorioretinitis
- ☐ C. Limb hypoplasia
- ☐ D. Rhinitis
- ☐ E. Vesicular skin lesions



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- ✓ ☒ A. **Cataracts** [75%]
- ☐ B. Chorioretinitis [18%]
- ☐ C. Limb hypoplasia [4%]
- ☐ D. Rhinitis [1%]
- ☐ E. Vesicular skin lesions [3%]

[Proceed to Next Item](#)

Explanation:

User Id: 

Rubella (German measles)	
Clinical presentation	<ul style="list-style-type: none"><li>• <b>Congenital</b><ul style="list-style-type: none"><li>○ Sensorineural hearing loss</li><li>○ Cataracts</li><li>○ Patent ductus arteriosus</li></ul></li><li>• <b>Children</b><ul style="list-style-type: none"><li>○ Fever</li><li>○ Cephalocaudal spread of maculopapular rash</li></ul></li><li>• <b>Adolescents/Adults</b><ul style="list-style-type: none"><li>○ Same as children + arthralgias/arthritis</li></ul></li></ul>
Diagnosis	<ul style="list-style-type: none"><li>• Serology</li></ul>
Prevention	<ul style="list-style-type: none"><li>• Live attenuated rubella vaccine</li></ul>

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**Prevention**

- Live attenuated rubella vaccine

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This small-for-gestational-age newborn with hearing loss and a likely cardiac defect in the setting of a maternal first-trimester illness likely has **congenital rubella syndrome** (CRS). In adults, rubella infection can be asymptomatic or characterized by mild symptoms (eg, fever, arthralgia, maculopapular rash). However, infection during pregnancy is dangerous due to high risk of viral transmission through the placenta into fetal circulation. **First-trimester** infections are particularly threatening as they occur during early development (eg, organogenesis) and can lead to either spontaneous abortion or CRS.

The classic triad of CRS includes a machine-like systolic murmur of **patent ductus arteriosus**, sensorineural **hearing loss**, and leukocoria (white pupillary reflex) from **cataracts**. A probable diagnosis can be made clinically and confirmed by serology (infant IgM). Universal vaccination has reduced, but not eliminated, CRS.

**(Choice B)** Both toxoplasmosis and cytomegalovirus can cause a mild, influenza-like maternal infection. Congenital toxoplasmosis, however, classically presents with chorioretinitis, hydrocephalus, and diffuse intracranial calcifications. Congenital cytomegalovirus infection can also lead to chorioretinitis and periventricular calcifications; cataracts or cardiac defects are not seen.

**(Choice C)** Congenital varicella syndrome is characterized by limb hypoplasia, cataracts, and distinctive skin lesions (eg, scarring). Varicella is not associated with cardiac defects.

**(Choice D)** Congenital syphilis can cause hepatomegaly, nasal discharge ("snuffles"), osteoarticular destruction, and a maculopapular rash. Heart defects are not seen, and sensorineural hearing loss is a late sequela of untreated congenital syphilis.

**(Choice E)** Herpes simplex virus is usually acquired perinatally during delivery and most commonly presents at age 1-4 weeks. Transplacental (ie, congenital) herpes infection is rare and presents with brain destruction and seizures as well as vesicular skin lesions; hearing loss and heart defects are not seen.

**Educational objective:**

Maternal-fetal transmission of the rubella virus is most teratogenic during the first trimester. The classic triad of congenital rubella syndrome includes sensorineural hearing loss, cardiac defects (eg, patent ductus arteriosus), and cataracts.

**References:**



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#### References:

1. [Rubella and pregnancy: diagnosis, management, and outcomes.](#)
2. [Three cases of congenital rubella syndrome in the postelimination era--Maryland, Alabama, and Illinois, 2012.](#)