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| |  | | --- | | Briefing: Tuberculous Pericarditis | | ransparent image | | **August 2006** | | ransparent image | | **Jennifer Babik, MD, University of California San Francisco** **Gabriel Chamie, MD, University of California San Francisco** | | ransparent image | | |
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| See [Case 1: Shortness of Breath and Abdominal Pain](http://www.hivinsight.com/InSite?page=md-ccl-00-00&doc=md-ccl-ca-01)  Tuberculosis (TB) pericarditis is the most common pericardial disease in sub-Saharan Africa and may present as pericardial effusion, constrictive pericarditis, or effusive-constrictive pericarditis.([1,2](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=1,2','References'))) TB accounts for <5% of cases of pericardial disease in the developed world, yet it is the cause of 50-70% of cases in sub-Saharan Africa.([2,3,4](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=2,4,5','References'))) The prevalence of TB pericarditis in HIV-infected individuals with pericardial disease is even higher, with TB accounting for 96-100% of cases in this group.([3,4](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=4,5','References'))) Interestingly, the presence of HIV infection has not been found to significantly alter the clinical, radiologic, echocardiographic, or diagnostic characteristics of TB pericarditis.([2,4-6](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=2,5-7','References')))  As a result of the high incidence of TB pericarditis in sub-Saharan Africa, especially in patients with HIV infection, and the lack of definitive diagnostic methods, treatment often is begun empirically.([1,4,7](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=1,5,8','References')))  The classic finding on echocardiography in TB pericarditis is the presence of fibrin strands in the pericardial space; however, this finding is present in only 59-64% of cases and is not specific for TB pathology.([1,2,4](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=1,2,5','References'))) Although echocardiography is the gold standard for diagnosing a pericardial effusion, it is not always available in resource-limited environments. In these settings, chest radiography can be an important diagnostic tool for the detection of fluid in the pericardial space. In patients presenting with TB pericardial effusions, chest radiography showed an enlarged cardiac silhouette in 95-100% of cases, with the cardiothoracic ratio usually between 0.55 and 0.82.([2,4](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=2,5','References'))) Chest radiography also can provide other useful diagnostic clues: For example, the chest radiograph shows active pulmonary TB in 30% of patients with TB pericarditis.([1,2,8](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=1,2,9','References'))) Interestingly, because the lymphatic drainage of the pericardium goes mainly into the mediastinal lymph nodes, TB pericarditis is associated with mediastinal lymph node enlargement but not with hilar lymphadenopathy. This mediastinal lymph node enlargement cannot be seen on routine chest radiography, only by chest computed tomography or magnetic resonance imaging.([1,8](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=1,9','References')))  Once a pericardial effusion is diagnosed, pericardiocentesis often is required either for further diagnostic evaluation or, as in this case, for therapeutic drainage in a patient with compromised hemodynamic status. Pericardiocentesis can be performed blindly, or under the guidance of electrocardiogram, fluoroscopy, or echocardiography. Complications of blind pericardiocentesis occur in approximately 5-15% of patients,([9,10](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=10,11','References'))) whereas echocardiography-guided pericardiocentesis can be performed with a complication rate of <5%.([11](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=12','References'))) Echocardiographic guidance has the advantages of visualizing the location and distribution of the effusion, finding the ideal entry site, and confirming the position of the needle tip. The advantage of being able to confirm needle position is important particularly when bloody fluid is withdrawn (which is usually the case for TB pericarditis), in order to differentiate between cardiac, pleural, and pericardial spaces.([1,10,11](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=1,11,12','References'))) Whereas blind pericardiocentesis carries a higher risk of complications than echocardiography-guided pericardiocentesis, it may be the only modality available, and the risks must be weighed against the diagnostic and therapeutic benefits. Acid-fast bacilli (AFB) culture is not performed in many developing country settings due to limited resources. This presents a difficulty in diagnosis because AFB smears from pericardial fluid often are negative, whereas cultures are more likely to be positive: For example, in 3 studies in sub-Saharan Africa, AFB smears from the pericardial fluid were positive in 4-12% of cases of TB pericarditis, whereas AFB cultures were positive in 38-68% of cases.([4-6](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=5-7','References'))) Other diagnostic modalities, such as polymerase chain reaction and adenosine deaminase levels, often are not available in resource-limited areas. In fact, some argue that culture should remain the standard for diagnosis in developing areas where there is insufficient experience in immunological or microbiological techniques.([7](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=8','References'))) There are other pericardial fluid studies, such as cell count with differential, that may be available more readily and also may support the diagnosis of TB. In TB pericarditis, the fluid is bloody in about 80% of cases and usually has a high protein count and elevated leukocyte count with lymphocyte or monocyte predominance.([1](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=1','References')))  The patient in this [case](http://boston.lti.cs.cmu.edu/Services/clueweb12_render/getresource.cgi/renderpage.cgi?id=clueweb12-1803wb-14-28309&c=false) was found to be HIV positive and was treated empirically for TB pericarditis with 4-drug anti-TB therapy as well as with adjunctive prednisolone, even though no definitive diagnosis was made and available resources did not permit definitively excluding all alternative diagnoses. For example, this patient did not have a chemistry panel to evaluate for uremia as a potential etiology of his pericarditis. Especially in HIV-infected patients, it is reasonable to treat for TB given the particularly high incidence of TB pericarditis in patients with HIV infection and pericardial disease.([3,4](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=4,5','References'))) HIV testing often is readily available, even in resource-limited countries, and can increase the pretest probability of TB pericarditis significantly based on epidemiological data. Close follow-up should be assured so that, if there is an inadequate response to therapy, alternative diagnoses can be considered and a more exhaustive diagnostic workup can be undertaken. In addition, it should be noted that the use of adjunctive corticosteroids in the treatment of TB pericarditis remains controversial. Published trials show a trend toward reduction in mortality but no significant decrease in pericardial fluid reaccumulation or progression to constrictive pericarditis.([1,12](javascript:openWindow('InSite-KB-ref.jsp?page=md-ccl-br-01&rf=1,13','References'))) |
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