

2021 Best Research Poster Award



Title: Highlighting Q fever diagnosis and management in pregnancy. Considerations for maternal infant management as well as prevention strategies.

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INTRODUCTION

Q fever is a zoonotic disease caused by the organism *Coxiella burnetii*.

Q fever in pregnancy is likely under-reported due to the asymptomatic nature of the disease in pregnancy. Q fever in pregnancy, in particular early trimester illness is associated with the development of chronic infection, obstetric, and neonatal complications (spontaneous abortion, intrauterine growth restrictions, premature delivery)

We present a case of a 27 year old female, diagnosed with acute Q fever at 26 weeks gestation. The patient was tested in context in context of a Q fever outbreak in the workplace.

She demonstrated seroconversion from booking bloods based on serial serological micro-immunofluorescence testing at the Australian Rickettsial Reference Laboratory (ARRL).

OBJECTIVES

This is a teaching case report. We aim to highlight specific considerations surrounding

- Q fever testing modalities
- Management and impact of Q fever in pregnancy
- Modifiable occupational health and safety measures

METHODS: Case Report

RESULTS

Our patient commenced cotrimoxazole with folate supplementation until delivery, followed by post-partum doxycycline as a bactericidal agent. Foetal growth was closely monitored by the obstetrics team with slowing of growth noted in the final trimester. A term healthy infant was born at 38/40.

Coxiella burnetii PCR on placenta, infant blood as well as maternal breast milk both returned negative.

Placental histology showed areas of chronic infarction only at the cord insertion site with no intervillitis noted.

REFERENCES & ACKNOWLEDGEMENTS

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- Carcopino, X., Raoult, D., Bretelle, F., Boubli, L. and Stein, A., 2007. Managing Q fever during pregnancy: the benefits of long-term cotrimoxazole therapy. *Clinical Infectious Diseases*, 45(5), pp.548-555

We would like to acknowledge the Australian Rickettsial Reference Laboratory for their assistance in serology testing.

We would also like to acknowledge our patient for her consent in allowing us to present this as a teaching case.

Table 1: Serology results leading to diagnosis of Q fever

Immuno-fluorescence		February (booking bloods)	June	July
Phase 2 antibody	Phase 2 IgA	NOT DETECTED	NOT DETECTED	DETECTED (titre=400)
	Phase 2 IgM	NOT DETECTED	DETECTED (titre=100)	DETECTED (titre =25)
	Phase 2 IgG	NOT DETECTED	DETECTED (titre >=3200)	DETECTED (titre >=3200)
	Phase 2 Total	NOT DETECTED	DETECTED (titre >=3200)	DETECTED (titre >=3200)
Phase 1 antibody	Phase 1 IgA	NOT DETECTED	NOT DETECTED	NOT DETECTED
	Phase 1 IgM	NOT DETECTED	DETECTED (titre=800)	DETECTED (titre >=3200)
	Phase 1 IgG	NOT DETECTED	DETECTED (titre=200)	DETECTED (titre >=3200)
	Phase 1 Total	NOT DETECTED	DETECTED (titre=800)	DETECTED (titre >=3200)

RESULTS (continued)

Longer term follow up Q fever serology for both infant and mother has been planned

Due to recognised placental tropism of *Coxiella burnetii*, therefore potential infectious aerosolisation, airborne precautions were applied in the birthing suite during delivery.

DISCUSSION

Management of Q fever in pregnancy is guided by small case series with aims to prevent placentitis, spontaneous abortion and progression to chronic infection.

Congenital or neonatal Q fever is not well described in literature. There are currently no established neonatal management guidelines for infants born to mothers diagnosed with Q fever in pregnancy.

Notably, our patient did not have a history of prior Q fever vaccination as it was not mandatory for all staff at her workplace where there was frequent close domestic and wild animal contact.

CONCLUSION

- Q fever in pregnancy has significant consequences for both mother and infant. Risk factors include maternal progression to chronic Q fever and poorer neonatal growth outcomes
- Serology by micro-immunofluorescence is the gold standard test of choice in confirmation and follow up of Q fever
- This case highlights an opportunity to address workplace health and safety measures including Q fever vaccine access for people working in at risk occupations which traditionally has been focused on abattoir workers
- Neonatal management protocols for infants born to mothers diagnosed with Q fever in pregnancy remain lacking