中文題目: 結核分枝桿菌聚合酶連鎖反應偽陰性於肺腫塊之分析

英文題目: False negative polymerase chain reaction on sputum smear positive samples in the differential diagnosis of chest lesions can sometimes be difficult in areas where TB is endemic, because TB shows multiple patterns of lung diseases that mimic benign or malignant disease. A accurate diagnosis of TB is difficult established by culture

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CASE REPORT –A　tough question about　treatment about false negative polymerase chain reaction on sputum smear positive samples in the differential diagnosis of chest lesions as presenting as RUL 3cm mass can sometimes be difficult in areas where TB is endemic, because TB shows multiple patterns of lung diseases that mimic benign or malignant disease. A accurate diagnosis of TB is difficult established by culture

CASE REPORT

Case

A 58 years old construction worker send from LMD due to lung mass found on recent health exam .He denied any past history, and his family history was unremarkable ,none of allergy history. denid history of travel, nor avian contact in recent 2 weeks. His vital signals GCS: E4V5M6 TPR : 36.6,87,18,121/80 HEENT: isocoric pupil: 3/3 mm, L/R: +/+ EOM: full and free; no nystagmus; pale conjunctiva(-); icteric sclera(-)Neck: supple, Chest: clear BS Heart: RHB, no audible murmur; Abdomen: soft, normoactive bowel sound, tenderness(-), rebounding pain(-), tympanic(-),flank knocking pain(-) Extremities: freely movable, pitting edema(-) CXR revealed Rt upper lung mass? R.B.C 5.040 Hemoglobin :11. 5 Hematocrit :45.900 Platelet 352000 MCV 91.000　N-Seg: 63.8 Lymph :29.5 Baso0.3　Eosin:0.6　BUN:12 SUAGR AC 212 Creatinine :0.9 Na 136 K 3.6 AST:22 ALT:18　C.R.P 0.7 CEA:5.7 X-ray: RUL mass? Subsequent chest clinics prescribed 3 sputum　collection with just one AFB positive sputum samples were

subjected to culture and PCR for specific detection of DNA from *M.* tuberculosis was negative. Among the 2 remaining samples, all were positive for culture, all were negative for TB PCR and one was positive for TB PCR.

1. Introduction

Tuberculosis, a leading cause of death, infects more than a third of the world population . Conventional methods for the diagnosis of tuberculosis include smear and culture. Ziehl-Neelson staining for acid-fast bacilli requires 104 bacilli/ml of tissue or fluid specimens to acquired positive result. Although culture for mycobacterium is more sensitive, still needs 101-102 bacilli/ml of sample for the diagnostic yield and requires two to four weeks for the growth of tuberculosis. ThePCR has been standardized to be of diagnostic tool when performed on airway samples in TB . Rapid amplification of TB specific DNA enables results.

Discussion:

The radiograph is the major diagnostic tool for the recognition of TB. However, approximately 10% of patients who are subsequently proved to have TB had pulmonary infiltrate that was not thought to be characteristic of TB on radiography . TB shows variable patterns that mimic benign and malignant lung disease. One of the most common causes for radiographic misdiagnosis is the presence of a large nodule or mass like opacity that is considered to be a neoplasm. Sometimes, it seemed more difficult to predict TB than it is to predict malignancy in solitary pulmonary nodules on CT scans .because TB shows unusual radiologic findings that simulate benign and malignant lung disease and because TB coexists with lung Ca. A definitive diagnosis of pulmonary TB requires culture of *M tuberculosis* or a smear showing AFB in appropriate materials. In areas where TB is endemic, sputum is the easiest and most valuable source of the organism. The COBAS® TaqMan® MTB Test is an *in vitro* nucleic acid amplification test for the qualitative detection of MTB complex DNA in liquefied, decontaminated and concentrated human respiratory specimens, including sputum and BAL. The test utilizes the AMPLICOR®Respiratory Specimen Preparation Kit for manual specimen preparation and the COBAS® Target

Selection :The *Mycobacterium* genome contains a highly conserved region of approximately 1500 nucleotides encoding the gene for 16S rRNA. The COBAS® TaqMan® MTB Test uses TB genus specific primers to define a sequence within this region18. Target Amplification:.This test has only been validated using expectorated and induced sputum and BAL specimens that have been liquefied, decontaminated and concentrated using NALC-NaOH. Testing of other specimen types may result in false negative or false positive results. Detection of *M. tuberculosis* depend on the amounts of bacteria present in the specimen and also be affected by specimen collection methods, patient factors or severity of infection with *M. tuberculosis*. False negative results may occur due to polymerase inhibition. The Mycobacterium internal control has been added to the COBAS® TaqMan® MTB Test to permit the identification of processed specimens containing substances that may interfere with PCR amplification of greater than 20 copies/test. False negative results may occur in the presence of high titer NTM , if MTB is present at a lower titer than the interfering Mycobacterium species. PCR can be widely employed. In addition, PCR is often associated with some degree of hypocritical. Clinical alertness for high risk patients all should be carefully screened in order to conduct subsequent treatment program.