

Coxiella burnetii endocarditis: a single-centre review from the surgical perspective

Dr Michael Daley^{1,2}, Dr Jason Varzaly^{1,2}, Dr Rishendran Naidoo^{1,2}, Dr Robert Horvath^{1,2,3}

1. The Prince Charles Hospital, Metro North, Queensland, Australia
2. The University of Queensland, Australia
3. Pathology Queensland

Background

Acute Q fever is a zoonotic disease caused by infection with *Coxiella burnetii*. A small subset of people with acute Q fever progress to chronic Q fever, which can manifest years after the acute infection. Endocarditis is one of the predominant presentations of chronic Q fever and can cause significant morbidity and mortality if left untreated. Currently, there is a paucity of data from which to derive Q fever endocarditis management guidelines. We sought to

Methods

We identified 18 patients with Q fever endocarditis at our institution based on valve specimen PCR or preoperative modified Duke criteria, in the absence of a surgical specimen. Data were collected retrospectively from review of medical records and outpatient letters. Modified Duke (Raoult) criteria was used to determine pre-operative diagnosis of infective endocarditis with Q fever.^{1,2}

Results

18 patients identified with Q fever endocarditis

- 16 underwent surgical management for valvular involvement.
- Two surgical patients had missing medical records and were excluded.
- Median age at operation was 61 years (range: 28 – 87 years)
- Mean follow-up was 11.7 ± 6.4 years.
- Only 5/14 (36%) patients had a pre-operative diagnosis of Q Fever endocarditis, as Q fever serology was often performed following the operation.

Echocardiography and operative findings

- The aortic valve was affected in all patients, while one patient had aortic and mitral valve involvement
- On pre-operative echo 4/14 had evidence of sinus/abscess formation, and 5/14 had evidence of vegetations.
- Operative findings varied from thickened leaflets with evidence of infection, to complete annular dehiscence of a bioprosthesis. One patient was found to have a vegetation in the left atrium during intra-operative transoesophageal echocardiogram and subsequently underwent vegetectomy.

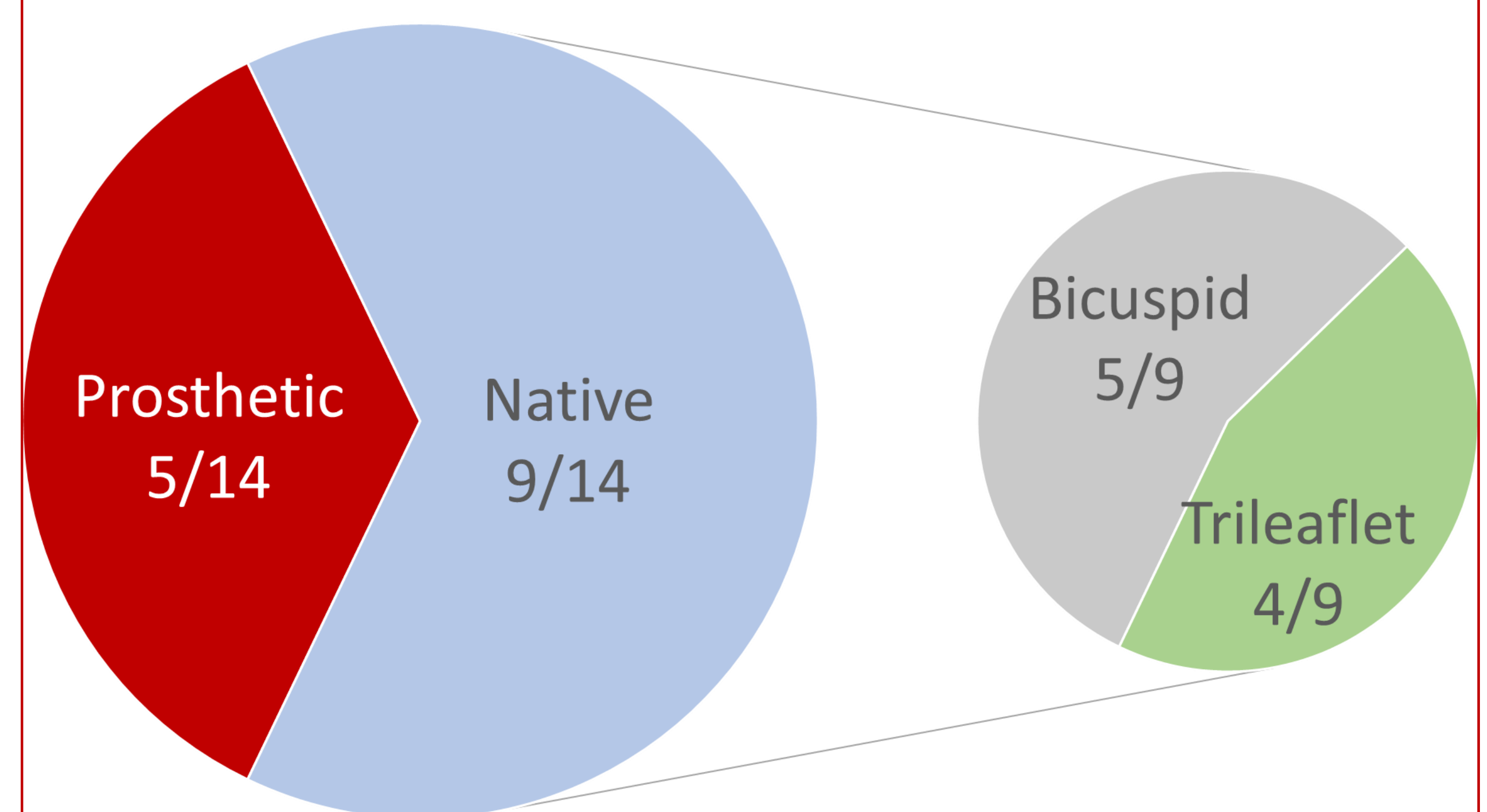
Antibiotics

- Seven patients (50%) were commenced on antibiotic therapy preoperatively following diagnosis of Q fever or infective endocarditis (5 patients on doxycycline/hydroxychloroquine, 2 patients on empirical antibiotics, respectively).
- All other patients were commenced on antibiotics following valve findings or serology.

Follow-up

- Duration of antibiotic therapy was >3 years in 9 patients due to persistently high Phase I IgG titres (>1280).
- One patient died in the early post-operative period from multi-organ failure and sepsis.
- Seven patients died from various unrelated causes
- Two patients (14%) underwent redo operations: one patch repair of a left ventricular outflow tract sinus, and one redo aortic valve replacement for moderate mixed disease after 11 years.
- No other valve dysfunction was evident during follow-up.

Aortic Valve Endocarditis



Conclusion

Infective endocarditis from *Coxiella burnetii* remains a difficult entity to diagnose and manage. Many patients in our experience were diagnosed post-operatively following operative findings or further post-operative symptoms. Implanted prosthetic valve longevity appears satisfactory despite long-term persistently high titres.. Due to the occasional indolent nature of chronic Q fever, we suggest a low threshold to performed *Coxiella* PCR on resected valve tissue.

References:

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2. Fournier PE, Casalta JP, Habib G, Messana T, Raoult D. Modification of the diagnostic criteria proposed by the Duke Endocarditis Service to permit improved diagnosis of Q fever endocarditis. *The American journal of medicine*. 1996;100:629-633.