Diagnosis of Nontuberculous Mycobacteria through Endoscopic Biopsy Samples

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We read with interest the article “Mediastinal Adenopathy in India: Through the Eyes of Endobronchial Ultrasound” by Dhamija et al in your September 2015 issue.¹ This modality offers several advantages for etiologic diagnosis of mediastinal lymphadenopathy.

As per the results of this study, 75 of 300 patients were found to have mediastinal lymphadenopathy of tuberculous origin diagnosed by microscopy and/ or cytology. Of these, 23 samples were culture positive for MTB and interestingly, non-tuberculous mycobacteria (NTM) was isolated from the culture of 2 specimens.

In this context we recount a case 3 years ago of a 54 year old lady who presented elsewhere with fever and cough. She was diabetic with a history of significant, intentional weight loss. This could have put her at a risk for reactivation of TB. Despite culture and molecular positivity for RGM, we considered this not to be the true pathogen and started her on standard four drug antitubercular treatment which resulted in clinical and radiological improvement and eventual cure. The patient remains well at a three year follow up.

While mediastinal lymphadenopathy due to MTB is very common, RGM have seldom been reported in the literature as etiological agents. In a case report of extensive mediastinal lymphadenopathy,² the authors point out that to their knowledge, there is no other description of mediastinal lymphadenitis caused even by other nontuberculous mycobacteria (NTM) in an immunocompetent adult. Even in children, this location of NTM disease is extremely rare.

As more patients undergo endosonographic biopsies, careful clinical correlation is advised to determine if the organism detected through molecular or culture based tests is actually the true pathogen. Since rapidly growing species of NTM grow earlier, the specimen is liable to be discarded and the detection of MTB which needs a longer incubation time, to be missed. On the other hand, a specimen obtained from a percutaneous CT guided biopsy is likely to minimize, if not eliminate this problem.

Meticulous manual cleaning and disinfection of scopes is necessary. Even if, the scope may not then harbour live organisms, it may still remain “molecularly” contaminated. Molecular tests will then be misleading to clinicians who may want to treat with a drug regimen designed for RGM rather than for MTB. Such a regimen would be toxic, expensive and have suboptimal efficacy for MTB.

References

which uses a genetic probe based on the 16S rDNA sequence of the Mycobacterium tuberculosis gene (Gen-Probe Accuprobe® Gen Probe, Inc.) to identify Mycobacterium tuberculosis complex. In case this test is negative in a culture positive sample, suggesting non-tubercular mycobacteria, it is further processed using GenoType Mycobacteria CM (Hain Lifescience GmbH, Nehren, Germany) for identification of 16 common Mycobacterial species. Meanwhile, a second inoculate from the original sample is incubated again in liquid culture and the result is not released to the clinician till both the cultures grow Mycobacteria but the isolates are negative for M. tb complex. Also, the solid medium is incubated for any growth which occurs even after the report of NTM has been issued and not discarded.

The authors have cited an article published in chest in 1999, when minimally invasive modalities like Linear EBUS were not available and there were very few options to sample mediastinal nodes non surgically. We agree that the data is scant. However, we came across a couple of references from more recent times describing this entity which are listed below, few cases diagnosed using EBUS and describing cases of not only NTMs but also rapid growers.3-5 As and how the use of these diagnostic modalities increases in the tubercular endemic regions of the world, we are likely to see more evidence for the same.

Of course, it goes without saying that all the laboratory results have to be correlated with the clinical and radiological inputs and each case should be treated on its own merit. We would like to emphasize on the fact that both our patient were treated with appropriate regimens against NTM, and not standard ATT. Both responded well to treatment and are doing well on follow up.

References