

CASE IMAGE

Mediterranean spotted fever as a non-endemic disease in the southeast of Iran: Diagnosis and treatment based on specific skin lesion

Mehrdad Farrokhnia¹ | Sara Shafieipour² | Mohsen Nakhaie² |
Mohammad Rezaei Zadeh Rukerd² 

¹Infectious and Tropical Research Center, Kerman University of Medical Sciences, Kerman, Iran

²Gastroenterology and Hepatology Research Center, Institute of Basic and Clinical Physiology Sciences, Kerman University of Medical Sciences, Kerman, Iran

Correspondence

Mohammad Rezaei Zadeh Rukerd, Gastroenterology and Hepatology Research Center, Institute of Basic and Clinical Physiology Sciences, Kerman University of Medical Sciences, Kerman, Iran.
Email: mohammadrezaei75@yahoo.com

Key Clinical Message

Rickettsia spp. should be investigated if Tache Noire, as a dark plaque covering a superficial ulcer surrounded by scale, edema, and erythema, are observed, even in non-endemic areas of Rickettsia spp.

Abstract

A 31-year-old man with fever, dyspnea, abdominal pain, and jaundice has been admitted to the hospital in the southeast of Iran. Due to the presence of a pathognomonic skin lesion (Tache noire), the patient was diagnosed with Mediterranean spotted fever (MSF) and was treated with doxycycline, without waiting for PCR and IFA findings.

KEYWORDS

Iran, Mediterranean spotted fever, Tache noire

1 | CASE PRESENTATION

A 31-year-old man began experiencing fever, dyspnea, malaise, nausea, and progressive abdominal pain from 10 days later after he traveled to Kerman, southeast of Iran. There was no history medication usage, or allergy. The patient does not recall any animal or insect bites occurring in the prior weeks.

In physical examination, the sclera was icteric. In the examination of the extremities, a dark crusty skin finding aligned with eschar, with a diameter of 1 × 1.5 cm could be observed in his right leg surrounded by scale, edema, and circular erythema (Figure 1) also, there were maculopapular rashes in all four extremities.

In laboratory tests, leukocytosis (white blood cell count: 24.3×10^9 /liter), abnormal aspartate aminotransferase (AST: 108 IU/L), alanine transaminase (ALT: 83 IU/L),

and bilirubin (total: 12 mg/dL and direct: 8 mg/dL) were detected. Chest CT-scan showed bilateral pleural effusion, and thoracentesis was performed; the fluid was transudate.

According to the evidence of the pathognomonic skin lesion (Tache Noire) and the history of similar signs and symptoms in previous patients treated at this center,¹ such as fever, chill, headache, myalgia, nausea, vomiting, and specific skin lesion, sera samples for *Rickettsia* spp. by real-time PCR and IFA for the presence of antibodies against *R. conorii* were collected, and without waiting for PCR and IFA findings, the patient with a diagnosis of Mediterranean Spotted Fever (MSF) was treated with Doxycycline (100 mg/12 h). The patient had good compliance with the antibiotic therapy, and he was discharged in less than 1 week with no complications. The diagnosis was confirmed by a positive PCR test and a fivefold rising of IgG antibodies against *R. conorii*, with baseline titer 1:125 and second titer 1:512.

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2023 The Authors. *Clinical Case Reports* published by John Wiley & Sons Ltd.



FIGURE 1 Tache Noir (dark spot), a skin manifestation of Mediterranean Spotted Fever on the extremity of the patient suggesting the place of a Tick bite.

2 | DISCUSSION

MSF is a tick-borne disease that is endemic in Mediterranean regions and is caused by *Rickettsia conorii* subspecies *conorii*. MSF findings include fever, maculopapular rash, and pathognomonic eschar.² Although Iran is considered a non-endemic country in terms of MSF, several cases of MSF have been reported in Kerman province in the southeast of Iran.^{1,3} In patients presenting with non-specific symptoms such as fever, chills, and headache, it is vital to pay particular attention to any skin lesions. If Tache Noire are noticed, even in non-endemic areas of *Rickettsia* spp. and without a comprehensive history of tick bites by the patient, infections caused by *Rickettsia* spp. should be considered.

3 | CONCLUSION

In conclusion, the presented case of a 31-year-old man experiencing fever, dyspnea, and abdominal pain after traveling to Kerman, Iran highlights the occurrence of Mediterranean Spotted Fever (MSF) in a non-endemic region. The presence of pathognomonic skin lesions, such as the Tache Noire and maculopapular rashes, along with laboratory findings, led to the diagnosis of MSF caused by *Rickettsia conorii* subspecies *conorii*. Early recognition and prompt treatment, such as administration of Doxycycline, resulted in a favorable outcome without complications.

AUTHOR CONTRIBUTIONS

Mehrdad Farrokhnia: Investigation; methodology. **Sara Shafieipour:** Conceptualization. **Mohsen Nakhaie:** Writing – review and editing. **Mohammad Rezaei Zadeh Rukerd:** Supervision; validation; writing – original draft; writing – review and editing.

FUNDING INFORMATION

None.

CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

DATA AVAILABILITY STATEMENT

The data supporting the findings of this study are available upon reasonable request from the corresponding author.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

ORCID

Mohammad Rezaei Zadeh Rukerd  <https://orcid.org/0000-0001-8390-4344>

REFERENCES

1. Farrokhnia M, Ghalejoogh ZY, Rohani M, Ghasemi A, Esmaili S, Mostafavi E. Cases of Mediterranean spotted fever in south-east of Iran. *Iran J Microbiol.* 2020;12(3):256-260.
2. Spervovasilis N, Markaki I, Papadakis M, Mazonakis N, Ierodiakonou D. Mediterranean spotted fever: current knowledge and recent advances. *Trop Med Infect Dis.* 2021;6:172.
3. Esmaili S, Latifian M, Khalili M, et al. Fatal case of Mediterranean spotted fever associated with septic shock. *Iran Emerg Infect Dis.* 2022;28(2):485-488.

How to cite this article: Farrokhnia M, Shafieipour S, Nakhaie M, Rukerd MRZ. Mediterranean spotted fever as a non-endemic disease in the southeast of Iran: Diagnosis and treatment based on specific skin lesion. *Clin Case Rep.* 2023;11:e7577. doi:[10.1002/ccr3.7577](https://doi.org/10.1002/ccr3.7577)