

# PNEUMONIA ACQUIRED IN THE COMMUNITY WITH POSITIVE SEROLOGIES FOR *RICKETTSIA CONORII*

---

## Keywords

community-acquired pneumonia, *Rickettsia conorii*.

## Authors

Ilduara Pintos Pascual, MD<sup>1</sup>, Soledad Domínguez Mendoza, MD<sup>2</sup>, María José Calvente Cestafe, MD<sup>3</sup>.

<sup>1</sup> Department of Internal Medicine, Puerta de Hierro Hospital. Majadahonda, Spain.

<sup>2</sup> School of Medicine, Rey Juan Carlos University. Móstoles, Spain.

<sup>3</sup> Instituto de Gestión Sanitaria. Spanish Health Ministry.

## Corresponding author

**Ilduara Pintos.** Email: [ilduarapintos@gmail.com](mailto:ilduarapintos@gmail.com)

## Conflict of interest

None

## Financial disclosure

None



## PNEUMONIA ACQUIRED IN THE COMMUNITY WITH POSITIVE SEROLOGIES FOR *RICKETTSIA CONORII*

Ilduara Pintos Pascual, Soledad Domínguez Mendoza, María José Calvente Cestafe.

We present the case of a 50-year-old woman with a history of possible non-studied cephalosporin allergy, a 20-year ex-smoker of 20 cigarettes a day for 10 years. No relevant medical history except 12 years ago she had presented an episode of community-acquired pneumonia with good progression and finding on a solitary pulmonary nodule radiograph with no changes in follow-up. She went to her primary care physician for dyspnoea, non-productive cough, pleuritic chest pain, fever and asthenia the prior 4 days without other associated symptoms. An x-ray was performed showing an infiltrate compatible with pneumonia in the medial segment of the middle lobe (Figure 1).

She was treated with levofloxacin for 7 days (she was afebrile from the second day). Subsequently, she persisted with a non-productive cough and intense asthenia, associating generalized arthromyias and returning to primary medical care. Serologies for *Coxiella* and *Brucella* were negative and for *Rickettsia conorii* IgG and IgM were positive. No other serologies were performed or other samples obtained for microbiological analysis, neither basic biochemistry nor hemogram was extracted and doxycycline was started. Given the lack of improvements in the three days of the new treatment, she went to the emergency room.

The patient was treated in the summer. She has a veterinary son, two dogs, a cat and a parakeet. She has had parakeet records with psittacosis. There is no record of tick bites, no appearance of cutaneous lesions, presented headache at the beginning of the table that related to cough and fever. In the physical examination skin lesions were not observed, the pulmonary auscultation was normal and in the abdominal examination hepatosplenomegaly was not palpable, the rest of exploration showing no additional findings. Urgent radiography was requested where the previous infiltration was not evident after the course of one month from the beginning of the symptomatology (Figure 2).

Serologies for atypical pneumonia including *Mycoplasma pneumoniae*, *Chlamydia spp*, *Legionella pneumophila*, *Coxiella burnetii* and serology for *Rickettsia conorii* were repeated on suspicion of probable cross-serology. The patient was referred for collection of results and clinical reevaluation in two weeks. Serologies were reportedly all negative except for

doubtful positive titers for *Coxiella burnetii* and positive for *Rickettsia conorii*. The patient referred persistence of asthenia and arthromyias in improvement and complete resolution of respiratory clinic. Full analysis is required to assess other causes of asthenia and arthritis, with the results being strictly normal. The patient progressed favourably with complete resolution of symptoms after two months.

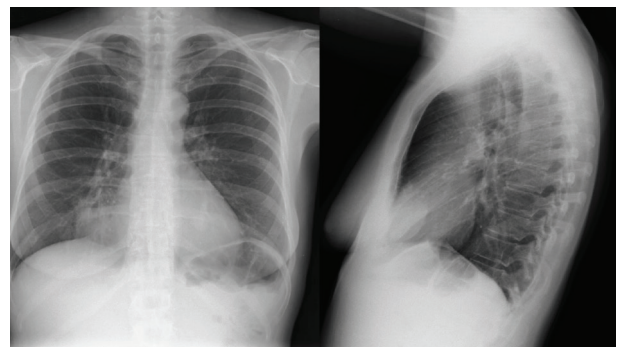


Figure 1. Infiltrate in the medial segment of the middle lobe.

