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Under-recognised and misdiagnosed; post surgical rapidly growing mycobacterial infections in South India

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Background: Rapidly growing mycobacteria (RGM) are environmental organisms that can cause post-operative wound infections. Infections typically occur after laparoscopic surgery due to inadequate sterilization of heat-sensitive instruments. We describe the clinical presentation and management of post-operative RGM infections at Christian Medical College (CMC), a large tertiary referral hospital in South India.

Methods & Materials: Laboratory records from 1st January 2012 to 31st August 2015 were examined to identify patients with culture positive post-operative RGM infections. The electronic medical records of these patients were reviewed together with their haematological, histological and radiographic data.

Results: Over this period, 32 patients were diagnosed with culture proven RGM infection as a consequence of surgery. *Mycobacterium fortuitum* was the commonest isolate (46.9%), followed by *M. abscessus* (31.2%) and *M. chelonae* (18.8%). Most patients had wound infections (96.9%); 78.1% extended into underlying muscle and 28.1% into structures deep to muscle. 37.5% patients had infection associated with prosthetic material including surgical mesh, pacemakers, cardiac valve and a neurosurgical shunt. Surprisingly, most patients (65.6%) had undergone open surgical rather than laparoscopic procedure (25%).

Only 4 patients (12.5%) acquired RGM infection following surgery at CMC. Over this period, 96,713 operations were performed resulting in an infection rate of 0.004%. 87.5% patients underwent operation at a different hospital, presenting to CMC a median 4 months after operation. 43.8% received inappropriate treatment for wound infection before presenting to CMC. 37.5% received antibiotics and 9.4% empirical antitubercular therapy, highlighting poor knowledge about RGM infections.

All patients were treated with surgical debridement; 75% received subsequent antibiotics consisting of a two or three drug combination of amikacin, levofloxacin/moxifloxacin, clarithromycin or linezolid. Patients jointly managed by surgeons and infectious disease physicians had a higher rate of clinical response (75%) with less loss to follow up (25%) than those managed exclusively by surgeons (43.8% and 57.25% respectively).

Conclusion: RGM infections continue to complicate routine operations in India, although they are a rare complication of surgery in our hospital. They are under-recognised and frequently misdiagnosed resulting in delays in appropriate treatment. Higher clinical response rates are seen where management involves surgeons and infectious disease clinicians with laboratory support from microbiologists.

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Interferon Gamma Release Assay (IGRA) friend or foe - Clinical application of IGRA in a tuberculosis endemic country

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Background: Though IGRA has been compared to tuberculin skin test, there is scarce clinical data in India regarding correlation of IGRA for diagnosis of active or latent tuberculosis. The role of IGRA for diagnosis of latent tuberculosis and initiation of prophylaxis in an endemic country has often been questioned.

Methods & Materials: All adult patients (age > 18 years) for whom an IGRA test was done as part of their clinical work up in our center, in 2013 were included. Demographic and clinical details including underlying diagnosis, indications, laboratory investigations (Mycobacterial smears, cultures and Xpert MTb/rif), initiation of prophylaxis or development of tuberculosis within 1 year of follow up were recorded.

Results: A total of 434 patients were included, the majority were males (61%) and the mean age was 39.4 years. The common indications for ordering IGRA was to rule out active tuberculosis in 329/434(75.8%) and for diagnosis of latent tuberculosis prior to initiation of immunosuppressive therapy in 68(15.7%). IGRA was negative in the majority of the patients (63.6%). Among the IGRA positive 158/434(36.4%) only 4 were initiated on prophylaxis for possible latent tuberculosis whereas in the IGRA negative none received prophylaxis. In the IGRA positive 50(32%) and in the IGRA negative 47(17.6%) received empirical antituberculosis therapy for suspected tuberculosis. *M. tuberculosis* was however confirmed by cultures and/or PCR in 14(3.2%) of which 8 were initially IGRA positive and 6 were IGRA negative. In the sub group where IGRA was used to diagnose latent tuberculosis- 42/53(79%) in the IGRA negative and 14/15(93%) among the IGRA positive were on immunosuppressive drugs. Of these though 15 patients were IGRA positive, only 2 (13.3%) initiated prophylaxis possibly due to high level of Isoniazid monoresistance in our hospital.

Conclusion: A majority of the patients were found to be IGRA negative, which was a surprising finding in a high tuberculosis burden country. IGRA is still being used as a supporting tool for a diagnosis of active tuberculosis in the absence of other confirmatory microbiological evidence. Even if IGRA is used to rule out latent tuberculosis there is a reluctance to initiate prophylaxis.

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