



ROCKY MOUNTAIN SPOTTED FEVER

1. **Agent:** *Rickettsia rickettsii*, a pleomorphic, obligate intracellular coccobacillus.

2. **Identification:**

a. **Symptoms:** Acute onset of fever, which may persist for 2-3 weeks, headache, chills, and conjunctival injection. A maculopapular rash appears on the extremities about the third day, which includes the palms and soles and involves most of the body; petechiae and hemorrhages are common.

Case fatality rate in untreated cases is 20%. Although deaths are rare once prompt treatment begins, in recent years 4% of the cases in the United States have been fatal.

b. **Differential Diagnosis:** Measles, meningococemia, coxsackie and echovirus infections, typhoid fever, murine typhus, and Colorado tick fever. Complement fixation test of sera may cross-react with other diseases. See **DIFFERENTIAL DIAGNOSIS OF ACUTE EXANTHEMS** (Appendix A).

c. **Diagnosis:** Serologic tests of paired sera, detection of rickettsia by immunofluorescence in skin biopsies.

3. **Incubation period:** 3-14 days.

4. **Reservoir:** Maintained in nature by transovarial and transstadial passage among ticks. Transmission to dogs, various rodents, and other animals possible; infection in animals is usually subclinical, although disease has been observed in dogs.

5. **Source:** *Dermacentor* species of ticks (American dog tick); possibly *Amblyomma* species. The brown dog tick (*Rhicephalus sanguineus*) has been described in Arizona.

6. **Transmission:** Bite of tick (several hours of attachment required); contamination of skin with crushed tissue or feces of tick.

7. **Communicability:** Not person-to-person. Tick remains infective for life.

8. **Specific Treatment:** Tetracyclines or chloramphenicol (preferred for children under 8 and pregnant women).

9. **Immunity:** Probably permanent.

REPORTING PROCEDURES

1. **Reportable.** *California Code of Regulations*, Title 17, Section 2500.

2. **Report Form:** **TICK-BORNE RICKETTSIAL DISEASE CASE REPORT (CDC 55.1, 1/01 fillable).**

3. **Epidemiologic Data:**

a. Recent travel to endemic areas: eastern, central, southwest US

b. History of tick bite or exposure to pets with ticks.

c. Occupational exposure.

CONTROL OF CASE, CONTACTS & CARRIERS

Investigate within 7 days unless circumstances indicate a higher priority.

CASE:

Isolation: None.

CONTACTS: No restrictions.

CARRIERS: Not applicable.

PREVENTION-EDUCATION

1. Use tick repellents in endemic areas.

2. Wear protective clothing in areas where ticks are present. Check for and immediately remove any attached ticks.

3. Prevent exposure of domestic animals to ticks.



DIAGNOSTIC PROCEDURES

Clinical and epidemiologic histories are required to aid the laboratory in test selection.

1. **Serology:** Paired sera required.

Container: Serum separator tube (SST).

Test requested: Rocky Mountain Spotted Fever serology.

Material: Whole clotted blood.

Amount: 8-10 ml.

Storage: Refrigerate.

Remarks: Collect first (acute) blood specimen as soon as possible. Collect second (convalescent) blood approximately 2 weeks after the first. Send each specimen to Public Health Laboratories as soon as it is collected. A third specimen (30-40 days after onset) may be necessary if early antibiotic therapy has been instituted.

2. **Other:** PCR can be performed on whole blood and tissue specimens.

3. **Immunohistochemical:** Staining of skin biopsy and autopsy specimen.