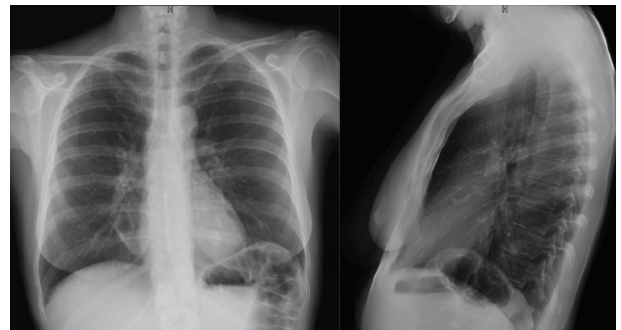


Figure 2. X-ray after a month of evolution without an infiltrate.

## DISCUSSION AND CONCLUSION

We present a possible case of *Rickettsia conorii* pneumonia. Although no direct identification was obtained, the presence of serologies and the clinic could be compatible with a new case of *Rickettsia conorii* pneumonia. Although, it could be another species with cross-reaction, so the absence of exanthema and black spot that appears in a high percentage of patients.

*Rickettsia conorii* pneumonia is a very uncommon entity with only a few cases described in the literature<sup>1,2</sup>. In a recent review<sup>3</sup>, 34% of the patients presented contact with dogs and 10% noticed the tick bite. Most common symptoms were: fever 98%, myoarthralgia 64% and headache 48%. Maculopapular rash was noticed in 87%, inoculation eschar was found in 60%.

Direct identification of *Rickettsia* by cellular culture, immunohistological techniques or PCR from skin or eschar biopsies is the most specific method of diagnosis<sup>4</sup>. As direct identification of *Rickettsia* is expensive, serological tests are the most frequently used diagnostic method. The diagnosis is confirmed by seroconversion or by a fourfold rise in titers between acute and convalescence serum samples<sup>5</sup>. However, the selection of antigens used in this method is limited and cross-reacts with different *Rickettsia*, making it difficult to identify the definitive etiological agent<sup>6</sup>.



## REFERENCES

1. Ardaillou A, Deparis M, Giroud P, Sarrazin A. Atypical pneumonia caused by Mediterranean exanthematous fever. *Rev Prat.* 1956 Oct 21;6(27):3025-6.
2. Marcos Sánchez F, Gómez Tello V, Górgolas Hernández-Mora P, Durán Pérez Navarro A. Mediterranean boutonneuse fever and pneumonia. *AnMed Interna.* 1989 Sep;6(9):502-3.
3. Crespo P, Seixas D, Marques N, Oliveira J et al. Mediterranean spotted fever: case series of 24 years (1989-2012). *Springer Open Journal.* 2015. 4:272. DOI 10.1186/s40064-015-1042-3.
4. Walker DH, Raoult D (2010) *Rickettsia rickettsii* and other spotted fever group Rickettsiae (Rocky mountain spotted fever and other spotted fevers). In: Mandell GL, Bennett JE, Dolin R (eds) *Mandell, Douglas and Bennett's principles and practice of infectious diseases*, vol 2, 7th edn. Churchill Livingstone Elsevier, Philadelphia, pp 2499-2507.
5. Oliveira J, Côrte-Real R (1999) Rickettsioses em Portugal. *Acta Med Port* 12:313-321.
6. Brouqui P, Bacellar F, Baranton G, Birtles RJ, Bjoërsdorff A, Blanco JR et al (2004) Guidelines for the diagnosis of tick-borne bacterial diseases in Europe. *Clin Microbiol Infect* 10(12):1108-1132.

