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Relapsed chronic Q fever endocarditis in a child in Saudi Arabia

Introduction: Although chronic Q fever is rare in children, by far endocarditis is the most common syndrome of chronic Q fever. This is particularly so when there is preexisting congenital heart disease. Such cases do present diagnostic and therapeutic challenges.

Case: We present a case of relapsed chronic Q fever endocarditis in an 8-year-old boy with Double Outlet Right Ventricle corrected by Yasui (Norwood/Rastelli) procedure with Right Ventricle-Pulmonary Artery Contegra conduit insertion. Twenty one months later, his illness started as pyrexia of unknown origin with splenomegaly and a cardiac murmur. Based on echocardiogram, diagnosis of Culture Negative Endocarditis was made, for which he received a 6-weeks course of Vancomycin and Gentamicin and then discharged. The fever however did not completely resolve. Readmitted after one month to rule out Subacute Bacterial Endocarditis, and empirically started on Vancomycin, Ceftazidime, Amikacin and Rifampicin. Diagnosis with chronic Q fever endocarditis was made by serology, and treatment with Ciprofloxacin commenced and continued for 2 years. The patient developed conduit stenosis. During the time of therapy his *Coxiella burnetii* antibodies titers were rising, along with liver transaminitis and development of hepatomegaly. At that stage, we thought that this was because of the presence of infected pulmonary artery conduit (foreign material). The patient was referred to cardiac surgery again for removal of what we thought was the source of persistence of his high *C. burnetii* antibodies titers. The patient underwent open heart surgery and conduit replacement. We restarted him on Ciprofloxacin for another 3 years. We also added Rifampicin and increased the dose of Ciprofloxacin. But his titers were not going down as expected, so we started him on Doxycycline as he was 8 years old, and discontinued Ciprofloxacin and Rifampicin. He responded well initially, but liver enzymes remained elevated. Therefore, we restarted Ciprofloxacin again in addition to the Doxycycline, which were effective in normalizing his liver enzymes, and had resolved hepatosplenomegaly. Unfortunately, the patient developed drug intolerance to Ciprofloxacin, so we had to switch it back to Rifampicin that was later discontinued as his liver enzymes were rising. On latest follow up, towards his ninth birthday, the patient again having rising *C. burnetii* antibodies titers.

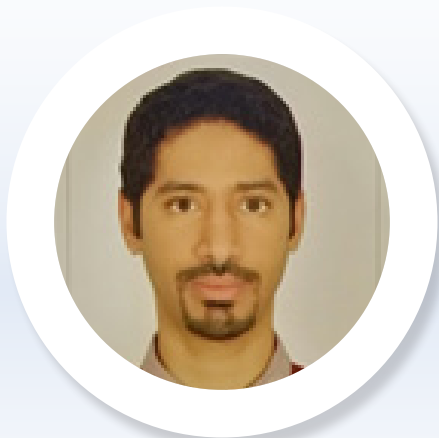
Discussion: The clinical course of chronic Q fever endocarditis can be slow and indolent in nature, some with relapses and treatment failure. Looking into the literature, up to 50% of the time, relapse can occur even with prolonged therapy. This is the first case of pediatric chronic Q fever endocarditis in our institution since its start up in 1982. Our patient initially received 2 years of antibiotic treatment for chronic Q fever endocarditis, and then continued for another 3 years. Currently he is on Doxycycline. Despite this, the patient still has relapse.

So the question remains, for how long should we treat a patient post relapse?

Biography

Ahmed Saleem, MD is a clinical fellow in The Saudi Board Pediatrics Infectious Diseases since March 2018 and doing his training at King Faisal Specialist Hospital and Research Center in Riyadh. He is currently employed with the National Guard Health Affairs at King Abdulaziz Medical City, Saudi Arabia where he trained and obtained his Saudi Board Specialty certificate in Pediatrics in November 2016. Since then he was registered as Senior Registrar in Pediatrics in the Saudi Commission of Health Specialties. He achieved the top mark in UK in GCSE Science Double Award and had received an award in a magnificent ceremony held at the Brewery Conference Center in London, along with other top students in other subjects in the United Kingdom and recognized by a certificate of appreciation from HRH Prince Turki Al-Faisal, Saudi Ambassador to London at the time. He has presented in many journal clubs and also presented a rare case of *Lophomonas blattarum* lung infestation in a child with leukemia in the Saudi Ministry of Health Fifth Parasitology Conference held at King Fahd General Hospital in Jeddah. He is currently working on a cohort study project to calculate rates of latent tuberculosis among cancer patients following the Princess Nora Oncology Center, King Abdulaziz Medical City.

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